
MANAGING ECONOMIC GROWTH: MARKETING, MANAGEMENT, AND INNOVATIONS

Illiashenko, S.M., Strielkowski, W. (eds.)



**Pražský Institut zvyšování kvalifikace
Prague Institute for Qualification Enhancement**

Illiashenko, S.M., Strielkowski, W. (eds.). Managing economic growth: marketing, management, and innovations. 1st edition, Prague Institute for Qualification Enhancement: Prague, ISBN 978-80-906210-0-8, 640 pages

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© Publisher: Pražský Institut zvyšování kvalifikace, 2016

ISBN 978-80-906210-0-8

640 pages

Prague 2016

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INTRODUCTION

The completion of the downward wave of the 5th technological order and the beginning of the 4th industrial revolution are characterized by rapid change of the socio-economic development vector of individual organizations, industries, states and etc. These changes are dualistic in nature. On one hand, they dramatically increase market uncertainty and risks caused by it, on the other – provide the opportunity for the advanced development based on the various types of innovation creation and implementation. The information and knowledge embodied in new products, their production technologies and marketing, management methods, and etc. come out on the leading position among the factors different levels of business entities (individual organization, industry, market, national or international) economic growth.

In these circumstances, the problem of the research methods of development and scientific substantiation, development and implementation of comparative business entities competitive advantages, which would have provided the opportunity to maximize available market opportunities of innovative development and to provide the conditions for their long-term survival and growth according to their mission is actualized.

From these positions the authors of the monograph have attempted to examine the organizational-economic preconditions of the theoretical and methodological framework improvement, as well as existing management tools and methods of innovative development at different levels of aggregation and to suggest on this basis their own approaches that allow to align more effectively the innovative development internal capabilities (the innovative development potential) of business entities accordingly to the external, which are generated by the market.

The authors of the monograph covered a fairly wide range of management problems of economic growth based on innovations and innovation activities. In particular, they investigated the innovation factors role in ensuring the comparative competitive advantages of the national economy, as well as the industry-specific transition features to separate industries (in the example of Ukraine) innovative way of development.

The methodological bases of innovative growth management has not been omitted by the authors' attention. So the relationship between economic growth and the information society development, the problems of ensuring national security innovation are analyzed by them, certain fundamental aspects of socio-economic simulation development processes, and etc. are revealed.

The regional features of business spatial organization as the innovation driving force, and the problem of its infrastructural support while improving and harmonizing it with the realities of the people preparation and retraining system: the regional research universities formation, the innovative postgraduate business education development and etc. are shown.

Considerable attention is paid to the organizational and economic instruments development of the innovative solutions adoption: the methodological foundations of innovation process management are deepened; the new methods of decision-making in the cost management field and the new approaches to the formation of corporate reporting are introduced; the approaches to the innovation process organization in enterprises and institutions are improved.

The fundamental and applied aspects of innovations marketing, as the support innovation marketing and simultaneously one of its major components are studied. Another is the research and development activity. The marketing innovation role in the strategic industrial enterprises management, which is manifested depending on the enterprise category (large, medium, small) is shown.

The approaches to the innovative development management of industrial enterprises market opportunities are significantly developed. In this context, considerable interest of the import substitution strategy in the design and implementation in the competition aggravation conditions from foreign producers side is developed.

According to the existing trends towards the economic development socialization processes, the problem of business social responsibility, the compliance prospects with the principles of socio-ethical marketing in the innovation activities are investigated by the authors. The peculiarities of its use in commercial and non-commercial areas (according to the various activity sectors) are highlighted.

The authors studied the questions of the innovative activity ecologization and innovative development, based on this methodology and methodological tools of innovative activity management from the standpoint of sustainable development.

The innovations marketing and logistics role and place in tool support for the innovation are clarified. Some aspects of the modern marketing theory development, and practical applications features of these tools are shown. The applied aspects of selected innovative approaches to the enterprises and institutions communication policy development and implementation are highlighted. The innovation theoretical-methodological and practical aspects in the logistics activity are analyzed.

The book includes the participants' scientific works of the X International scientific-practical conference «Innovations marketing and innovations in marketing» (September 29 – October 1, 2016, Sumy, Ukraine), the authors' initiative, some research results of the Department of marketing and innovative activity management (SSU, Sumy state University (SSU):

- «The fundamental principles of development management of industrial enterprises innovative culture» № DR 0115U000687;
- «The problems research and prospects of national economy innovative development» № DR 0116U006360;
- «The marketing and innovations use in various activity fields», № DR 0116U006359;
- «Development of the enterprises marketing policy fundamentals in market economy conditions», № DR 0115U001004.

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Prague, 19 December 2016

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Part I

INNOVATIONS
AND INNOVATIVE ACTIVITY,
THEIR ROLE
IN ECONOMIC GROWTH

Section 1

Background for innovative development management

1.1. Innovation factors of national economy competitive development

Sardak S.E., Skrypnyk N.Ye., Bilskaya O.V., Simakhova A.O.

In the twenty-first century the international community formed a new system of values, gradually moves to the post-industrial era. The main factors of this process are innovations based on scientific and technical achievements and effective management system. Scientific and technological progress changes the scope and structure of production, has a significant impact on the entire global economy. It is obvious that in the twenty-first century innovation have become fundamental basis of economic progress and ensure positive socio-economic dynamics. Recently, the concept of «innovation» often appears in the scientific literature, but still there is no common opinion on this category that determines the relevance of this research.

A lot of scientific studies are devoted to research the essence of innovations. In particular, should be highlighted works of such researchers Y.M. Bazhal, O.O. Drobyshevska, B.F. Zablotskyi, P. Drucker, M.D. Kondratiev, E. Mansfield, S.V. Onyshko, A.A. Peresada, I.V. Razumov, B. Santo, B. Twiss, I. Schumpeter, H.O. Yarin and others. But mostly scientists approach the essence of the category «innovation» purely from technical and economic point of view. In our opinion, there is a need for a broader interpretation of the category for highly determining factors of national economies.

Aim of the study is to review the genesis of the main approaches to the category of «innovation», their synthesis and prompting author definition of the term, determine the impact of innovative factors to the highly competitive development of national economic.

It is believed that the term «innovation» was first introduced in scientific circulation in the 30s of the twentieth century by scientists I. Schumpeter. But even earlier, in 1911, in his work «The Theory of Economic Development» Schumpeter used the term «new combination» (later identical to the concept «innovation») as a new scientific and organizational combination of factors, motivated by entrepreneurial spirit. However scientist distinguished five main types of combinations: the

production of a new product, article, services for the consumer, on which entrepreneur focuses; introduction to the industry or trade any new production method; conquest and development of new market products; the use of new materials; introduction of new production [1, p. 159]. Fundamentally important is that Schumpeter introduced the idea of innovation as the driving force of economic development of society, through which the economy can get away from their «usual and dramatically change the trajectory of their own performance» [1, p. 153]. Scientific views of Schumpeter have become the theoretical basis for further study of the factors of economic growth which create national wealth. During the empirical research, researchers – economists concluded about decisive impact on economic growth such factors as scientific and technological progress. The theoretical and practical results of Schumpeter became the basis for distribution at this time of scientific direction, in which knowledge and information are considered as a source of wealth or as a main condition for its creation. Of course, not less significance is practical recommendations entities on the principles of innovation and disclosure of Schumpeter static-dynamic dualism of nature of innovation. On the one hand, innovation as a static phenomenon - is a concrete result of the micro level, the final stage of research and production cycle. Production introducing of innovation leads to change one or more product-process parameters and further become the catalyst of derived innovations. On the other hand, as a dynamic phenomenon of innovation – continuous cyclical process that periodically runs the mechanism of «creative destruction» of the current economic reality [2, p. 17]. Such systematic approach to the consideration of innovation leads to unity of understanding of innovation activities in micro and macro level.

A significant contribution to the development of innovative problems made outstanding Russian scientist M. Kondratiev. His proposed theory of «long waves» as basic prerequisites for social and economic development provides innovation of varying degrees of depth and innovation that trigger different orders deviation from initial equilibrium state of the economic system [3, p. 717-718]. M. Kondratiev theory not only deepened the understanding of the nature of social and economic development, but also singled out scientific and technological progress as a factor that influences its dynamics. The scientist believed that of innovation developed by its own laws. This, in its turn opened up perspectives for the study of innovation as a complex, heterogeneous on the structure phenomena with certain hierarchy of temporal effects.

Scientific analysis of the sources of innovations research allowed to select treatment options for this concept. So, if we turn to the definitions that provide foreign scientists, in the broad sense innovations can be new

products, new processes or organizational methods that enhance the profitability of economic activity [4, p. 9]. Historically, innovation activity centered on R & D (research and experimental development) profitability of results which scientists consider key characteristic of innovation. According to the American scientist E. Mansfield, innovation – is the first time announced changes in technology [5, p. 556]. Thus technological changes mean changes in the production or release of new products. From our position, such point of view on the essence of innovations is not quite justified, because the new equipment and technology used in production may change and develop not only by revolutionary way but also by evolutionary way, i.e. through modernization and improvement [6].

Should draw attention to the definition of innovation which belongs to the American theoretician of management P. Drucker, as some modern scientists believe that Drucker is the «founder» of the term «innovation» because the proposed version of definition is reflected on the points that explain coming of innovation as a concept that is often used practically in all spheres of human activity. P. Drucker has written more broad approach to definition of the category «innovation». In particular, scientist believed that innovation – it is rather, economic and social concept than technical, because even in the case of technical and technological innovations are changing value and consumer quality that consumers are extracted from the resources [7, p. 30].

It is hard to deny out the definition because in this interpretation emphasized the importance of social and economic innovation. In a broad sense, innovation Russian scientists consider I.V. Razumov and O.O. Drobyshevskaya who understand innovation under implementation in the production of goods and services of the latest products and advanced technologies for their production [8, p. 44]. Moreover researchers stress that «innovation» and «technology» should be interpreted in a broad sense, referring to them all that in a competitive environment can help expand marketing of products in value terms. In our opinion, the definition contains certain inaccuracy as not only «introduction» of new technologies, as follows from the definition of the authors, may be an increase in sales, but increasing the amount of capital [6].

Comprehensively interprets the essence of «innovation» Russian scientist H.O. Yarin, namely: innovation – «is the result of intellectual work: first, a new idea, product, service, and secondly, the introduction of new in the production system, resulting in changing the very production system goes into a new state» [9, p. 14]. In this approach, innovation directly related to intellectual property, the essence of which is the results of intellectual work.

B. Santo defines innovation as «social, technical and economic process through the practical application of ideas and inventions to create better on the properties of products, technologies, and if it focuses on the economic benefits, income, its appearance on the market may bring extra income» [10, p. 28].

Similar in content is definition of scientists B. Twiss, B.F. Zablotskyi and A.A. Peresada. Thus, B. Twiss considered in innovation «process, in which the idea or invention acquires economic sense» [11, p. 36]. Ukrainian scientist B.F. Zablotskyi believes that innovation – is the actual process of creating new knowledge management systems and production, technologies and their implementation in economics or public administration or international commodity relations [12, p. 51]. This definition is advisable to supplement the interpretation that gives A.A. Peresada, namely: «Innovation – the process of proving scientific ideas or technical invention to the stage of practical use that brings income and the related with this process technical and economic and other changes in the social environment» [13, p. 160]. The named authors, unlike the others, consider innovation as a «process» and not as «change».

All of the interpretations if they evaluated comprehensively related primarily to production processes, technological development. For us, particular scientific interest is the description of the category «innovation» in the broad sense when it can be applied in the design and implementation of prospective directions for further socio-economic development. We consider interesting the definition that provides to innovation local researcher of this issue S.V. Onyshko: «In the deepest scientific and methodological context, innovation can be defined as a stochastic process of creating positive alternative possibilities of any open systems (economic, social, biological, anthropological, etc.)» [14, p. 90]. S.V. Onyshko believes that the opportunity given on the eve human impact on the dynamics of innovation processes, and their management is significantly limited. Integrative category «innovation» is defined by researcher M.I. Lapin, who saw it as a complex process of creation, distribution and use of new practical tool for complete or already known better meet needs; as the process of changes associated with a particular innovation is materialized social environment in which there is its life cycle [15, p. 7]. We do not consider it appropriate to link the essence of the innovations with activities of create complex, but in this approach we are talking about innovation not only concerning the production, but also social sphere and «better meet the needs» sphere [6].

In world practice, there is the definition of the term, made by the management of Oslo, which is reflected in the statistics of international standards in science, technology and innovation. According to these

standards, innovation – is «... the end result of innovation, which is reproduced in the form of new or improved product introduced on the market new or improved of technological process, which is used in practical activities of or for a new approach to social services» [16]. For comparison, the Ukrainian law has a definition of innovation, which is set by the Law of Ukraine «On innovation activity» of 4 July 2002 year № 40-IV: «Innovation – newly formed (applied) and (or) improved competitive technologies, products or services, and organizational and technical decisions of industrial, administrative, commercial or other nature which significantly improve the structure and quality of production and (or) social sphere».

In our opinion, important in the above two definitions is emphasis on the fact that the outcome of innovations applies not only to industrial and commercial sphere, but also social. However, analysis formulated in the law of Ukraine interpretation of the term «innovation» contains some contradictions, namely: about applied of innovations terms «newly created» and «applied» is different in substance and in law used interchangeably. Innovator can create something new, and it can be called a «new creation», but this new creation cannot be patented and cannot be applied thereafter. In terms of Ukrainian reality, such cases are not rare. So if new creation is not applied, it is just a novelty. From our perspective, the interpretation of the concept of innovations «newly created» and «applied» are going as a complement to each other, not as synonymous. The variety of approaches to the definition of the category «innovation» allows making a conclusion that in the economic literature has not reached unity on the contents and filling the concept of «innovation». Numerous researchers of this issue interpret the term «innovation» depending on the object and subject of the research. So, with of Schumpeter Mansfield believes that innovation – is a «change». Scientist H.O Yarin, describing innovation, uses the term «result» Instead B. Santo, B. Twiss, A.A. Peresada, S.V. Onyshko and B.F. Zablotskyi consider innovation as «the process». In our opinion, the essence of the concept of «innovation» can be seen in the narrow and broad sense. Thus, in the narrow sense, innovation is associated only with industrial production, new equipment, technology, products, is considered only from a technical point of view. In a broad sense, innovation acts as a new product or service and the manner and process a set of measures for their production, and innovation in organizational, financial, research, social and other spheres.

Genesis of the term «innovation» led to the emergence of derivative terms. For example, the application acquires a new term «innovating» [17] which is understood as a higher level of innovation activities within the globalization of the world economy and the formation of complex social

and economic systems. According to the terms of intellectualization of national economies need for adaptation the national economy to world globalization needs to determine its competitive advantages and economic growth factors [18].

One approach that allows receiving reasonable description of the national economy in the world coordinate system is the use of indicators of competitiveness. Among the set of indicators particular attention deserves the Global Competitiveness Index, which was developed by a group of scientists led by Professor Sala-i-Martin of Columbia University.

Built on the methodology of the World Economic Forum Global Competitiveness Index is a tool that allows you assess the relative strengths and weaknesses of the national economy and compare them with other countries. According to the Global Competitiveness Index the country assessed on the following parameters, which are grouped into three groups:

- 1) basic requirements (government and private institutions, infrastructure, macroeconomic stability, health and primary education;
- 2) efficiency enhancers (higher education and vocational training, goods market efficiency, labor market efficiency, financial market sophistication, equipped with the latest technologies, market size);
- 3) factors of innovation and development (business sophistication, innovation).

According to the report «The Global Competitiveness Report 2014-2015» Ukraine ranked 76th among 144 countries, rising to 8 positions in the ranking compared to last year [19]. Closest neighbors of Ukraine in this year's rating were Slovak Republic and Croatia. Results of the study show that Ukraine raised position for all groups of components of competitiveness ranking from last year. Despite this fact on many components of the index Ukraine ranks low steps, namely macroeconomic stability indicators took 105 place. Negative impact on the competitiveness of Ukraine such factors as the level of institutions (130 place), very low position for the component of goods market efficiency (112 place), the development of the financial market (107 place). Low place takes innovative component in rating – 92 step, indicating a substantial impediment to modernization of the national economy and socio-economic development. The main problems that hinder the development of innovations in Ukraine are actual direction of national policies to consolidate economic model, based on low-tech way of life, and poor development of market institutions. Results of research enable us to make the assumption that the economic system is influenced by external and internal fluctuations, which exceed its adaptive capacity and provoke volatility.

The reality of today confirmed that the efficiency and dynamism of innovative sphere is a crucial factor of ensure the competitiveness of the

economy. Analysis of the main determinants of the index component of «Innovation» will provide an opportunity to identify the main constraints of competitiveness effective progress of Ukraine (table 1.1). Results of research indicate about significant obstacles in the way to increased competitiveness of Ukraine's economy that happens on the background of the complex behavior of business environment, lack of effective and consistent state policy, available scientific, technological and innovation potential is not realized as the driving factor that affects low economic development.

Table 1.1. The results of Ukraine on the component of the global competitiveness index «Innovation» for 2013-2015 years [19-21]

Global Competitiveness Index and its components	2013-2014		2014-2015		Deviation	
	Rating (from 148)	point (1-7)	Rating (from 144)	point (1-7)	Rating	point
GCI	84	4,1	76	4,1	+8	0
Basic requirements (40,0%)	91	4,3	87	4,4	-12	-0,1
Amplifiers of efficiency (50,0%)	71	4,0	67	4,1	+4	+0,1
Factors of innovation and development (10,0%)	95	3,4	92	3,4	+3	0
Innovation:	93	3,0	81	3,2	+12	+0,2
The ability to innovate	100	3,2	82	3,6	+18	+0,4
The quality of research institutions	69	3,6	67	3,8	+2	+0,2
The costs of companies to research and experimental development	112	2,7	66	3,1	+46	+0,4
Cooperation between universities and business of scientific research and experimental development	77	3,4	74	3,5	+3	+0,2
Procurement of high-tech products	118	3,0	123	2,9	-5	-0,1
Availability of scientists and engineers	46	4,5	48	4,3	-2	-0,2
Patents and inventions (per million people)	52	2,9	52	3,2	0	-0,3

It should be noted the low level of susceptibility of Ukrainian business for innovations of technological character. According to the State Statistics Committee of Ukraine in 2013 only 16.8% of business entities engaged in innovative activity in the industry, which is significantly lower than similar indicators for Germany (69,7%), Ireland (56,7%),

Belgium (59,6%), Estonia (55,1%), Czech Republic (36,6%) [20]. Quite a small proportion of companies – 1,8% direct investments in the acquisition of new technologies. Today, Ukraine has typical inert type of innovation behavior (borrowing ready technologies and so on), which identifies the Ukrainian system as an innovative simulation-oriented in nature, which does not create radical innovations and new technologies. Only 13,6% of Ukrainian industrial enterprises showed themselves as innovative and active. Ukraine is the lowest among OECD countries as Japan and Germany, the proportion of such enterprises is 35% in Belgium, France, Austria – 41-43% of Denmark and in Finland 51-55%. Traditionally low in 2013 was the intensity of R & D (share of expenditure on the implementation of research and development in GDP) – 0,75%.

These arguments prove the necessity of developing highly competitive effective innovation strategy of the national economy aimed at developing modern innovative system that ensures the competitiveness of the national economy through effective use of scientific and technological capabilities towards promoting good economic growth.

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1.2. Peculiarities of scientific research in innovation activity

Shevliuga O.G.

In today's unstable and dynamic development of economic conditions the processes of formation of optimum information database become particularly relevant in order to make informed management decisions in innovation activity to achieve high performance and efficiency. By means of methods, methodology and tools one can receive new information about the nature of occurrence and processes, reveal the laws of development, formation and functioning of objects which are investigated. Today new requirements to scientific research, their quality, efficiency for enterprise as a whole, its economic and innovation activities, focus on the consumers are put forward. They are explained by the operation of enterprises in an aggressive competitive environment, the rapid development of information technology, significant diversification of production as well as they require improvement of management processes of the innovative enterprises. This management improvement is possible by the using of certain methods, concepts, tools and techniques.

Concepts and management methods allow effectively solving the problem of obtaining and maintaining competitive advantages, making scientifically grounded decisions, using them in production and innovations successfully. Scientific research, new and acquired knowledge, existing and new market needs become sources of innovation. Thus, the study of various aspects of the innovation activity must be purposefully

and systematized. Issues of methods and research methodology are discussed in the works of many native and foreign scholars, such as: O.V. Krushelnytska [1], G.S. Tsehmistrova [2], V.Ye. Yurynets [3], N. Walliman [4], but the specificity of research in innovation activity requires deepening.

As it is known, every scientific research can take place at two levels: empirical and theoretical levels. According to these common methods of knowledge are conventionally divided into three groups:

- methods of empirical research;
- methods of theoretical research;
- methods that can be applied at the empirical and theoretical levels [2].

Classification of research methods is shown in figure 1.1.

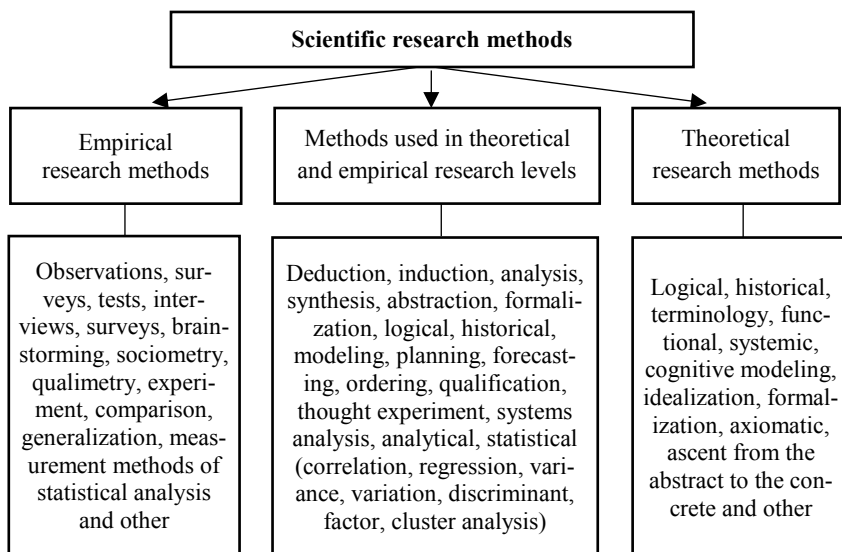


Figure 1.1. Classification of scientific research methods (developed on the basis [1,2,3])

Objectives of empirical research include:

- collecting of factual information;
- obtaining information about object properties, characteristics of its development;
- development of diagrams, charts describing the state structure of the object, its development, dynamics of behavior;
- classification of data, which represent empirical information.

Objectives of theoretical research level constitute:

- deep analysis of the facts (information);
- understanding of investigated objects;
- research of the essence of objects and the laws of their existence, which is the main content of the theory.

Each scientific research should contribute to a science and follow the scientific method.

Scientific method of research in general sense includes four general steps:

1. Observation and description of an occurrence, which includes recognizing and noting a fact or occurrence. At this stage, useful information which contains unanswered questions is sorted and chosen, research of which can be further continued.

2. Formulation of a hypothesis to explain the occurrence. The tentative assumption is making in order to draw out and test its logical or empirical consequences. The hypotheses should be tested with experiment or calculation. Thus, the leap from observation to hypothesis is performed.

3. Usage of the hypothesis for prediction the existence of other occurrence, or to predict the results of new observations quantitatively. Predictions can also be tested on relations for the hypothesis. A mathematical model can be used to test the prediction.

4. Experimental testing to apply a test as a means of analysis or diagnostics. Performance of experimental tests of the predictions by several independent experimenters and properly performed experiments. Tests will prove or disprove your hypothesis. Experimental tests can be performed by means of computing. All alternatives should be considered. Experiment may not disprove all (but some parts) of the hypothesis (fig. 1.2).

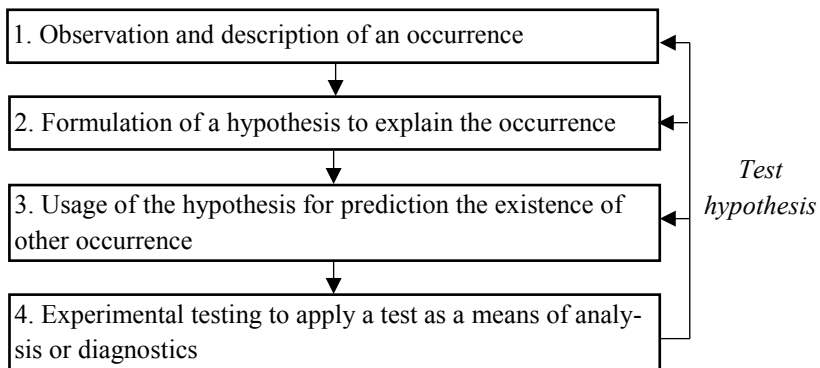


Figure 1.2. General steps of scientific research method (developed on the basis [5])

All these methods and approaches are used in various fields of knowledge either separately or in combination with other methods, including those in economic and innovation activities. During its activation is appropriate to use the combined methods of innovations evaluating (quantitative and qualitative evaluation are carried out).

Methodology, methods and new developments are used for implementation of globalization, scientific collaboration, research for practical use, interdisciplinary research. Thus, the National Science and Technology Council set forth the following nine principles for assessment of fundamental science programs:

- begin with a clearly defined statement of program goals;
- develop criteria intended to sustain and advance the excellence and responsiveness of the research system;
- establish performance indicators that are useful to managers and encourage risk-taking;
- avoid assessments that would be inordinately burdensome or costly or that would create incentives that are counterproductive;
- incorporate merit review and peer evaluation of program performance;
- use multiple sources and types of evidence, for example, a mix of quantitative and qualitative indicators and narrative text;
- experiment in order to develop an effective set of assessment tools;
- produce assessment reports that will inform future policy development and subsequent refinement of program plans;
- communicate results to the public and elected representatives [6].

Analytical methods and tools occupy a significant place in enterprises' innovation activity. Methodology of analytical providing of enterprises' management outlines a wide range of problems, and has an innovative focus. So, in [7] the authors propose to allocate the following directions in the economic analysis of the enterprise:

- technical and economic analysis;
- logistic analysis;
- financial analysis;
- management analysis;
- investment analysis;
- marketing analysis;
- analysis of financial activity;
- strategic analysis;
- analysis of foreign economic activity [7].

The subsystem of innovation management is not allocated in this case, although within the system of accounting and analytical support of innovative development of enterprise such components are allocated: innovation

activity, innovative potential and qualitative changes of enterprise condition. That means the importance of innovation processes for the enterprise. Innovation development is considered by scientists as a movement, a certain type of activity or process, therefore management of innovation activity and innovation development is carried out within the process approach.

Considering the innovation activity as a research object, the subject of research may be:

- innovations;
- innovation projects;
- the results of innovation activity;
- financing of innovation activity;
- innovative methods of management, etc.

In [8] the author underlines the necessity of application of relatively new, still unused at this enterprise decisions, methods, giving an opportunity to compete in an open, global market. The newest methods and technologies that have become widespread in all areas as well as can be used in the production of innovative products include:

1. Six Sigma Method, which by means of planning and control of labor allows efficient use of resources, minimizing costs, satisfying customer requirements. As a result, profitability and financial results increase, its market share grows along with the reduction the number of errors because of appropriate technique of processes implementation. This method is quite widely highlighted in the works [9,10], in which the authors emphasize the primary focus on the consumer. It is a statistically-based method to reduce variation in electronic manufacturing processes.

The Six Sigma Method is shown in figure 1.3.

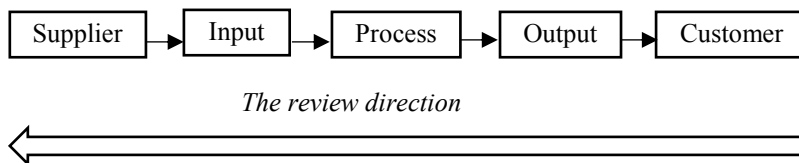


Figure 1.3. Six Sigma Method (developed on the basis [11])

Six Sigma Method offers:

- augments traditional quality tools;
- data driven decision-making;
- focuses on customer requirements;
- a focused/organized approach;
- redefines processes for long-term results;
- becomes ingrained in work and thought processes;

- relies on evidence-based solutions;
- rapid/effective change [11].

2. Management concept of production sphere Lean Production is the most famous of concepts, which consists of ensuring the implementation of each stage of the production process without wasteful losses. Its purpose is to minimize the time appointed for the development of new products, obtaining high production productivity and work time, their rational organization, high quality of products, efficient management as well as the satisfactory economic results of response to customer order, time of implementation of production processes with simultaneous provision of products supply with the highest quality with the lowest costs of human efforts and application of the most productive and economical production method. Lean-technologies foresee the optimization of business processes and adapt them under the customer value as well as cost reduction and continuous improvement.

3. Total Quality Management, which represents a system of comprehensive quality management with appropriate methods, during which all staff is involved in the process of work improvement of the enterprise. It provides continuous quality improvement in all areas and departments of the enterprise. The process of collecting and analyzing the information is carried out constantly, and on the basis of this analysis, management decisions are taken.

4. CRM systems (Customer Relationship Management), that is the management of customer relationship. The system represents a set of related and integrated into the corporate information environment of company applications based on a unified database, which unites its various areas of activity. The main objective of such systems is to increase the efficiency of business processes aimed at attracting and retaining the customers. The concept of CRM is focused on clients and mutual loyalty. With its help business efficiency and resilience increases.

5. EDI (Electronic Data Interchange) – electronic information exchange, which is associated with the transmission of digital data between organizations. The main objective is the standardization the exchange of digital information and providing program interaction of computer systems of various enterprises.

One of the widely-applied methods used in various fields of knowledge is mathematical modeling. Mathematical models create an image of the object using a particular mathematical system. Among mathematical models analytical and computer ones are distinguished which are interconnected.

It is typical for analytical modeling that the processes of functioning of the system elements are written in the form of certain mathematical relationships (algebraic, integral-differential, finite-difference, etc.) or

logical conditions. Computer modeling is characterized by that the mathematical model of the system (using the basic ratio of the analytical modeling) submitted in the form of certain algorithm and program suitable for its implementation at the computer that allows to conduct computational experiments with it [12].

The method of computer modeling allows to solve problems of analysis and synthesis of complex systems based on the use of the model. As a result, both quantitative and qualitative results appear that characterizes the system on both sides. Computer models are the conventional image of the object or objects' system, process, scope of activities.

Modern communication, computer and information technologies contribute to activation of innovation processes in enterprises. However, in the first place a question of finding the innovative and perspective ideas, their evaluation and effective implementation remains.

Models of innovation processes gradually evolved from linear to non-linear acquiring internal and external cooperation; branching of feedback; autonomy of the research process, evaluation of demand; focus on the end result. Nonlinear models take into account the lack of order and unpredictability of innovation processes, the presence of multiple sources of new ideas, the integration of different kinds of possibilities. There is a gradual shift of research of innovation processes from material to intellectual information presented in a general sense by information. That is the information technologies began to take a direct participation in the innovation activity of enterprises.

Thus, in the economic activity in general, and innovation activity in particular a large number of methods, approaches and tools are used with the purpose to solve the problem of optimizing business processes, improving the efficiency of its operations, establishing long-term relationships with customers, also the use of innovative process management in the enterprise. They are all aimed at obtaining certain economic results.

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1.3. Mathematical economic models of industrial facilities' venture projects assessment

Derykolenko O.M.

High risk level and uncertainty of venture activities cause close attention to venture projects assessment by investors and economic activity agents. At the same time the subject of asymmetric information, the development of which brought in 2001 Nobel prize to American scientists: George Akerlof, Michael Spence and Joseph Stiglitz, remains practically unlighted in Ukrainian scientific literature. It justifies the necessity of greater emphasis on venture projects assessment mathematic model.

Various approaches to evaluate activity result are available. Thus, Krasnokutska N.V. [1] considers scientific effect to be the criterion of innovations efficiency assessment. Butuk A.I. [2] notes that particular project funding decision is made based on expertize findings, when the following three groups of factors are evaluated:

- technical feasibility of innovation;
- project performance (expected demand, available substitute goods, sales channels, feasible earning power of the goods, aggregate demand in capital investments, possibility to acquire banking loan at the later stages);
- innovating businessman's business qualities (the most of attention is paid the them).

According to Butuk A.I. [2], the factors like internal capital amount, creditworthiness of borrower as of the date of entering into the contract

which are of major importance in conventional credit and financial transaction are not taken into consideration at hands-off financing.

As is well-known it is possible to find out processes correlation only in the result of their interaction at various indenture levels. The consequences can be characterized by certain categories and assess by certain factors.

Category (from Greek «Kategoria» – statement, attribute) is an abstract term, final result of generalization, possess minimum content [3, P. 481].

Let us suggest methodological approach to industrial facilities' venture projects assessment mathematic economic model development satisfying in equal measure both investor and businessman and was consistent with accepted assessment practice. Model is based on the following affirmations:

1. General assessment of cost efficiency (E_e) is done using the following formula:

$$E_e = \frac{E_n}{B_n} \quad 1.1$$

whereas: E_n – is an effect from venture project implementation, UAH;
 B_n – costs of project, UAH.

2. Project risk relative assessment (R) can be calculated using the following formula:

$$R = \frac{E_e}{K_r} \quad 1.2$$

whereas: R – relative risk factor;
 E – efficiency;
 K_r – risk ratio.

3. While computing risk ratio (K_r) we believe it necessary to consider extent of risk depending on market development stage, industrial facility lifecycle phase and risk inherent to named specific group of commercial output:

$$K_r = \prod K = K_j \cdot K_p \cdot K_t \quad 1.3$$

whereas: K_j is risk ratio characterizing general extent of risk inherent to j -th stage of market development;

K_p is risk ratio characterizing general extent of risk inherent to industrial facility lifecycle phase;

K_t is risk ratio characterizing general extent of risk inherent to specific group of commercial output.

In such a way, overall risk (K_z) of venture project makes up:

$$K_z = \sum_{i=1}^n K_{r_i} \quad 1.4$$

In view of the foregoing let us suggest the following mathematic economic model to assess venture activity:

$$R = \frac{E_n/B_n}{K_z} = \frac{\sum_{i=1}^n (D_i \cdot (1+q)^{-i} - B_i \cdot (1+q)^{-i})}{\sum_{i=1}^n B_i \cdot (1+q)^{-i}} \Bigg/ \sum_{i=1}^n K_j \cdot K_p \cdot K_t \rightarrow opt \quad 1.5$$

whereas: E_n – is an effect from venture project implementation, UAH;
 B_n – costs of venture project implementation, UAH;
 i – sequential number of period;
 B_i – costs of project in i -th period, UAH;
 D_i – venture project sales revenue in i -th period, UAH;
 n – venture project implementation periods number, years;
 q – discounting rate.

Current model is based on the statements that assessment of venture project efficiency to risks allows to make venture projects' comparative analysis in order to choose the most attractive of them.

$$f_1 = E_n/B_n \rightarrow max \quad \left\{ \begin{array}{l} E_{max} > E_n > 0 \\ E_n > B_n > 0 \\ K_j \neq 0 \\ K_p \neq 0 \\ K_t \neq 0 \\ \vec{K} \in R \\ K_z < n \end{array} \right. \quad 1.6$$

$$f_2 = K_z = \sum_{i=1}^n K_j \cdot K_p \cdot K_t \rightarrow min$$

At first sight, well-known factors are proposed to assess industrial facility venture activities and the pool of them is limited. However specific feature here is that it is necessary to account everything making impact on each of these factors, moreover it need to be done integrated not separately (as inter alia it will allow to avoid double accounting).

Mathematic economic model proposes for simultaneous combination of two conflicting objective functions (first one is subject to maximization, and the other one – minimization), thus model factors shall be subject to the following (form. 1.6) limitations.

Use of this model will make it possible to simultaneous consideration of economic, as well as technical, market and other groups of factors (due to extended list of risk ratios) and satisfy both investor’s and industrial facility’s requirements.

This model is of general nature however taking into account specific features of economic management mechanisms of small, medium size and big industrial facilities along with distinctive features of their participation in venture activities, we propose to introduce restrictions in calculations which first and foremost concerns investment risks.

In such a way with regards to small industrial facilities we suggest the following target function restrictions to venture activity assessment model considering the risks complying with minimum risk area boundaries:

$$\left\{ \begin{array}{l} E_{max} > E_n > 0 \\ E_n > B_n > 0 \\ 0 < K_j \leq 0,25 \\ 0 < K_p \leq 0,25 \\ 0 < K_t \leq 0,25 \\ \vec{K} \in R \\ 0 < K_z < 0,25 n \end{array} \right. \quad 1.7$$

To our opinion for midsize industrial facilities these restrictions can be less strict and consider boundaries of high risk area:

$$\left\{ \begin{array}{l} E_{max} > E_n > 0 \\ E_n \geq B_n > 0 \\ 0 < K_j \leq 0,5 \\ 0 < K_p \leq 0,5 \\ 0 < K_t \leq 0,5 \\ \vec{K} \in R \\ 0 < K_z < 0,5 n \end{array} \right. \quad 1.8$$

As for the big industrial facilities these restrictions can be even less strict and consider the boundaries of critical risk area:

$$\left\{ \begin{array}{l} E_{max} > E_n > 0 \\ E_n \geq B_n > 0 \\ 0 < K_j \leq 0,75 \\ 0 < K_p \leq 0,75 \\ 0 < K_t \leq 0,75 \\ \vec{K} \in R \\ 0 < K_z < 0,75 n \end{array} \right. \quad 1.9$$

Industrial facility soundness is an important issue for each business entity, thus target functions restriction must consider capital losses possibility and permissible limits of such losses [4].

Thus, with regards to small manufacturing businesses we propose the following target function restrictions for venture activity assessment model under minimal risk conditions and taking into consideration capital losses possibility:

$$\left\{ \begin{array}{l} E_{max} > E_n > 0 \\ E_n \geq B_n > 0 \\ B_n \leq \Pi_{\text{чист}} \\ 0 < K_j \leq 0,25 \\ 0 < K_p \leq 0,25 \\ 0 < K_t \leq 0,25 \\ \vec{K} \in R \\ 0 < K_z < 0,25 n \end{array} \right. \quad 1.10$$

whereas: $\Pi_{\text{чист}}$ – net profit.

As for midsize industrial facilities, we propose to set restrictions within the following limits:

$$\left\{ \begin{array}{l} E_{max} > E_n > 0 \\ E_n \geq B_n > 0 \\ B_n \leq D_{\text{вал}} \\ 0 < K_j \leq 0,25 \\ 0 < K_p \leq 0,25 \\ 0 < K_t \leq 0,25 \\ \vec{K} \in R \\ 0 < K_z < 0,25 n \end{array} \right. \quad 1.11$$

whereas: $D_{\text{вал}}$ – gross proceeds.

For the large scale industrial facilities such restrictions are as follows:

$$\left\{ \begin{array}{l} E_{max} > E_n > 0 \\ E_n \geq B_n > 0 \\ B_n \leq K_{\text{влаг}} \\ 0 < K_j \leq 0,25 \\ 0 < K_p \leq 0,25 \\ 0 < K_t \leq 0,25 \\ \vec{K} \in R \\ 0 < K_z < 0,25 n \end{array} \right. \quad 1.12$$

whereas: $K_{\text{влаг}}$ – own funds of industrial facility.

In such a way, restrictions establish permissible limits of risks and expenses for industrial facility of various size (which will provide their strength at the market).

These model can also incorporate other restrictions, for example, of time (in such a case i -number of periods will have specified maximum value).

Summing up the foregoing, it should be noted that:

- methodological approach to venture projects assessment mathematic economic model development has been proposed and substantiated satisfying both investor and business owner requirements and allowing to optimize venture projects selection taking into consideration economical, technical and other groups of factors (on account of ratios list expansion);

- suggested mathematic economic model is of universal nature due to possibility to generation of its factors considering particular qualities of small, midsize and large scale enterprises operation as well as distinguishing features of their participation in venture activity;

- proposed mathematic economic model is of practical importance as it complies with project assessment practice commonly used by manufacturing businesses (economic component) and allows to take into account all types of risks inherent to venture activity in general.

Obtained results can be taken as a basis of management decisions making and can be used in the practical activities of industrial facilities.

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1.4. Development and transfer of nanotechnology in Ukraine and the world

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Nanotechnology as a multidisciplinary science. Nanotechnology sector has a whole lot of different definitions, nevertheless they all share following: in nanotechnologies phenomena occurring in scale of one millionth of a millimeter are studied. And nothing else matters: are studied phenomenon caused by physical laws, chemical properties or biological principles [2; 3].

Therefore nanotechnology has an interdisciplinary nature, where features of different scientific fields are connected. The main focus in nanotechnology is on the materials and systems which structures and components reveal new and vary advanced physical, chemical or biological

properties. These properties allow usage of new phenomena and processes according to their nanoscale size [1]. Interesting indeed is an aspect that nanotechnology sector is not limited to material and devices field, but applies even to biological sciences. Thus, reproduction of living organism that could perform engineering tasks is considered plausible at the moment. Besides in informational technology, biotechnology, semiconductors and other technologies a number of technological steps are taken. They all have a significant impact on nanotechnologies, which in their turn are caused by influence of developments in this area.

Nanotechnology applications in different areas. Creation of new building blocks became a base for new nanomaterials, which due to their unique properties (strength, lightness, etc.) are not only good alternative for old materials but also provide ability to create new devices and materials for further technological development. This became one of the main factors for nanotechnology achievements acquiring wide use in different industries. One of the examples for this building blocks are nanotubes – graphite cylinders with peculiar electrical properties, which have become a basis for a lot of materials: nanofibers, nanowires, nanomotors, nanosprings, nanocrystals, nanoporous materials, molecular electronic materials, molecular photonic materials, organic nanostructures, quantum dots, organic and inorganic hybrid nanostructures etc. The rapid nanotechnology development is also linked with discovery and further investigation of graphene, as the applications of this material are incredible wide: electronics, optoelectronics, space exploration, water purification, automotive industry, medicine, industry, military-industrial etc.

Current nanotechnology products are already being actively developed in the field of biological sciences: bioengineering for insect protection for plants and their growth process improvement; electronics: microelectromechanical systems, biosensors, so called chip laboratories; computing technologies: processors and storage elements using different organic semiconductors, porphyrines; aerospace field and energetics: nanomotors, new batteries and electromotors based on nanomaterials etc. [4].

Nanotechnology in Ukraine and the world. During last decades governments and companies of different countries have begun to pay more attention to nanotechnology industry. New dedicated for specific needs of various industry areas nanomaterials, which will be able to provide the market with a number of key industry fields with new products with excellent operational features, are being created quite rapidly. It should be noted that this products are no longer just area of science, but are being actively brought to market. However, while nanomaterials can create many new business opportunities and positively affect their market position, they can also represent a huge business risks.

Although the leaders in nanotechnology are still USA, Japan and Europe [5], a number of other countries are also trying to initiate a major effort in this field. Thus, Nanoscience and Technology Initiative was created by Department of Science in 2001 in India. Objects for investigations in this field were created on the basis of several laboratories. But one of the main challenges in this new area is a lack of necessary manpower and qualified staff. And because the number of available training centers in India is clearly insufficient, the need for assistance from government is very urgent. A need for increased investment in the field of nanotechnology remains topical.

China is a good example of rapid growth in nanotechnology field. Investments into people and infrastructure there are higher than even in most developed countries. China also established a number of bilateral programs in nanotechnology field mainly with USA. Like India and China, many developing countries also are trying to move forward in nanotechnology field, but this is getting harder because of competitiveness and a need in a high level of technical perfection [6].

Over the last years universities and institutes of NAS of Ukraine implement basic scientific programs for nanotechnology research in Ukraine. Due to initiatives of National Academy of Sciences of Ukraine in 2009 national research program «Nanotechnology and Nanomaterials» for 2010-2014 was launched. National Academy of Sciences of Ukraine was actively involved in the implementation process of this program, and a number of successful and unique developments of nanotechnology were created by scientific institutes, especially in the nanocomposites field. However, comparing to highly developed countries nanotechnology research funding and its further implementation in industry in Ukraine are on a very low level. Therefore National Academy of Sciences of Ukraine has initiated implementation of target complex program of fundamental research of NAS of Ukraine «Fundamental problems of new nanomaterials and nanotechnology development» for 2015-2019. Analysis of scientific institutes of NAS of Ukraine involved in this program shows that most high potential is focused in nanophysics, nanobiotechnology and nanochemistry fields.

As a whole, apart from general hype regarding nanotechnology, which is partly due to the increased interest in this area, in most literature there is a general consensus that nanotechnology will continue to be large and dominant industry in the near future.

According to data given at nanowerk.com portal in 2016, a number of institutions specializing in nanotechnology-related jobs worldwide is about 4000, including more than 2000 research laboratories and scientific associations and almost 2000 commercial institutions. Overall

estimation of nanotechnology market as of 2013 was more than trillion dollars, main part of which was nanomaterials market – 340 billion dollars, and nanoelectronics market – 300 billion dollars [10]. It is also expected that by 2018 total amount of nanotechnology market can increase up to 4 trillion dollars. The total number of nanotechnology-related jobs was around 10 millions in 2013 and continues to grow actively [10].

Features of nanotechnology transfer. It is important to understand that the further development of nanotechnology is dependent on how existing companies and industry representatives will identify promising commercial applications of nanotechnology products. This, in turn, depends on how successful will be the transfer of scientific achievements from the academic sphere to the commercial [7].

Process of nanotechnology transfer looks as follows:

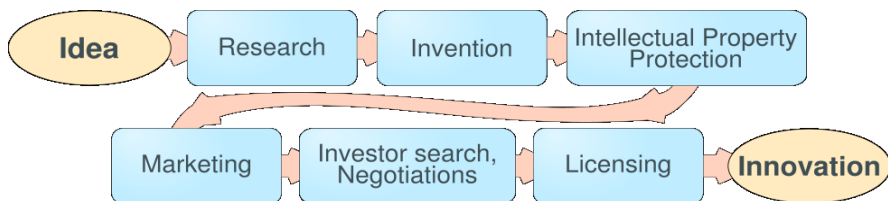


Figure 1.4. Nanotechnology transfer

The process of technology transfer (which is the same for nanotechnology and other technologies), as shown on fig. 1.4, is a joint process between the inventor and his employer, which consists of identification, protection and commercialization of intellectual property.

Technology disclosure is a document that formally provides research institute / university with details about new product developed by an employee. At this stage the evaluation of the commercial potential of innovation and patentability is conducted. As part of the evaluation, a decision is made on whether or not commercialization efforts for a particular invention or technology should be pursued. Department for technology transfer and intellectual property protection of institute / university (TT Department) assists in the process of patent protection for the invention. During this time, TT Department is provided with technical details, data and substantiation to assist in determining the probability of securing a patent. With the assistance of the researcher, TT Department identifies the companies that have the resources and business network needed to bring the technology to market. Active involvement of the researcher in this stage can greatly enhance this process. The phase of negotiations begins when a company shows interest in the invention or

technology. Negotiations should be usually handled by TT Department, keeping inventor informed and discussing with him the commercialization strategy. This department also makes inventor's research inventions available to the public and business through a license. Certain rights in the technology are granted to the licensee, under specific conditions, as defined by policy of institute / university. TT departments have been creating in Ukrainian research institutes and universities since 2008, according to the order № 15 of the NAS of Ukraine of January 16, 2008 «About the departments for technology transfer, innovation and intellectual property».

In the model of transfer of nanotechnology small and medium enterprises and high-tech start-ups do not act as a central economic actors. In the case of nanotechnology, they do not play a unifying role between large companies and public research organizations, and act as providers of very specialized services / technology. In nanotechnology knowledge generating and sharing mainly takes place between associations of public research institutions and large companies. The process of joint production and transfer of knowledge in nanotechnology is largely based on direct links and associations between large companies and public research institutes.

The importance of technology and nanotechnology transfer in particular has been many years discussed in political circles. Thus, it is believed that the recession in the 1970s and 1980s in the US was the result of the slow pace of commercialization of academic research. In this regard the US government had introduced various reforms aimed at changing the situation, the most publicized of which became Bayh-Dole Act of 1980, which allowed universities to own the rights to the intellectual property of their research, funded by the government; the program to promote research conducted with the cooperation of universities and commercial companies. The European Union also initiated new programs, such as the Seventh Framework Programme (FP6 and FP7), which has developed into the Horizon 2020, COSME programme supporting stable development of innovative enterprises. These programs are aimed to promote cooperation between universities and commercial companies. Today, most industrialized countries have developed various intermediaries to support technology transfer: more and more universities are beginning to build their infrastructure for the technology transfer. Hence, we can say that universities along with research and teaching are acquiring a new role focused on the commercialization of science [8].

Although in the area of transfer of nanotechnology active efforts are being made, even now there are many problems that still prevent the

successful development of this sector. The most typical factors that have a negative impact on this area are: problems in identifying business opportunities, poor development of production technology, the issues of protection of intellectual property rights, passivity of researchers, etc. Therefore, to improve the efficiency of the transfer of nanotechnology it is important to understand which models are most often applied for technology transfer and how to evaluate the results. In general, public programs and bilateral programs for research and development, consultings in the subject of research and development, conferences, seminars, joint publications, joint laboratories, temporary employment are a basic model, that are mostly used in technology transfer nowadays. Results of transfer technology are evaluated by each side on its own way. Thus, for the academic sphere most significant is, first of all, identification of new topical issues in research, obtaining funding for research, patenting and licensing of research results. For commercial companies results are largely characterized by finding new ideas for products, the selection of skilled staff, improvement of existing and creation of new products and processes and profit earning [9].

Thus, nanotechnology can be safely regarded as one of the most promising areas of technological development for decades to come. One of the main benefits of nanotechnology – its multidisciplinary that provides wide space for application of nanotechnology products. As a result, almost all countries around the world continue to invest more and more in this area, partnerships between research institutions and commercial companies are being concluded.

The development of this industry also owes much to the field of nanotechnology transfer, which activities aim at solving the difficulties arising during the commercialization of scientific development and accelerating the pace of the nanotechnology transfer. But at this moment in this area there are still many outstanding issues, between the academic and commercial fields there are many contradictions in the vision of the process of transfer of nanotechnology and its main priorities, and its pace is still quite slow.

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1.5. The innovative processes realization in agro-industrial sector of economy in Ukraine

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Nowadays perspectives of the economic development in Ukraine can be connected with high-technological and competitive enterprises, economic activity of which would produce a synergetic effect with national economic system. Such effect is possible only granting innovative development of the enterprises, which form the basis of the national economy competitiveness. Besides, it is widely known that the base of economic growth in any country is an active innovative and investment activity, based on scientific and technical progress achievements use, which in its turn provides favorable conditions for further development.

Since an agricultural sector is one of the main branches in economy, the central factors, which influence sustainable development at the agricultural enterprises, are innovations. The problems concerning innovative policy objectivation at the agricultural enterprises are not studied enough. It means that innovations are required everywhere, including in activity organization.

The problems of innovative activity development in agricultural sector are shown in works of such scientists as P.A. Layko, M.F. Babiyyenko, P.M. Muzyka, S.V. Stepova, A.V. Shumsky, N.V. Altukhova and others. Studies of scientists V.M. Batutin, Yu.I. Klymenko, O.E. Gudz, B.A. Dadashev, S.H. Cheremisin, V.V. Oblivantsov, P.T. Sabluk, M.Ya. Demyanenko, I.V. Chekhov and others prove the variety of approaches to investigate credit relations essence and peculiarities in agricultural sector of economy [1; 3; 4; 9; 11]. Most authors point the process to form credit relations in Ukraine, which correspond the market character of economy.

The agricultural sector in Ukraine, basic component of which is agriculture, is systemically important in national economy, just it forms bases to keep state sovereignty – productive and economic, ecological and energetic security in the proper places, develops technologically connected branches in the national economy and forms social and economic grounds for rural territories development.

In addition to the stable provision of population in the country with qualitative, secure, available goods, agricultural sector is able to solve the global problem of hunger.

Further inclusion to the global economic space, increase of globalizations processes, trade liberalization requires adaptation to conditions, which are constantly changing – further improvement of the agricultural sector.

Ukrainian agricultural sector with production potential, which greatly exceeds the demands of domestic market, can put forward national economy development and its efficient integration into the global economic environment, and thus, incomes growth of the involved people (third part of the whole population) in agricultural economy and can provide multiplicative effect of other sectors development in the national economy [8].

The main grounds to perform entrepreneurial activity in the agricultural sphere and to cooperate with state authorities, local self-government and private sector, are defined by many basic legislative and legal and regulatory enactments, among which there are Economic Code of Ukraine, Tax Code of Ukraine, State and private partnership Act of Ukraine, Strategy of the agricultural sector development till 2020, Conception of the state and private partnership development in Ukraine for 2013-2018 etc.

The approved Strategy of the economic agricultural sector development till 2020 [8] is oriented to form an effective, socially directed agricultural economic sector, which must satisfy demands of the domestic market and provide leading positions in the world, based on its multi-structurality and business entities support priority, owners of which live in the rural place, unite the right for land with work on it, and also own economic interests with social responsibility in relation to community. The aim of Strategy is to create organizational and economic conditions with purpose effectively to develop agricultural sector through people's economic, social and ecological interests unity provision to achieve stable, qualitative, secure, available native agricultural goods and as for industry – to achieve agricultural raw material.

The important factors of agricultural branch development consist in signing of Agreement on association between Ukraine and EU countries,

and also creation of free trade zone with European Union within this agreement, because Ukraine will have perspectives for EU countries' markets development by native companies, growth of quality level, security, ecological features of the Ukrainian AIC production. That's why it is significant for Ukraine to find mechanisms of state agricultural policy to increase efficiency to use current potential of the agricultural sector in economy. So, special attention has to be paid to creation of preconditions for its innovative and institutional provision. First of all it foresees cooperation mechanisms formation between state and business, agricultural recommendations system development as an informational and consultative help for agricultural commodity producers and rural population, development of the small commodity agricultural production to provide own entities integration into the market mechanisms of agricultural sector functioning, self-regulated organizations functioning efficiency increase in the agrofood sphere with purpose to prevent from over regulations, managerial decisions making process decentralization [10].

Unattractive investment climate, instability of normative and legal base in the entrepreneurial activity and low profitability in agricultural production running lead to agricultural producers' low competitiveness. Access to credit resources in agricultural sector is limited owing to use of the borrowers' credit record and property to bail.

Ye.M. Kyrylyuk focuses on information asymmetry at the native agricultural market, and on the competitive environment from the supply and oligopolistic (or monopolistic) – from the demand [6]. The control of intermediate structures for wholesale and export commodity flows, and incomes from agricultural production realization is accompanied with prices growth, leads to agricultural sector monopolization and increases transaction expenses. Due to the fact that costs are limited, agricultural commodity producers set objectives to find and to involve extra financial resources to provide continuousness of the renewable process.

According to data of expert evaluation, conducted by State Statistics Service of Ukraine, main factors, which prevent from innovative activity development at the native enterprises, are: lack of own funds (80,1% of the researched enterprises), large expenses for innovations (55,5%), lack of state's financial support (53,7%), high economic risk (41%), imperfection of the legislative base (40,4%), long term of innovations payoff (38,7%), absence of customers' funds (33,3%), lack of qualified personnel (20%), absence of opportunities for cooperation with other enterprises and scientific organizations (19,7%), lack of information about sales markets (17,4%), lack of information about new technologies (16,1%) [2].

The innovative infrastructure plays an important role to provide effective functioning of the innovative entrepreneurship in agricultural sector of economy. Particularly, there are such main elements, as technoparks, business-incubators, technopolis, agricultural clusters creation, which assist innovations to enter the market. Let's observe perspective forms of interconnection between state and agricultural enterprises that allow to form investment policy in agricultural sphere.

One of the perspective forms for cooperation between state and business in agrarian sphere is collaboration on development of the agrarian clusters, due to which on the basis of production specialization and concentration, innovative investigations involvement at scientific and research institutions, formation of the closed cycle, entrepreneurs are provided with production competitiveness and profitability increase, and at the state level owing to rural territories improvement with modern agricultural service, agricultural industrial, dwelling and cultural zones (in the form of agrarian towns) the stable social and economic regional development is achieved.

Nowadays development of the agrarian clusters in Ukraine is complicated with weak integrated relations between producers of agricultural goods, processing companies and scientific institutions, and most agrarians' unwillingness to become entrepreneurs-innovators, who are able to initiate formation of agrarian clusters.

So, there are a few examples of agrarian clusters practical creation and functioning, which are agricultural producers' initiative and are based on experience, borrowed by them from the world practice of cluster development [10].

Nowadays perspective directions for clusters development in agrarian sphere are:

- *Innovative activity*. There is a regional agrarian industrial innovative cluster «Agrarian innovations» in Rivne, founded by 4 state bodies (Rivne regional and state administration, Central Department of the Agrarian and Industrial Development in Rivne state and regional administration, Central Department of Economy and Investment Policy in Rivne state and regional administration, Ukrainian State Agency on Innovations and Investments), by 3 scientific organizations and higher educational institutions, 5 manufacturing companies in Rivne region and 3 innovative structures and service establishments. The aim of the given cluster is to unite efforts, actions coordination and joint events realization to investigate and to introduce innovations into agrarian and industrial complex in Rivne region.

- *Rural green tourism*. There is tourist and recreational cluster «Hohol's places in Poltava region» in Poltava region, the way to which is

through Myrgorodsky, Dykansky, Shyshatsky regions, Velyki Sorochyntsi village and Hoholeve village with places of interest (cultural institutions, cultural buildings, eminent places etc.), concerning writer's life and work. Ecological and agrarian tourism cluster «Oberig» functions in small town Hrytsiv Shepetivsky region Khmelnytsky district. It unites 10 agricultural dwellings, over 60 people (owners of agricultural dwellings, museum interpreters, shops owners, culture workers and others), who have tourists, who want to have rest in the village;

- *Organic production* – participants of the project work over procedures concerning organic goods production inspection and control. It allows them to receive both native and international conformity certificates and to supply marked production to the domestic and international markets. There is a regional cluster of ecological production producers in Poltava region. Under local authorities' support it unites enterprises, the aim of which is production, certification and promotion of ecologically clean goods without transgenic and chemical substances to the market. Today some companies take a procedure of certification with purpose to receive an opportunity to realize the produced goods abroad;

- *Highly specialized* production of definite goods type. Successful examples of such direction are a fruit cluster «Podilsky apple» on apples production and realization in Khmelnytsky region, «Natural milk», which functions in Rivne region and unites agricultural enterprises, which work in dairy farming sector.

The following top-priority direction of state and agribusiness cooperation comprises technoparks, as organizational and economic form of the state and private support for innovative business. Advantages of agricultural technoparks consist in the fact that they allow to approve and to adapt scientific investigations due to zonal conditions and requirements of the agricultural production, because they involve regional scientific and research institutes, local agricultural universities, consultative, scientific and productive structures, and editorial offices of the proper trade journals, farm academic centers etc. Unfortunately technoparks are not widespread phenomena in agrarian sphere. According to information, given by State agency on science, innovations and informatization, the only one technological park «Agrotechnopark», created at National University of Food Technologies, is registered in agrarian sector in Ukraine. Its work is controlled by the Act of Ukraine on «Special regime of technological parks innovative activity». Small spreading of technoparks in agricultural sphere is connected with most agricultural producers' low financial abilities – potential purchasers of production from technoparks (due to results in 2013 only 30,5 % of agrarian companies got net profit (gains) from agricultural production and

service realization at a cost of 10 mln. hrn. and more), and also absence of special Ukrainian Act, which would regulate venture activity conduct [10].

Besides, banking credits, internal self-financing of the agricultural enterprises, personal savings of farming enterprises are observed as main financing sources for enterprise. According to the data of South-Eastern Europe Fund, internal self-financing of agricultural enterprises through undivided profit investments for business development is more than half of all funds, which come to agrarian sector in Ukraine. The financing factor in form of banking credits is a quarter of all available resources. Farming owners', resource base suppliers', recycling industry enterprises and traders' personal savings comprise small part in financing of agribusiness. Seasonal credits for agricultural crops cultivation, investment credits for agricultural assets purchasing and credits for business development are the most wide spread crediting forms.

That's why, one of the most important tasks of the banking system in Ukraine is an effective crediting of the agricultural sector. Agricultural sector crediting in Ukraine is one of the main problems, which impacts the agriculture development. The small consideration of agricultural production specific nature and peculiarities of the agrarian sector in economy during crediting process negatively influence the financial provision agrarian sector. So, the problem of insufficient financial and credit recourses incomes into agricultural sector in economy continues to be the most significant factor to keep agricultural production development in Ukraine.

The agrarian sector crediting in economy is one of the most significant sources to activate investment activity of agricultural enterprises, thus, to our opinions, together with general functions it is necessary to observe innovative and investment function, because involving of innovations and investments into agriculture will lead to economic factors growth concerning agrarian companies activity.

The investments amounts impact the material and technical state of the enterprise, provision with resources, qualitative complex of the labor resources, production amount, and a level of profitability at any enterprise. The profitable agricultural enterprises can be not only active participants of the investment process in the country, but also the most attractive subjects of credit relations [7].

Specialists of International Financing Corporation (IFC) within research «Investment climate in Ukraine: how business can see it» in 2011 inquired directors of 260 agricultural companies in Ukraine (agrarian production producers, raw material suppliers, traders and processors) and 79 entrepreneurs – private persons, as a result of which it turned

up, that the biggest barriers for effective marketing and logistics in agriculture are bad infrastructure of the agricultural market (51% of inquired people suppose so) and insufficient number of modern store buildings (45% of the inquired) [5].

The resource potential of the agrarian sector allows not only to fasten the results, received during the recent years, but also to grow the production of qualitative and secure agricultural goods, to increase export potential in the branch. At the same time, imperfection of the native AIC development institutional provision doesn't allow maximum to reveal its existing competitive advantages. Systematic and complex state agrarian policy in Ukraine has to be oriented to increase effective use of potential, involved in agricultural manufacturing. It will allow agrarian sector to be «the increasing point» and a base for further modernized transformations in the country economy.

Scientific investigations in the sphere of scientific and technical development allow to set that problems on organization and management of innovative activity and innovative development in the branch have not been solved yet. The innovative activity of the agricultural enterprises growth will increase the production competitiveness and economic efficiency. In order to activate innovative processes in the agricultural production, it is important to overcome obstacles, particularly financial abilities limitation, weak support on the part of state and low demand for innovative investigations.

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Section 2

Methodological aspects of innovative growth management

2.1. Innovations in the development of chaos theory

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Recently there has been a growing scientific interest in new areas of economic theory, such as evolutionary and synergetic economy that explore the problems of interaction between linearity and non-linearity, stability and instability. The synergetic economics examines issues related to the evolution and changes in unstable economies.

Any economic system and its components are subject to fluctuations (all kinds of fluctuations and changes), which can be both internal and external to the system. As the number of fluctuations grows, the system gradually becomes unstable and sensitive to even small impacts. Strengthening of economic system leads to oscillation that occurs when an arbitrarily small change in the parameters of the system leads to an abrupt transition of the system to a new qualitative state, that is, there is a bifurcation point and there is development of the system. The bifurcation point is a change of the structure and mechanisms of functioning of the system, while a combination of old and new quality components creates chaos.

For self-organizing systems, it is typical nonlinearity of dynamics, which indicates the presence of a point system instability (bifurcation point) several fundamentally different but equally possible options for changing the system. However, the exact vector changes any system in principle can not be predicted, one can only assume one of the likely development paths. The problem of using synergistic systems is that there is an equal probability of all of the options, the unpredictability of its behavior after the bifurcation. But no matter how difficult the system is, the number of possible evolutionary paths limited change always meets one of the options. Innovations can contribute to selecting the most promising options of the system.

Issues of self-organization of complex systems are involved by experts in the field of cybernetics, W. Ashby, J. Neumann ta N. Wiener [1-2]. The concept of «chaos» received updates in the works of A. Lyapunov, H. Poincare, A. Kolmogorov, I. Prigogine, E. Peters ta R. Kronover [3-6]. As for

the problems of innovation economy, these issues are adequately addressed in the work of J. Schumpeter, G. Mensch and C. Freeman [7-8]. Among local scientists one should mention V. Gejcz, M. Voynarenko, A. Cherep and others [9-10]. In the works of these authors the idea of the instability of the economy is considered, as well as its development cycle, periodic crises, financial collapse, and so on. But with the development of new mathematical theories they acquire a different meaning: there are the necessary conditions of chaos and uncertainty, as agents of change should be innovative in the economy.

Any process of changing systems pronounces succession of opposing states – order and chaos, which are connected to the phases of the transition to chaos (destruction of structure) and exit from the chaos of (self-organization). Chaos is a generator of randomness and diversity, from which a new unity and a brand new structure form.

In the real socio-economic systems, chaos performs many different functions in the process of self-organizing systems:

- organizes a one way system in open nonlinear internal and external environment;
- synchronizes the pace of evolution of subsystems within the system;
- adapts the internal environment of the economic system to external factors;
- carries dialectical transition the system from order to chaos and back, from symmetry to asymmetry, and vice versa;
- transition of the system into chaos is a way to exit from an evolutionary dead end;
- balancing on the edge of chaos is one of the ways to maintain a complex system in a state of equilibrium;
- occurs at the stage of decay of the system activity and increase dissipative scattering, chaotic processes, resulting in new linkages, new structures and relationships between elements of the system, initiate the process of morphogenesis.

Thus, the chaos is a factor of renovation of socio-economic systems complex. Continuous process of learning the chaos is associated with the analysis and the disclosure of a wide variety of chaos promoting knowledge functions of the nature and content of both evolution and self-organization, as well as factors that hinder them.

From the point of view of the theory of evolution chaos is a natural step, which allows the system to correct their own shortcomings and mistakes in the process of de-synchronization of its elements. When the communication between the system elements weakens, changing their function and position in the hierarchy of the system, it is possible to carry out self-organization based on known information about the existing

internal and external problems. If chaos was absent in system, any design changes would be met by a high (and, perhaps, insurmountable) resistance from her own elements for which the current state of the system is a profitable and successful. In this context, the chaos in the economy periods may be regarded as an effective point of bifurcation, which in times of crisis time there is a transition economy to an innovative way of development.

The desire to speed up the development of the economy is the typical behavior of the vast majority of developed and developing countries. Extensive development at the expense of natural resources and the formation of the basic industries in most developed countries is no longer possible, it is necessary to find and cultivate new (innovative) industry and development trends. In this regard, innovative development is assessed as the only possible way of development, considering that the possibility of extensive development have been exhausted, and the downside risk to the economy is not acceptable for the country's security.

Thus, according to a joint report by Cornell University and INSEAD business school, ranking Global Innovation Index in 2016 led Switzerland, Sweden, United Kingdom, United States, Finland and Singapore. Ukraine in this ranking took 56th place out of 128, behind the leaders at the half, but improved its position in comparison with 2013 year (71 seats). Published data shows that in 2014 R & D expenditures in the world grew by only 4% [11]. This was the result of a slowdown in economic growth in emerging markets and reduce of innovations expenditures in high-income countries. In general, the policy of economic development should be more directly aimed at facilitating international cooperation and cross-border dissemination of knowledge by promoting the transfer of technology to developing countries and their distribution in these countries.

In turn, the significant technological developments in socially important sectors often lead to poorly predictable socio-economic consequences, representing a period of chaos, which is an implementation of the action of the deep dialectical laws of intellectual and industrial development of civilization.

The study of different approaches of the definition of «development system» allowed the term «development» to be known as the process of qualitative change in the time structure and functions of which determine the process of transition to a new level of functioning due to the effective interaction of elements of internal and external environment.

In turn, innovative development is a process during which there is a fundamental change and transformation in the economic, scientific, and industrial systems, which are the cause of new scientific discoveries and

emerging innovative directions of development. The innovative development of the economic system is carried out in the order of increasing the investment potential due to the fact that the processes significantly alter the consciousness of the people and the society in which there are innovations.

Innovative development of the economic system comprises the following steps:

- progressive accelerated sustainable development;
- loss of the development process stability, which can be implemented in the process of changing the parameters of the economic system and the achievement of these critical values of the parameters;
- passage of the bifurcation point, which becomes unstable early trajectory of development, and launch new path of evolution of the system, some of which may be stable, others - unstable;
- implementation of the regime of deterministic chaos with a fully deterministic system parameters and external factors;
- the emergence of fundamentally new changes of the system parameters, sustainable process, which can be highly desirable for this system's existence.

In the same system, depending on the parameters and initial conditions the different stages of the innovations are realized at the same time.

Innovative enterprise development provides an opportunity to respond quickly to the dynamic environment, innovative search and form the external competitive environment. Innovative development encompasses all elements of potential companies that determine its readiness for change: decentralization in decision-making, low level of formalization and regulation of administrative work, ability to adapt organizational structure according to change tasks and operating conditions.

The elements of the system of innovative enterprise development include: investment potential as a general characteristic of scientific support of production (science, technology, engineering, manufacturing experience, etc.) available to the enterprise to solve scientific, technological and technical problems; marketing potential as the maximum opportunity to the company to systematize and focus all its functions (identification of needs and demand, production, sales and after-sales service) to meet the needs of target consumers and potential use of markets, including innovative products; logistics potential as part of ensuring the sustainability of the enterprise market producers, suppliers and consumers; information potential as a collection of business information resources that ensure implementation of major management functions and processes of preparing decisions.

Given the significant importance of the above, the task of innovation development process modeling arises as a way to maximize the socio-economic impact for the economic system created by innovations. The existing national innovation systems modeling controlled chaos can detect hidden in the period of the order of alternative strategic directions of the system development, which can allow to achieve important economic, academic and social goals. In the case of innovative development we are talking about a multidisciplinary approach to the implementation of innovative processes that can simulate hundreds of different trajectories of the economic system.

Innovations – are, first of all, a qualitative change in the whole system. In the end, the product innovation qualitatively changes the purpose and means of the system operation. True innovation stimulates a new round of innovations and creates new attractor that attracts system. Thus, innovations are a unique form of chaos which could trigger the output to one of the possible trajectories of development, corresponding to the internal tendencies of the economic system and make it a new qualitative state. This is the role of innovation factors for starting self-organization processes in the economic system and prepare it for various development scenarios. Innovation as a kind of chaos is a factor that can be output nonlinear systems on its own structure-attractors.

The economic system is suitable to selectively respond to external innovations, it sets strict conditions for their penetration, perceives only signals corresponding to its nature, the others can cause massive destruction. In this regard, the real thrust of the system can only serve internal innovation processes.

Whereas the innovations are the element of chaos in relation to the existing economic system, their implementation in the system causes the process of self-organization of adapting the new element in the structure. To speed up the adaptation of the system it generates internal responses of innovations, relationships between the elements become more complicated, the structure of the system changes. In the first stage of self-organization, to ensure the stability of the system, the number of its reactions (internal innovation) one must match the number of external signals. The system builds a structure in which each element corresponds to an external impact, it is capable of generating internal changes in system structure. At the next step an economic system evolves towards more ordered state, which is achieved by means of a hierarchy of elements: order parameters are set, principle of subordination is turned on, effective grouping of homogeneous internal innovation is provided, allowing to adapt with minimal changes in the structure of the system and, therefore, at the lowest costs. In other words, at this step, the

adaptation of the system to the innovative changes is carried out. The system is in relative equilibrium, and endogenous innovations become crucial, what facilitates the speedy adaptation and self-organization. The economic system is selectively responsive to exogenous innovations, setting the hard mode for their penetration, it perceives only impacts corresponding to its nature, and acts negatively with any other.

Having reached a certain degree of inner strength (potential), nonlinear systems becomes activated, structured in accordance with its nature, what originally is given by environment. At this stage, appropriate management paradigm is necessary and that would develop appropriate goals and include the adequacy of the internal mechanisms of the system development. Thus, innovations can be viewed as a violation of the customary order of the system functioning. The procedure can be aggressive, it seeks to suppress any manifestation of the new system, including innovations as a form of chaos. It can be connected with the contradiction, conflict and economic failures that accompany the development of any complex economic system. Such processes can be mitigated, predicting the coming transformation or, on the contrary, exacerbate, deliberately provoking conflicts manageable and chaotic processes.

Nowadays, methods for classifying different types of chaos and laws of its development have been developed. Studies of nonlinear dynamic processes in mathematics and physics have shown that chaotic behavior in systems with a small number of degrees of freedom is typical. In this regard, in recent years a new direction in nonlinear dynamics and synergy on the problems of the predictability of the behavior of chaotic systems, control of their dynamics and the possibility of suppressing the chaos has been intensively developed.

The economic dynamic of the system is very malleable and extremely sensitive to external influences. Moreover, you can control the dynamics of economic systems, that is, by weak interactions such transfer system from the regime of chaotic oscillations on the required dynamic mode (thus stabilizing their behavior). There are two basic ways: inhibition of chaos (without feedback) and chaos controlling (with feedback).

As a part of the innovative development of the systems it is expedient to use the principle of chaos control with feedback, i.e. the formation of the control signal as a function of time without taking into account the values of the controlled process, based on the change in the behavior of nonlinear systems under the influence of a pre-selected external innovation $u(\tau)$.

The model of the innovative development of the economic system should reflect the general vector of development, all areas of operation, which affect innovation processes at any time. Dynamic modeling methodology is based on the notion of innovation processes as a function of

time, the strategic and tactical decisions, and consistency of the economic system and its external environment.

To assess the level of the economic system and its readiness for innovative development a comprehensive system of indicators is needed. This system of indicators is based on the structural model that takes into account not only the actual dynamics but also the theoretical background of the system. These indicators include core competencies and resource advantages. It is advisable to not just identify the gap between existing and required levels of resources and opportunities, but also the importance of matching resources and capabilities specific to their cost and the ability to purchase. This generation resources and opportunities depend on the opportunities for competitive advantage, sustainability of competitive advantage, the possibility of obtaining economic benefits from the use of resources and opportunities.

Formally, the goal control of chaos can be represented as:

$$\lim_{n \rightarrow \infty} G(x(\tau)) = G^* \quad 2.1$$

Lyapunov exponent $G^* > 0$ – of the objective function;

$x(\tau)$ – level of the system at the time τ in the initial state $x(0) = x_0 \in \Omega$;

Ω – the set of initial conditions.

Measured output of the system is denoted by $y(\tau)$, what can be defined as a function of the current state of the system $y(\tau) = W(x(\tau))$.

The task is to determine the control function $\varphi(\tau) = \Phi(y(\tau))$, which provides performance management targets G^* .

Innovations move the system to self-organize, form attractors structures that «force» to develop all aspects of system performance cycle, affecting further innovative motion systems and economic growth.

The reaction of the economic system on the inlet innovative impact can not only be determined experimentally but also calculated if we know the mathematical description of the system. Suppose that an exogenous factor affects the input of the economic system described by the differential equation:

$$\frac{d^n y(\tau)}{d\tau^n} + \dots + b_0 y(\tau) = a_m \frac{d^m x(\tau)}{d\tau^m} + \dots + a_0 x(\tau) \quad 2.2$$

where $x(\tau)$ and $y(\tau)$ – signals at input and output stable dynamic system; a_0 and b_0 – influence factors.

The dynamic properties of any economic system are characterized by the transfer function. The transfer function is one of the mathematical description of the dynamic system. The transfer function is a characteristic of an economic system that fully describes its static and dynamic properties. The transfer function $W(\tau)$ system is defined by the formula:

$$W(\tau) = \frac{y(\tau)}{x(\tau)} = \frac{a_m(\tau^m + \dots + a_0)}{x(\tau)^n + \dots + b_0} = \frac{A_m(x(\tau))}{(x(\tau) - p_1) \dots (x(\tau) - p_n)} \quad 2.3$$

$x(\tau)$ and $y(\tau)$ – input and output factors Laplace;

p_1, \dots, p_n – the roots of the characteristic equation $B_n(\tau) = 0$ – of the poles of the transfer function.

Economic system reaction to an external stimulus by the inverse Laplace transform is determined using output factor. Thus, after the completion of the transition process, the output value Y of the economic system also performs forced oscillations with a frequency equal to the input factors hesitation. This is in the output value y from the offset in phase with respect to fluctuations of the input factor x by an amount depending on the frequency ω of the input vibrations. This relationship is shown in the formula:

$$\varphi = \arctg(\omega) \quad 2.4$$

The larger this offset, the less this economic system treats innovations; less – the more innovative susceptibility.

Thus, the desired result may have been achieved by one or a series of subtle, minor disturbances in trajectory. Each of these disturbances only slightly changes the trajectory. But after a lot of small strengthening, perturbation causes quite a strong trajectory correction. With the right choice of a perturbation we solve the problem of not taking the path of the attractor. In other words, the system bifurcation simultaneously exhibits good handling and amazing flexibility: the system is very sensitive to external influences while retaining the type of movement. Summarizing, the basic idea of bifurcation control is that each disturbance slightly changes the trajectory while maintaining the integrity of the system.

In this formulation, chaotic process control task (task chaos or anti-government) innovative development system requires the provision of achieving a sufficiently low level of the control action. Such problems arise when the chaotic motion is desirable view of system behavior.

System status at any given time should be considered as a combination of factors, excess of which in time $[\tau 0; \tau 1]$ creates the conditions for the transition to the next $y(\tau+1)$ state system:

$$y_{\tau+1} = f(y_{\tau}, v_{\tau}, u_{\tau}) \quad 2.5$$

v_{τ} – endogenous innovations;
 u_{τ} – exogenous innovations.

Significant impact on the development of innovative systems make internal factors such as innovations, skill level and degree of interest of staff in achieving the objectives, financial capabilities, and others. Closely interrelated, these factors often influence different directions on development of the system. The action of the same factor can vary depending on specific conditions and circumstances. It is, therefore, important to know which ones dominate the present and what the nature of their impact on which factors are the most dependent development of the system, the level of the internal and external environment.

In addition, the effect of endogenous innovations is very limited, depending on the amount of resources system (R_{τ}):

$$\sum_{i=1}^n v_{\tau} \leq R_{\tau} \quad 2.6$$

The dynamic model of innovative development of the enterprise may be represented as:

$$I = \sum_{\tau=1}^T G_{\tau}^p * (1 + r_{\tau}^p)^{\tau} + \varepsilon^{pp} \quad 2.7$$

G_{τ}^p – state, the subsystem p of the economic system, what can be defined as either the cost or quality as (ballroom) score;

r_{τ}^p – growth rate, the subsystem p in the period τ ;

ε^{pp} – the cumulative interplay of elements of the system at each other, defined as the additional cost or points subject to methodological principles of the model, such as the principle of innovation, integrity, synergy, diversity, development initiatives, complexity, consistency, priority, timeliness and accuracy of mapping data.

The approach, despite the obvious compactness and relative simplicity of the model, provides the necessary level of adequacy and universality. This complexity class models behavior of economic systems which use different strategies for internal development and interaction with a volatile and uncertain environment, objectively reflected in the nonlinearity of dependencies caused by the existence of a set of possible equilibrium trajectories in phase space innovation development of the dynamic economic system.

Thus, to use the concept of innovations development in the modeling of the behavior of the economic system, it is needed to build an equilibrium surface. A good result can be obtained if we can highlight the control parameters of the dynamics of the system that is its local characteristics. They define control plane parameters. On this plane surface equilibrium is projected. It should also identify internal system parameters that are directly or indirectly associated with the «aspirations» of the system follow the principle of least effort is to minimize some global setting. Control parameters determine the type of trajectories that describe the behavior of the system and this trajectory can be seen in the control plane parameters.

Note the following basic requirements for the development of innovative systems: disturbance should not be strong (can destroy the system); management must be extremely sensitive to the state of the system; it is important to determine how much should be discretion nearby points of instability limited and finally, the integrity of the system should not be destroyed. The task of the innovative development system is to try to preserve its stability while seeking for new alternatives to development. New solutions should be aimed at stimulating the activity of new forces, advanced rules, and principles of the organization, the value of which can provide innovative development system.

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2.2. The inversion of Ukraine economic development in the context of information society constructing

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An appropriate incentive for the creation and development of high-tech industries in Ukraine was not provided with the current model of functioning and state regulation by the economy. High-field forms 6% of GDP and 5,5% of exports (according to OECD methodological approach to rank them from sector of aviation and space technology, pharmaceuticals, scientific instruments, computer and office equipment, electronics and telecommunications). Research intensity of GDP in Ukraine is 0,77%.

Thus, Ukraine's economy was focused by the production of traditional industrial products with low gross value added. It is realized in rich, unpromising for further market development. Research and development of scientific establishments primarily was directed at the needs by raw materials economy.

Moreover, Ukraine's foreign trade in high-tech products during year's independence had become a priority for economic development and a catalyst for qualitative transformation. Ukraine almost had not represented on the global market innovation. In order, the economic development was intangible and immaterial revenues by exports of high technology. Innovation regression of Ukraine's foreign trade was occurred because a further increase in imports «pseudo progressive» technologies.

Therefore, the technology gap between Ukraine and developed countries annually was compounded.

Among the determinants divided into four groups of factors that determined the rate of development Ukraine's high-tech sector (table 2.1).

Table 2.1. Determinants of high-tech sector in Ukraine

Factor	Scope of implementation	Problems of development
Economic mode	Financial resources	- lack of access to capital caused by the lack of domestic investors and low attractiveness for foreign investors; - lacks state support, particularly in the initial stages of innovation, which are subject to a high degree of risk; - restrictive currency regulations
	Regulatory policy	- unfavorable regulatory and tariff policy; - the existence of distortion of the competitive environment; - lack of equal and non-discriminatory business environment; - - lack of regulatory capacity to eliminate barriers
Development of education	Education	- low level of interaction between business and universities; - lack of the modern material and technical base of educational institutions; - low level of practical training technologies; - weak participation of practitioners in the educational process at the level of direct teaching and management in universities; - lack of quality education needs of the market
Development of innovation	Institutional providing high technology	- development of institutional formality elements of innovation (venture capital funds, business incubators, technology transfer centers, technological and scientific parks, technological clusters); - legislative loopholes
	Technology and scientific support	- lack of access to finance; - obsolete technologies; - low level of integration of science and production; - lack of commercialization of R & D; - the aging of scientific personnel; - inefficient management system science; - low level of research activities in universities; - lack of interaction between higher education institutions with businesses, low level of technology transfer
	Security and protection of intellectual property	- not adapted regulatory framework to the current economic and political conditions; - piracy in the field of software and the Internet; - forgery; - violation of legislation on industrial designs; - the weakness of the judicial system for the protection of intellectual property
State ICT infrastructure	ICT	- there is no consolidated government ICT strategy; - the existence of unfair, discriminatory and competitive business environment

These groups of factors are realized through finance, education, science, regulatory policy and protection of intellectual property. In addition, the state of ICT (information and communications technology) infrastructure affects the development of high-tech sector in Ukraine. The direct factor in establishment of national competitiveness was become the degree of ICT development at the present stage of transition the international community.

The effect of the deployment an information society identified significant, that it focuses many governments on this vector of development. Rapid GDP growth of 10-25% was possible benefits of such a development path in the economic sphere. This knowledge-based ICT would have supplied the global market information services, products and technologies to many countries that do not have sufficient natural resources.

Thus, modern ICT infrastructure is a fundamental element in building the knowledge economy and helps to overcome the «digital divide». Therefore, in terms of market potential was appropriated ICT market to distinguish between high-tech industries. An attitude to ICT has carried out a secondary basis during 2000-2014 years by the state. The Ukraine's transformation into one of the least technologically advanced countries in Europe it was caused.

Despite this, the ICT sector in Ukraine is developing very quickly. It has international recognition and owns certain advantages and great potential. Ukraine had among the top-3 countries in Central and Eastern Europe by the amount of market and IT personnel. Ukraine had placed more than 100 multi-center research and development of various industries. They comprise operators, software, games and e-commerce. ICT industry occupies an important place in the economy of Ukraine. It is part of the information and telecommunications. It had employed more than 114,3 thousand business entities different forms of ownership (including 13,3 thousand companies and 101 thousand individual entrepreneurs) in 2014 year. 80,0% of businesses in ICT accounts for small and medium companies. Employees of these entities had totaled 306.3 thousand people that makes almost 3,5% total employment. ICT sector GDP (preliminary data) was 3,1% (\$ 42,765 billion).

Even during the global financial crisis, the sector had grown by 30-40% annually and has shown a tenfold increase over the last 10 years. Revenues enterprise IT industry had 60 billion US in 2015 year (almost three times more than in 2014 year). Exemption from VAT services software development within the territory of Ukraine until 2023 year had contributed to achieving these results.

The most attractive for investors had been the ICT in 2015. It came out on top the dynamics annual growth of foreign direct investment. The volume of foreign direct investment at the end of 2015 amounted to 2,3 billion dollars. This was 5,3% of total foreign investment. The volume of capital investments in 9 months of 2015 amounted to \$ 17,6 billion.

Business entities ICT products had realized totaling 105,7 billion UAH in 2014. Services enterprises realized \$ 74,3 billion (for 9 months of 2015 – \$ 62,0 billion).

Exports of ICT services amounted to \$ 1,5 billion according to official data in 2015. Moreover, imports almost three times less was 0,5 billion dollars. Exports noted services were reduced by 9,5% (\$ 98,5 million) compared to the 2014. Imports increased by 4,9% (\$ 39,3 million) compared to 2014. According to experts in ICT exports generates 4% and is 5,7 billion dollars. \$ 0,7 billion formed by a trade expression (almost 1% of exports) and \$ 5 billion formed as services (3% of exports of services). This is \$ 15,5 and \$ 110,4 respectively per capita. The share imports of ICT goods accounted for nearly 4% (\$ 2 billion). Nearly 80% of services provided to clients from the US, EU and Israel. Exports of ICT cost volume ranked third in 2015. Ahead were the agricultural and steel products. The competition occurred at the level of chemicals production. An average annual export of IT services for the last 10 years was 49%.

Number of IT-specialists in Ukraine is the largest and fastest growing in Europe. Annually the ICT industry creates up to 15 thousand. High-paying jobs. Creating one place in the IT industry stimulates the creation of 3-4 new jobs in other industries. However, almost 25% of ICT professionals work for export, although there is information about 90% of export-oriented professionals.

Certain part of immigrating national specialists or working on the company in USA, Canada, Germany and South Korea, primarily due to level of salaries. Wage Indicator Foundation compared the earnings of IT-specialists in Big Mac in different countries. If IT expert gets 1,2 Big Mac per hour (\$ 2,7) in the domestic market, in Russia – 2,3 (\$ 6,5), in Germany – 3,8 (\$ 29,7), in USA – 5,0 (\$ 35,1), in Great Britain – 5,7 (\$ 27,4) [1]. Despite the unsatisfactory level of salaries, the IT industry in Ukraine remains one of the most attractive and highly dynamic sectors of economic activity (the average salary in Ukraine is \$ 1,5 per hour). It is necessary to contribute its development primarily because a source of non-price competitive advantages is people as carriers of intellectual capital in the information network economy.

Precondition for the rapid development of the ICT industry has become the presence of a large number of ICT professionals, high quality fundamental technical education. According to the research «Exploring

Ukraine IT Outsourcing Industry», Ukrainian universities annually produce about 16 thousand specialists in the field of information technology. For today over 100 thousand Ukrainian programmers work in different companies, as demand for IT-specialists in the world market continues to grow. This allows Ukraine, according to the report «Global IT IQ» of Brain Bench Company, has already ranks 4th in the world in the number of certified IT professionals [2].

Ukrainian IT-companies are in Global Outsourcing 100. In the world market of IT outsourcing services in 2016 are well-known Ukrainian brands such as Soft Serve, Eleks, Sigma and Miratech [3]. There are 6 international companies have placed their offices in Ukraine – EPAM, Ciklum, Luxoft, Intetics, Softjournal and TEAM International Services. In opinion of the organizers of the ranking, with proper positioning and more attention from the state to the list of the world's best IT brands can access other Ukrainian companies.

According to The Global Information Technology Report 2016 of World Economic Forum, Ukraine has taken 64 ranking positions among 139 countries by improving results during the year by 7 points in the level of development of ICT [4].

Although the current structure of the ICT sector in Ukraine is represented solely by software development, providing Internet access services, Internet advertising, creation of Internet sites and offshore outsourcing of IT services, but experts point out that alternative Ukrainian innovative breakthrough may be forced by development of IT industry.

In our view, emphasizing the priority of IT sphere is quite reasonable instrument towards increasing the competitive advantages of the country. Due to the global economic conditions, the company Miratech predicts growth of Ukrainian IT services export by \$ 1 billion annually to 2018 [5].

This vector of development involves the creation of own technological brands or accession and inclusion in the already existing wellknown brands.

This technology and telecommunications brands continue to dominate in global ranking BrandZ™ Top 100 Most Valuable Global Brands [6]. In addition, they indicate the highest growth rate, including the 5 of 20 fastest growing brands operating in the ICT.

However, today the state of ICT development in Ukraine is far ahead of the state of development of legislation in this area. Condition of information society and ICT sphere in Ukraine, is insufficient and does not meet the strategic goals of development of Ukraine compared with global trends. Legislation in the telecommunications does not comply with the needs of operators, telecommunication providers, not the interests of

consumers of telecommunications services. Therefore, improvement and reformation of legislation in the ICT field is now the main task of the developing legislation in Ukraine.

At present disadvantages of legislative regulation in the ICT field are:

- fragmentary implementation of e-services in Ukraine;
- overregulation in the field of foreign economic activity of business entities (required paper form of foreign trade agreements, the need for service exporters of performed work acts);
- imperfection of legislative regulation of digital terrestrial television broadcasting;
- the absence of transfer mechanism for mobile number from one telecommunication operator to another;
- the absence of adequate mechanisms to consumer protection of telecommunications services in case of termination of the telecommunication operators, providers;
- the absence of a single central executive authority responsible for the formulation and / or implementation of public policy for the development of the information society, field of telecommunications, programming;
- the inefficient transition from analogue to digital terrestrial television broadcasting;
- the possibility of terminating proper functioning of information and telecommunication systems, multiplayer platform during investigation activity (extraction of information and telecommunication systems that results in an actual suspension or significant complications of the activities of a business entity).

Additionally, the development of ICT sector depends on solving systemic problems such as:

- inadequate level of training of ict professionals;
- low level of attractiveness of the country to potential investors and customers of high-tech products;
- the absence of promotion of Ukraine from the government as a European high-tech hub, both within the country and abroad;
- outsourcing predominant orientation of the executed works determines the fact that most of the gross value added of the final product remains abroad;
- low demand for the products in the domestic market;
- the absence of closed cycle production of computer and office equipment;
- growing competition for IT professionals from other countries.

Overcoming referred obstacles, as estimated, will allow growing the ICT industry in Ukraine for 2020 to \$ 7,7 billion and in GDP structure –

to 5,8%. Moreover, IT-sphere can become one of the major export industries of Ukraine's economy. It is expected that in 2020 the number of IT-professionals in the country will close to 200 thousand. This will create over 100 thousand new working places that in turn will stimulate the need for 400 thousand jobs in other sectors [7-8].

Achievement of significant results in this direction requires appropriate infrastructure and reassessment of importance of ICT in all social spheres. It requires establishment of a new quality of business processes that meet conditions of global competition. This breakthrough is impossible without the active role of government in the formation of «most favored nation treatment» for the development of the whole information and telecommunications industry.

The intensity of the international cooperation of Ukrainian IT companies should become the driving force that will overcome imbalances of technological structure of manufacturing and exporting, contribute to upgrade the technological base and access to foreign markets.

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2.3. General framework for strategic aspect of national innovation security analytics

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Development of countries under modern conditions requires methodological comprehension of the problems to improve national security management mechanisms. As a result the existing analysis models are reoriented. Necessity in qualitative new categorical apparatus comes to a head while studying national security institute and its constituents during the globalization. It is important to involve new methods. It will allow to observe state mechanism to provide national security in real time, through determination of its place within the economic system development framework.

Current state of nation's innovation activity doesn't provide technological growth and accordingly, great fastening of the economic development in Ukraine. The mentioned problems become aggravated due to the absence of strategic vectors of innovation activity, insufficient of well conceived innovation projects, their realization inefficient control and monitoring, high experienced specialists' disadvantage in the innovation sphere. The innovation activity success depends on its various participants' actions coordination, including authorities of different level. The break in the innovation sphere has to be provided not with great investments into the innovation sector, but with state authorities' abilities to play an active role in the innovation process [8].

The necessity of new tools application is caused by understanding, that currently «government agencies are operating in a challenging environment where they have budget constraints, and they face a very tough threat environment» [2].

The aim of this research is to consider of main benefits, challenges and real-life examples of analytics implementing in government sector in the national innovation strategic security management.

According to Munk T.H. «security is overwhelmingly based on the nodal governmentality approach, where states are just a node among others. In the transnational context, states still hold a strong position in transnational cooperation. On the contrary, cross-sectoral cooperation is purely openended and not tied to old cooperative alliances. ... this contains a different combination of actors, which creates a more innovation foundation beyond the state-centric approach» [5, p. 172–173].

Another conditions of national security govern can be illustrated on the example of Britain's National Security Strategy and Strategic Defence and Security Review 2015, in which it is mentioned, that «safety

and security depends not just on our own efforts, but on working hand in glove with our allies to deal with the common threats that face us all, from terrorism to climate change» [6]. In the National Security Strategy UK experts also considered among others such strategically important capabilities as bio-security, special forces, cyber security, intelligence, surveillance and reconnaissance and satellite communications etc.

Nowadays there is an influencing on the public opinion from abroad and e-Government security among new aspects of national security, i.e. it is necessary to provide such condition where e-Government structure will be maximum stable to cybernetic attacks.

The specific nature of methods concerning national security threats counterstand in the USA is preconditioned with these threatens character. For example, reconnoitering in the USA, using the innovation-based advantages on constant observation from space and intelligence information processing, collects information from mass media all over the world, receives data through aircraft and space means for video- and radiotechnical reconnaissance, and complex study of the received information by highly experienced analysts, is able to follow the keep agreements, troops dislocation, development, testing and mass destruction weapon deployment.

One can observe lack of information and analytics impact to make decisions, particularly concerning innovation system management and its ties with economy, due to parallelism tasks and incoordination of departments functions in the security sphere, and also analytics quality and level. It is probably that it influences the disadvantages both in the general priorities order and in the general procedures setting to plan and control the security problems.

This problem is essentially deepened by many factors and ties in the innovation system linkages. In the Quintuple Helix and International Helix models in our previous studies [4] we have suggested to consider an ecosystem of innovations as self-organizing system, where there is available all complex of resources necessary for creation and growth of innovation companies, and the relationships between numerous participants of innovation process are streamlined and harmonized.

In this situation information keeps not only competitive advantages and benefits for business, but also risks, connected with its loss or wrong interpretation. Besides, the data, stored during many years, creates a problem of the sketchy data effective control. Business-environment also requires from market participants to increase business-processes efficiency, unification and optimization of the control procedures, and responsibilities zones division. Mentioned aspects form the new objectives of innovation system for the national security ensuring and analytics application.

Talking about analytics application, we can underline that it is not yet formed a consensus about what we mean in analytics, and also there is no unity of vision of principal characteristics and differences of subject.

According to Gartner approach analytics can be defined as «comprised of solutions used to build analysis models and simulations to create scenarios, understand realities and predict future states... Analytics is used to describe statistical and mathematical data analysis that clusters, segments, scores and predicts what scenarios are most likely to happen» [1]. Based on this analytics can be defined as the process, that involves both IT and skills of specific individuals and that allows to obtain knowledge of the economic data, to convert this knowledge into strategies.

So we can define the aim of the national security state analytical study as checking of the fact whether the state is ready to counter serious security threats, and how state is stable to face direct confrontation with danger.

The culture of work with analytical technologies in state structures abroad was being developed constantly. At first they learnt to prepare data for analysis and to organize normative and inquiry information. Then the reactive and describing analytics was used: to answer the question about what has happened, and how often analogical situations are fixed. Only in several time due to tasks complicating, they came to the methods of the profound or predicative analytics, learnt to prognosticate future events.

In order to achieve goals in the proper research, the national security theory relating to the innovation aspect and its informational and analytical aspects can be defined as interdisciplinary area of the fundamental and applied science, which studies human's national interests protection from various dangers and threats, investigation and introduction of the proper innovations. But owing to the fact that within national security the analytics object is a complicated social system, and accordingly is not an interdisciplinary, but multidisciplinary approach and is absolutely obligatory.

Analytics in the innovation sphere must be based on the following principles, given in study [9]:

- 1) organizational and institutional differences among countries play an important role while forming the scientific and technical progress (Lundvall 1992, Nelson 1993);

- 2) although cumulative nature of the technological development process is confined to the area of potential directions in development, national ways strengthen differentiation and diversification as a branch of the main way in development (OECD 1992);

- 3) conception of dependence way represents us method to inspect scientific and technical progress, which is localized in time and socially implemented (Garud and Karnoe 2000);

4) established technological paradigm tries to form synergetic combination of organizational, institutional and cultural structures in economy, providing firm base for long-term economic growth (Perez 1993).

Changeable role of the state reflects the fact that increasing number of organizations has significant skills for transformation process. That's why state is becoming more depending on other collective participants, such as large companies, researching institutes, associations of employers and trade unions, and is forced to let these organizations to participate in the process of policy conceptualization and to integrate them into the policy making process.

General objectives of analytics in state management are connected with the statistical models application and pattern analysis for unstructured data in order to understand the activity patterns. Also analytics allows to ask a new questions of some unstructured data to obtain new insights and efficiencies for decision making. Unlike tactic efficiency, which shows the current activity efficiency, i.e. the involved resources efficiency in short-term period, strategic efficiency, connected with existing qualitative measuring: renunciation or conquering of the significant position, loss or purchasing of strong competitive advantage etc.

As a rule, the given indexes are subordinated. For example, indexes, which demonstrate the global economic environment, prices for raw material resources influence on state activity, effecting budget revenues and budget expenditures, and local markets, particularly the price for produced goods, and concretely the indexes of enterprises activity. It is rationally to divide indexes, because it allows to analyze an impact, made by external and internal factors.

Therefore they are constantly improving, procedures and processes are tested that provides increase of scientific and technical and social and economic development perspectives foresight sufficiency. The main vector of the analytical methodology development is oriented to more active and reasonable use of experts' skills, who participate in projects. Usually every innovation foresight-project uses a combination of different methods, including experts' panels, Delfi (inquiries of experts in two stages), SWOT-analysis, brainstorm, scenario setting, technological road maps, relevancy trees, mutual impact analysis.

Within security analytics we propose to observe the system based approach GRC (Governance, Risk and Compliance).

According to GRC methodology, first of all aims are defined. Then some activity for their achievement is initiated. While activity is performing, they wish to control it, getting in-time, objective and right information on their implementation. This function Governance – pointing of aims and their achieving control.

Then risks are thought over, which may appear on the way to the set objective. They try to find which obstacles influence the aim achieving. The revealed risks are processed and further this procedure is repeated from time to time. This function is called risk management, which unfortunately has insufficient systematic nature.

Besides while planning and carrying out the activity, it is necessary to follow many internal and external rules (laws, branch standards and contractual obligations). The fulfillment of all these requirements is a function to control compliance.

That's why with purpose to guarantee national security, it is necessary to introduce practice of long-term analytics and strategic planning, which will foresee the evaluation of the perspectives to develop relevant state in the world to the innovation system factors, role and place of the country in the international society, its allies and partners while solving both long-term and intermediates tasks, top-priority national interests and main directions in activity.

We investigated, that in estimating strategy efficiency analytics the following groups of the development indicators need be considered:

- national priorities, that reflect orientation of actions to achieve national technological competitiveness;
- social and economic infrastructure – institutions, which support resources, necessary for modern economy, based on technologies;
- technology infrastructure (technology support system) – institutions and resources, influencing ability of the country to investigate, produce and introduce new technologies;
- producing capacity – quantitative criterion (physical and human resources, used in goods producing) and their usage effectiveness criteria.

When we talking about analytics, contextual analytics is also possible, e.g. combating climate change requires the large scale diffusion of clean energy technologies. For this reason, enhancing technology development and transfer has been a key objective of the United Nations Framework Convention on Climate Change (UNFCCC) since its inception [3], which uses such principles as:

1. Build on priority progress. Analytics in identification and setting of priorities should be build on efforts and results of previous and other assessments. It is important, that the synthesis of various relevant assessments be undertaken to tease out identified specific priorities;
2. Focus on value-addition analytics. The technological priority areas should be value adding. Mechanism should not focus on those issues, areas and activities that can and should be undertaken by national governments using their own domestic financial, institutional and technical resources.

According to this mechanism of increase of capacity and strategical efficiency of innovation system is based on the analytics of potential of open innovations in global environment, that should include:

- innovation should be considered as the development of competitive advantage;
- high degree of motivation and receptivity to innovation;
- organization of innovation development based on networking and collaboration;
- use of a marketing approach to research and development;
- internationalization of priority projects.

In the case of innovation security analytics high-tech cross-sectoral linkages should also be considered. The leading high-tech industries refer to those high-tech industries of high growth potential, high rates of innovation and high industrial linkages as well as the breakthrough-driving functions to the economic growth. The leading high-tech industry is not only the high-tech industry according to high R&D input, high intelligence-intensive, high risk and high benefit, but also the dominant industry of high industrial linkage and high growth potential in economic development.

It should be noted the main advantage of the approach based on technology platforms:

- 1) implementation of a selective mechanism for the development or technology import;
- 2) union of interests and innovation efforts of five parties (government, science, universities, investors, business), and the integration of science and education in the business environment;
- 3) use of market mechanisms (addressing trends technological environment);
- 4) the ability to effectively select the direction of innovation in the country;
- 5) openness, flexibility and synergy from the interaction between different technology platforms at the national level with innovation agents at the international level.

In the field of international cooperation analytics should increase bilateral effects, i.e. synergies from the interaction of different elements of the national innovation systems. Economic and legal aspects of international relations is also important because it establishes limits of technology transfer, but at the same time it includes risks of technological dependence. That's why within the strategy we need to follow such main principles of the internationalization of scientific and technical relations analytics, considering their influence on national security:

- 1) cooperation in application of scientific and technological progress;
- 2) scientific and technical assistance;

- 3) equality in science and technology relations;
- 4) equivalent exchange of scientific and technical achievements;
- 5) freedom of scientific research («fourth freedom»).

These principles reflect the close interaction between international law and the scientific and technological development. In addition, these principles were reflected in the resolutions and treaties of international organizations. The UN General Assembly resolution «Advances in science and technology and their impact on international security» encouraged States – UN members to explore ways and means for further development of international legal standards which affect the transfer of high technology with military applications. As a result of analysis of the national innovation system should consider the socio-economic impact of international technological links and development of national capacity.

We can conclude, that in current context of global socio-economic and innovation development, that is characterized by avalanche accumulation and increasing complexity of information, especially important area of activity is information and analytical support of management processes, that consists gathering and analyzing the information needed to make informed management decisions. Based on these aspects in this study we proposed to consider analytics in the context of national innovation security management. Thus, the research allow to develop scientifically-based recommendations on efficiency increase concerning strategies of innovation development programs forming estimation in economic systems, based on methods improvement, ways and instruments of the analytical analysis and estimation of the innovation processes efficiency, that let to provide balanced development in economic systems by the economic and innovation indexes complex.

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2.4. The complex approach to simulation in the management of socio-economic systems

Iakovenko V.S.

At the current stage of the economic process of society and their specific interactions one have long faced the need to formalize these processes and relationships. With the formalization it becomes possible modeling and forecasting of specific system that will adjust its further development. Current mathematical tools allow isolation formalization to conduct certain processes and state socio-economic system. However, without a comprehensive representation of the system one can't adequately manage and influence it. So take some device that will formalize the system on various aspects of its operation only by clear rules.

Development of certain types of simulation is needed to guide the famous scientific figures and practices. To simulate the values of dynamic systems Jay Forrester, Professor, University of Massachusetts proposed a system-dynamic approach. For modeling of processes that operate within the system Geoffrey Gordon proposed a discrete approach of the event. Agent modeling approach was proposed by Nobel laureate Thomas Schelling. There are the basic principles of the approach made

by the agents that have certain properties, characteristics, behavior algorithm given its interaction with other agents that may have their own characteristics. These approaches formed a class of simulation, which approaches are successfully used by analysts around the world. However, the development of socio-economic systems leads to globalization, because these approaches is appropriate to adapt to modern requirements of modeling and formalization of processes and states.

Based on the issues set aim is forming the basis for creating a common mechanism that combines approaches to modeling and will formalize the system in a single logical-mathematical apparatus. According to the established goal the following problem should be solved. The specific simulation must be identified. The main stages of simulation must be set. The specifics of each approach to simulation must be expanded. The need for integrated use of these approaches to modeling socio-economic systems must be proved.

To build and research of models of complex systems is necessary to define requirements, forms of representation and description of the model character type of the model and methods. Depending on the orientation of the target model special requirements for most models must be set. The following requirements are imposed by simulations:

- 1) integrity, information, multilevel, plurality extensibility, abstract;
- 2) the possibility of building the model itself and its research;
- 3) the possibility of materializing model as some real system design problems.

The model must substitute the reality with the degree of abstraction, which is useful for the goal. First of all, it must reflect these essential properties and side object defined practical task. One must correctly mark and articulate the problem and clearly specify the purpose of the research. The main requirement for the models adequacy is their reality, to be sure that the results accurately reflect the true state of affairs. The model must be robust, simple and user friendly, as well as technological, that is easy and convenient to manage. It is also necessary to make it fully functional in terms of solving capabilities necessary tasks, and adaptive to change, allowing you to easily navigate to other modifications, update it and the interaction with the user. When creating models it is needed expenditures of time, labor, material resources to build models and experiments should be hold within acceptable limits or justified in specific circumstances.

There are continuous, discrete and continuous-discrete types of simulations. In a continuous simulation model of the system state changes as a continuous function of time and normally, this change is described by systems of differential equations. According promotion

model time depends on numerical methods for solving differential equations. In the discrete model variables change in time of an event. In continuous-discrete models combined time promotion mechanisms characteristic of both types of models.

To logical and mathematical models used in the simulation of complex systems can be implemented on a computer based modeling algorithm that describes the structure and logic of interaction of elements in the system. Software implementation is the simulation algorithm simulation model. It is made with the use of automation simulation. Experiment on simulation model on research conducted business system in order to get information about its functioning, is necessary for decision-making.

Simulation models is a model of cyclic type, which is the entrance and exit. If it had to file for specific settings, you can get it relevant results. For new parameters or relationships simulation program must be started again, that is not resolved simulations and fixated. They form their own decisions, as is the case in analytical models, and provide means to analyze system behavior in terms of definable system analyst.

The feature modeling stochastic systems whose dynamics depends on random factors such as initial input and variables are described as random variables, functions, processes, sequence is that the desired value in the study of processes defined as average values on large amounts of data implementation process. So experiment model includes several implementations runs and allows evaluation according to population. In this case, the law of large numbers, more than the number of implementations, the obtained estimates become more statistical stability. One run on certain operating rules and a specific set of parameters is only enough for deterministic modeling.

If the goals of modeling is to study the system under different conditions, assessment of alternatives, searching out depending on the model of the array of parameters and, eventually, some search optimal variant, the analyst, changing the values at the input model must fulfill numerous machine runs a simulation model. It is necessary for the collection, storage and further processing of the system. This raises a problem: how to collect the data, how to conduct a series of runs and how to organize a meaningful experiment. Since the initial data derived from the experiment may be many, there is a problem processing more difficult than the task of statistical evaluation. The organization and planning simulation experiment analyst must choose a method of data collection to achieve the objectives of the study and determine its volume, while striving to reduce the time required to operate the model by minimizing the number of simulation runs. In strategic planning it appears the relationship between controlled variables sought or combination of values

of controlled variables that gives the best results. Tactical planning methods related to the definition of the set of simulation runs. It solved the problem of determining the length of runs, assess the accuracy of the simulation results and others.

Simulation combines a number of approaches, including: system-dynamic, discrete and agent of the event.

The system-oriented approach to dynamic modeling of complex systems through indicators that characterize it. The principle of non-linear system behavior and feedback between the elements of the system serves in the main aspects of the system dynamics modeling. The approach is based on systematic and dynamic. Understanding consistency suggests that the universe around us is a combination of social and economic systems complex of nonlinear and possibly irrational behavior. Dynamics enables modeling and analysis of system behavior not in static conditions and in development. This makes it possible to track the behavior of the system in time, its change under the influence of those or other options, including formal difficult. These aspects provide flexible analytics tool for prediction of the system and each of its elements and its meaning uncertain separately in a difficult environment. Clearly, the performance of the system is related. Mathematically, this relationship is realized with integral equations. The author of the approach used the term «constant» figures that do not change the model for the model period, the term «variable» for parameters that vary over time, «level» – for performance systems that are able to accumulate their values and «flow» – value of the index, which leads to the accumulation of «level». The use of systemic and dynamic approach is relevant. among other things, issues of corporate governance. When making management decisions in the areas of sociology, economics, political influence, and so on. This approach enables modeling at the macro level, such as modeling the environmental, social and economic systems, and more. It is also used in system dynamics modeling microcosm that allows you to answer the question «what if?». Simulation Game of the microcosm enable developers and participants in real time using different scenarios to make strategic management decisions and at the same time to get a reaction from the system. Simulation games can improve conceptual scheme model. It should be noted that the development of systems thinking, like system dynamics involved in the US since kindergarten and approach taught in schools.

The basic principles agent approach were the agents that have certain properties, characteristics, behavior algorithm given its interaction with other agents that may have their own characteristics. Agent modeling has a significant advantage over the system-dynamic approach,

adaptability during the simulation experiment, because system-dynamic model structure rigidly given during model building as opposed to agents that modify the structure of the model for more effective cooperation in environment. Agent simulation can be from one side of the abstract and theoretical, on the other – it's clear the problem. There are four main stages of modeling using agent-based approach:

- 1) Delimitation model. What is simulated it is a phenomenon, an event which is the model.

- 2) Determine the behavior and interaction of agents. Developed model of behavior and decision-making agent and social interaction with other agents model.

- 3) Developed model and conducted its testing.

- 4) Performing karibrovka models and sensitivity analysis.

The method used in modeling at the micro and meso levels, such as the behavior of social groups in social programming to establish the reactions of members of social groups, competition between companies and so on. Unlimited use of agents is in simulation models of programming by allowing the analyst to create very complex and utility models that can play most accurately the behavior of social groups or one individual in society. However, the application of agent-based modeling, may cause irrational decision-making agent, or agents, what is irrational and based or behavioral economics.

Discrete approach of the event is based on modeling of flow processes of the system. The mathematical basis of the theory of queuing systems, the main elements of which are the order queue and their size, intensity and arrival services. The method used at the micro level, the modeling of distribution centers, production systems, serving the citizens of with certain inputs and outputs. Here is a table comparing approaches to modeling economic systems (table 2.2).

As you know, changing the level of abstraction system that is studied, it is often necessary to switch to other models of the description, the indicators behavior of complex systems at different levels of abstraction requires considerable experience and enjoyment of the approaches and methods. Related to this is unpopularity using these methods. Isolation of system-dynamics, agent and discrete-action simulation unable to reliably reflect the fullness of the complexity of the world. The combination of the component system-dynamic, agent-based and process approaches within the same model, through combined modeling allows you to bring simulation to the real world. Based on the characteristics of approaches to simulation, referred to earlier, it is advisable to try to use them to describe a system in a single time slice.

Table 2.2. Comparative characteristics of approaches to modeling

	System dynamics	Modeling agent-based	Discrete simulation
Base element model loop	Feedback	Agent	Order
Area analysis	Structure of the system	Rules of conduct of the system	Processes of the system
Modeling level	Macro level	Micro level	Micro level
Direction of modeling	Bottom modeling to the mountain	from top to bottom	Inside
Time	Continuous	Discrete	Discrete
Mathematical modeling of the basis	Differential integral equalization	Logic	Systems queuing

There are the following stages of simulation modeling.

1. Formulation of the problem and determine the research objectives. At this stage, the following steps: collection of data on object modeling and assembly, meaningful description of the object modeling; study the problem situation, problem determination and problem definition; rationale for modeling clarify its objectives and choice of design.

2. Development of a conceptual model of the object. At this point, you need to define a common plan model and the transition from the real system to a logical scheme of operation. Performing a description of the object in terms of mathematical concepts and algorithmic operation of its components.

3. Formalizing simulation model. Developing a formalized description of the system based on its conceptual description. Then it is converted to a program-imitator accordance with programming techniques. Formal model of a complex system needs to algorithmically represent object modeling and to be free of secondary information available in meaningful description.

4. Collection and analysis of incoming data for the experiment. At this stage the testing, research models and test models. A verification model assessment of adequacy, the study of the properties of simulation models and other procedures for testing the model.

5. Test and study the properties of the simulation model Once the simulation model is implemented on a computer, you need to check the accuracy of the model. To do this iteratively carried out the planned comprehensive testing simulation model using the procedures of verification and validation, as described in the works. If the simulation model will be not credible, it must be calibrated.

6. Planning and conducting simulation experiment. Analysis of the results and their use for decision-making. The organization is directed by computational experiments in simulations. Different analytical

methods for processing the results, regression and analysis of variance, gradient and other optimization techniques can be selected. Simulation studies are time-consuming iterative process that requires Modeler was a skilled systems analysts, and technology, which has modern computer technology to create and study simulations. He must be able to correctly apply the methods of mathematical statistics and other mathematical and computational procedures for identifying simulation models for the treatment of experimental research. In the analysis of simulation results is their interpretation, and used for decision-making.

As the trend in modeling systems, simulation, in our opinion, is the most close to the real terms of socio-economic systems. Application isolation of each simulation modeling approach is justified only in small tasks and clear systems of signification level of abstraction. When the question arises in modeling different aspects of socio-economic system it is useful for complex simulation. This will reveal the specifics of the system through the Process, functional and behavioral approach. If the quality of construction of complex models, analytics and the user will be able to use the model of scenario approach, conduct experiments and simulations to obtain reliable results. Also integrated simulation system can simultaneously be formalized in various degrees abstraction and, if necessary, in different modeling time.

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2.5. Exchange trade as an innovative form of economic relationships

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Exchange trade is an integral part of the modern business processes. Foreign exchange trade has been forming in the course of several centuries resulting in the creation of a powerful basis for certain rules, principles and traditions. Ukrainian exchange business is still in a formative stage in spite of the significant number of positive changes present in the domestic exchange activities. The exchange trade statistics confirm this statement being significantly lower both in volume and trade intensity in comparison with developed countries. This requires researching effective mechanisms of exchange business management in the Ukrainian realities.

Theoretical and methodological framework for exchange trade are covered mainly in the teaching materials by Ukrainian and Russian authors (A.I. Berlach, N.A. Berlach, Yu.V. Illarionov; G.Ya. Rezgo; V.V. Rarovska, L.A. Ostankova, S.E. Akopov; O.M. Sokhatska etc.). Practical methodologies are outlined in a number of scientific works by Ukrainian and foreign authors (for example, D. Starenko and O. Sukhorukov, B. Steenbarger, E. Nayman etc.).

As a form of organized market, exchange has become a driving force for economic processes in any country and business sphere. That is why it is extremely important to highlight specific features and characteristics of exchange trade that set it apart from other forms of exchange.

Studying and summarizing of works [1-4, 9-11, 13] has become a basis to classify specific features of exchange trade according to certain criteria:

1. Exchange trade is characterized by such *common traits*:
 - exchange doesn't involve in trade mediation activities, it only creates the conditions for it;
 - trade publicity (exchange trade takes place in the presence of all exchange members or with their full knowledge);
 - trade transparency (the results of exchange trade are open to public, their details are available through the media);
 - state and public regulation of trade.
2. As a form of *organized market*, exchange trade is characterized by such traits:
 - existence of approved rules of trade, calculations and delivery of assets (goods, services, securities, etc.);
 - existence of an organization which manages the market;
 - concentration of sufficient number of sellers and buyers in time and space;
 - state regulation and self-regulation.
3. Unlike other forms of commercial activities, exchange trade has such *organizational characteristics*:
 - it belongs to certain place and time (exchange trade takes place only in specially designated areas (or on a special website in case of online trading) and only at a specified time);
 - exchange develops specific rules of trade which apply to this exchange facility, are obligatory for all exchange trade members and involve penalties for non-compliance with them;
 - trade is carried out typically through exchange intermediaries, both on the part of a seller and a buyer.
4. Exchange trade features such *market characteristics*:
 - concentration of supply and demand for goods that are sold on the exchange;
 - exchange transactions can have production and consumption orientation or they may possess a speculative nature based on traders' desire to achieve maximum commercial success.
5. A commodities exchange has such characteristics:
 - trade is carried out through quality description and in absence of commodity itself;
 - the consignment of goods which are being sold, are standardized, homogeneous and interchangeable.
6. Exchange trade has to possess certain characteristics to carry out successful *online trading*:
 - both client and broker have permanent access to the necessary exchange information with the account of trading schedule;

- risk for the traders is minimized with the help of special computer technologies and financial calculation schemes;
- the usage of a special software which was either specifically designed with the account of a certain exchange platform or borrowed and adapted to the specific problems of the domestic market.

7. *Futures exchange trade* has such characteristics:

- fictitious nature of agreements (exchange of goods is virtually non-existent, and obligations of the parties under the agreement are terminated through concluding a retroactive agreement);
- strict unification of the use value of an exchange commodity, a certain amount of which represents an exchange-traded contract that is used as a price carrier;
- strict regulation of the quantity of goods that are allowed for delivery, and of the time and place of their delivery; indirect connection with the real goods market mainly through the exchange-traded insurance (hedging) and not through the delivery of goods;
- impersonality of agreements and substitutability of their counterparties (since these agreements are concluded between a seller, a buyer and a clearing house, and not between a specific seller and buyer; the clearing house here acts as a guarantor of fulfillment of obligations).

There is a great variety of goods offered on the market, but not all of them can become an object of exchange trade. The goods which can't be an object of exchange trade are unique items, if they are not sold as a consignment of goods, and any capital assets or used goods with the exclusion of vehicles. Likewise, the indicated restriction does not apply to the property that has been sold as a tax lien or confiscated.

According to the Law of Ukraine «On the Commodities Exchange», the traded commodities include real goods, securities, currency, financial engineering instruments which meet the required conditions of the exchange trade.

It should be noted that an exchange commodity must meet the following requirements [3; 4; 9; 10]:

- large-scale production and consumption, a lot of producers and a wide range of consumers;
- standardization, meaning that a commodity has to conform to the requirements established by the current legislation regarding quality and other characteristics. The commodity has to be easily standardized in order to be sold without the necessity to review its sample or technical description. In practice, exchange standardization is one of the main attributes of an exchange commodity;
- interchangeability within the certain groups and types of commodities;

- transportability;
- good preservation;
- independence of the qualitative characteristics of the commodity from a specific consumer;
- price variability under the influence of natural, seasonal and other factors.

In the past few decades the share of trade of the exchange-traded contracts with real goods has drastically decreased, and, respectively, the share of contracts with financial instruments has considerably grown.

Studying the experience of the world's exchange trade, we can single out three classes of exchange commodities (material commodities; financial instruments; foreign currency) that can be divided into 3 groups (fig. 2.1).

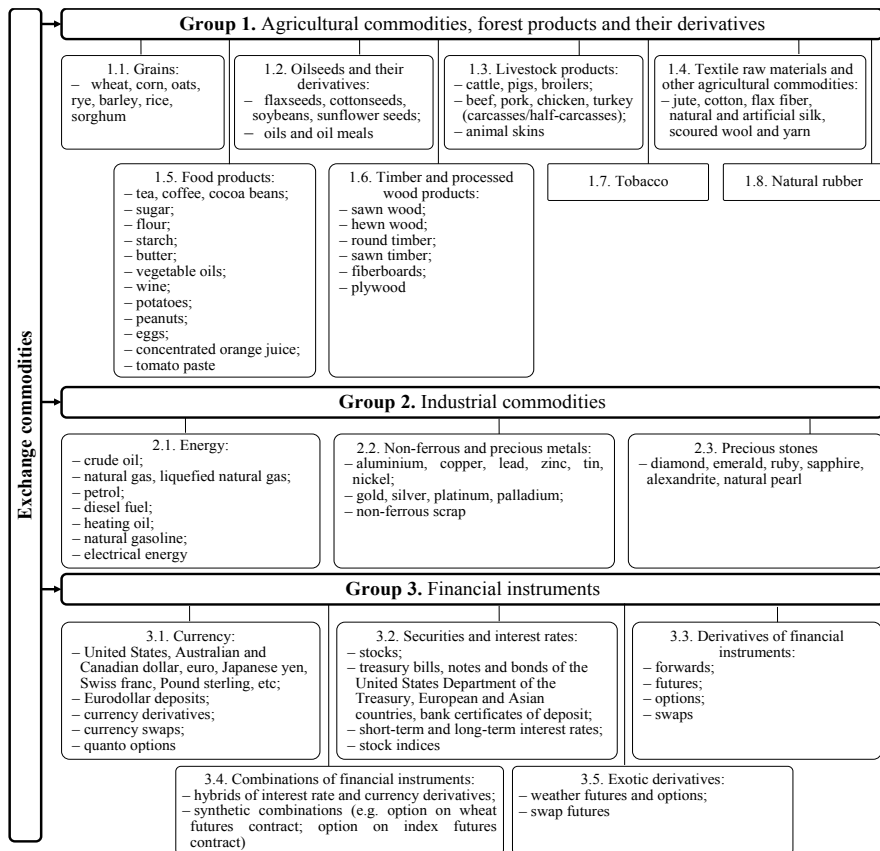


Figure 2.1. Classification of the exchange commodities

The continued development of the exchange market promotes the amplification and sophistication of the list of exchange commodities. It involves mainly the third group of the exchange commodities, financial instruments. If the Ukrainian exchange market is viewed more generally, then, according to Yasenetskyi V.S. [15], its operational problems arise from a short period of development, unregulated legal framework, vague organizational and legal status of the exchange, a considerable degree of administrative price regulation, low level of exchange transactions technification.

A lot of Ukrainian scientists dedicate their researches today to a comprehensive assessment of the existing development problems of the Ukrainian exchange market and finding ways of overcoming them. Using the results of our own observations and summing up the ideas of the Ukrainian scientists, we can single out top 10 problems of the Ukrainian exchange market [7, 14, 15]:

- imperfect legal framework. The main legislative acts which regulate the exchange activity in Ukraine are the Laws of Ukraine «On the Commodities Exchange» and «On the Securities and Stock Market». Unfortunately, their fragmentation and inconsistency with the other legislative documents, that regulate business activities of the national economic agents, hinder the Ukrainian exchanges to get near the international exchange community;
- low level of market organization. In spite of a record number of officially created business organizations entitled «exchange» (555 exchanges as of 2015 [6]), the Ukrainian exchange market is an artificial creation and doesn't perform its inherent functions. The exchanges operate mainly in their own isolated business environment, or they are created for the business benefit of a certain group of people. The majority of the exchange transactions are carried out on the over-the-counter market, and agreements that are concluded on the exchange, aren't actually exchange-traded contracts for the most part. It should also be noted that the market lacks transparency of pricing mechanisms and openness of information;
- low level of market liquidity. A limited number of exchange transactions cause low liquidity of an organized market, which in turn hinders its development considering that investors aren't able to properly perform the investment portfolio management. This means a lack of possibilities to perform asset transactions at market prices due to absence or insufficient level of their supply and demand. One of the consequences is high market volatility;
- limited number of exchange instruments. In spite of the existing variety of financial instruments and derivatives, there is only a narrow

range of them in Ukraine with a limited number of characteristics (i.e. profitability, riskiness, protectability, etc.);

- low level of trust. Operating commodities exchanges cannot ensure traders that the commitments under the exchange-traded contracts will be fulfilled. This weakens market players' interest in exchange trade and, consequently, leads to small amount of exchange trade. On the other hand, companies don't regard stock market as an available source of low-cost financial resources. Company stock prices don't indicate their success and developments prospects. As a result, there is a significant underestimation of the majority of exchange assets and a low level of capitalization of the stock market. The market is also characterized by the scarcity of financial resources accompanied by an unfavorable investment climate in the country due to low international image of the national business structures;

- imperfect fiscal stimulus. Lack of benefits for investors, double taxation of dividends, taxation of investment income, registration fee for securities, license fees, etc.;

- lack of qualified specialists and impossibility until recently to get field-specific education in Ukrainian schools. Only in the recent years Ukrainian higher education establishments have started to open training programs for those who major in exchange activities and trade. It should be noted that previously all interested could get expensive education abroad or attend the training courses that gave only a cursory view of the specifics of exchange processes. The establishments that provide such services often operate as a pyramid scheme.

- low level of protection of stockholders' and investors' rights. The protection of stockholders' rights in Ukraine is more a formality than an effectively functioning mechanism. It is typical that it is impossible to have any real impact on joint-stock company's activity, there are no guarantees on behalf of the state regarding the protection of rights, the companies don't want to pay dividends, natural persons have limited access to the stock market.

- low level of exchange ethics and business-culture. The world exchange trade is characterized by the high level of regulation of its activities, has certain rules of subordination and even its own specific language. International exchanges conduct their activities according to the principles of transparency and openness, present their results at free access to the general public. In the meantime, Ukrainian enterprises in general and exchange entities in particular are characterized by low level of compliance with rules and business ethics, are quite closed and prefer to conduct business behind the scenes.

- technological backwardness. The national exchanges use outdated technologies and primitive electronic trading instruments. Today's

pressing matter is integration of electronic trading platforms into the state procurement system ProZorro hidden difficulties (for example, exchange accreditation, coherence of the platforms that are written in different programming languages, etc.)

It should be noted that, in spite of quite a large number of problems of the Ukrainian exchange market, they can be overcome. Solution of the underlying causes will lead to the disappearance or minimization of the secondary problems. The chaos and inconsistency of the exchange activities have mainly to do with the fact that domestic exchanges try to travel a long way of the foreign exchanges in a much shorter time. The accelerated pace and certain specifics of the development of the Ukrainian economics lead to problems in a process of adaptation of the international experience to the Ukrainian realities.

The subsequent studies will be dedicated to the in-depth studies of scientific and methodological framework for exchange management taking into account national conditions of development of the exchange trade.

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Section 3

Regional aspects of innovative growth

3.1. New forms of spatial organization of business as a motive force for innovation activity in the region

Tkach S.M.

In the current conditions of economic management no sustainable development is possible without innovation. Over the years Ukraine has been on the search path for the optimal model of innovation-driven growth. The leading countries' experience has proven a successful use of new forms of spatial organization in business (technological, scientific, industrial parks, free economic zones, clusters, business incubators, multinational corporations, etc.) as a «growth area» of innovation activity in the regions. Considering the topicality of the issue, a thorough study of the features of the components of innovation infrastructure in Ukraine as well as in countries with a high innovative development should be carried out.

In almost all countries there are running *special (free) economic zone (SEZ)* of various types. The practice of creating favorable conditions for business development under the spatial criteria has been used for quite a long time. In particular, the first manifestation of the formation of SEZ was revealed in the Phoenicians and ancient Greeks. Modern SEZ is part of the country where economic entities benefit from defined concessional tax, monetary and financial, customs and other terms of economic activity. The most successful practice of SEZs application is observed in China, USA, Brazil, UK, Switzerland, South East Asia and others.

There are different approaches to the classification of SEZ. In particular, depending on the specialization they are divided into: trade (free customs, port areas, bond warehouses, commercial and industrial zones), industrial-production (import-substituting, export-industrial, industrial, scientific and industrial parks, export-import-substituting zone), technical implementing (technology parks, technopolis, innovation centers), service (offshore, zones of banking and insurance services, travel services), complex (free enterprise zones, SEZs, areas of special treatment) zones [5].

Nowadays, based on the development timeline, the following three generations of SEZ can be outlined:

- 1st generations being single-functional trade zones in the form of duty-free zones and free trade zones (up to World War II);

- 2nd generation, meaning the industrial-production zones in the form of export processing zones and others (first half of XX century);
- 3rd generation, which are technology-innovative areas as technopolis, technology parks, areas for development of new and high technologies (70-80s of XX century) [5].

As is seen from above, most SEZs of the last (third) generation are aimed at enhancing innovation. In particular, *science parks* are significant centers for commercialization of research results and their implementation on the foreign and domestic markets, using scientific and educational potential. They are based on one or more leading higher educational institutions with the participation of interested manufacturing companies being able to implement high technology.

Silicon Valley (Stanford University Science Park, USA) was a pioneer in the development of science parks the world (1950s). Although, the oldest and the most well-known science parks in the world are Sophia Antipolis (France, 1960s) and Tsukuba Science City (Japan, 1970s). Today, there are over 400 science parks worldwide and their number is still growing. The USA with more than 150 science parks is on the top of the list. Japan has 111 science parks and China has around 100 science parks [13].

Whereas, *the technoparks* are complexes of independent organizations (higher educational institutions, research institutes, companies), within which the implementation the projects of industrial introduction of science-intensive designing, high technology and ensuring the industrial production of competitive products are carried out [1]. The activity of *industrial parks* is highly specialized and is performed in the field of manufacturing, information and telecommunications as well as scientific research. Activation of these forms of spatial organization of business is particularly relevant at the stage of the economy adaptation under the conditions of the fourth industrial revolution and being focused on the development of new technologies in the field of artificial intelligence, robotics, biotechnology, autonomous vehicles and others.

In recent decades there has been traced an active transformation of the science parks, which took place in several stages: from university science parks (up to 80s of XX century), industrial science parks (up to 2000s), science park as a network organizational structure (up to 2015) to network model without physical presence on a single location (after 2015) [9].

Science parks, industrial parks, technology parks and partners, in their turn, form clusters, meaning a network of interconnected manufacturers, suppliers, consumers, academic (educational) institutions, NGOs and local authorities that complement and enhance the competitive advantages of each other. The key benefits of clusters constitute the

following: creating favorable conditions for innovation (availability of technology network on a common scientific base), stimulating small business development, specific-industry specialization, competitive products manufacturing, inter-sectoral cooperation and investments attraction.

There are many types of clusters. For example, clusters differ in terms of their stage of development along the cluster life cycle; some are networks of SMEs, some are organized around key anchor firms, and yet others have developed around universities. Specific nature of clusters differs according to technology, market conditions, and other factors that influence the geographic extent and relative strength of linkages [11]. Clusters are referred to the *innovation ecosystem*. Innovative clusters which are informal unions of various organizations aimed at implementation of new knowledge transfer and scientific discoveries and inventions have become considerably developed in the world that turns them into innovations that are in demand in the market. This form of spatial organization of business includes all the innovation chain: from the idea of creating innovations, its scientific rationale and its implementation in a production and delivery of the final product. Thus, the production of innovation is enhanced.

Clusters play an important role in the economy of Europe. Roughly 38% of all European employees work in enterprises that are part of the cluster sector. Many European regions due to clusters have developed competitive advantages in specialized activities such as financial services (London), biopharma (the Danish Swedish border region), petrochemicals (Antwerp) and flowers (Holland) [11].

According to the rating of The Global Innovation Index 2016 [13] for the development of innovation Ukraine takes 56 place among 144 countries being surveyed (fig. 3.1). Among the countries neighboring Ukraine only Belarus has worse outcome. By contrast, world leaders according to this indicator are Switzerland, Sweden, UK, USA and Finland. Given this, it is advisable to investigate thoroughly the experience of these countries in the formulation and development of new forms of spatial organization in business.

In *Switzerland*, a close attention is paid to the development of new forms of businesses spatial organization in the innovation field, but their diversity is low compared to the UK, USA and Finland. Specifically, the basis of innovation infrastructure of Switzerland in this context is made from technoparks, science parks (for example, Life Science Park Zurich-Schlieren), technopolises (Technopole Sierre), science & technology parks (Y-Park Scientifique et Technologique), clusters, «start-up»-centres, business incubators, centers of technological transfer [13; 15].

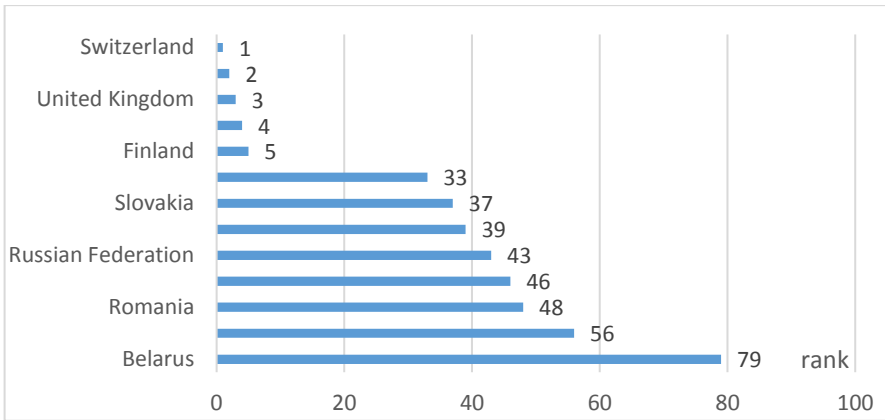


Figure 3.1. The Global Innovation Index 2016 rankings (Source: [10])

On average, 43,7% of the population in the regions of Switzerland is occupied in clusters. According to data of European Commission, the best regions of Switzerland by total number of stars and share of employment in clusters are: Nordwestschweiz (12 stars and 49,4% employment), Espace Mittelland (12 stars and 52,35%), Zürich (11 stars and 51,55%), Ostschweiz (9 stars and 55,53%), Zentralschweiz (8 stars and 41,39%), Ticino (8 stars and 56,13%) i Région lémanique (4 stars and 46,21%) [11]. The main specialization of clusters are finance, transportation, metal, IT, biopharma, production tech., hospitality. It should be noted that in Switzerland there are highly developed clusters, based on their size, specialization and number of employees.

In Switzerland, there are successfully operating technology parks and business incubators constituting a place of cooperation between small and medium enterprises, venture capital firms, high-tech enterprises and educational as well as financial institutions. In particular, a key focus in the activity of technology parks in Switzerland is made on the development of high-tech fields: biotechnology, biomedical engineering, life sciences ecosystem (Park Basel Area), accelerating technology, advanced materials and processes, healthcare and energy (Park innovative), life sciences and its quality, engineering, environment, digital technology and communication (Park Zurich), industrial technologies (Park Biel), robotics, microtechnology, 3-D printing, etc. (Park Network West EPFL) [15].

As it is known, Swiss higher educational institutions are among the best educational institutions in the world. Accordingly, the process of technology transfer centers at universities play an important role in the

innovation infrastructure. Owing to them, there is cooperation between the industrial and scientific sectors, providing support for the creation of «spin-off» enterprises, commoditization of scientific research results, their licensing and patenting.

Given the fact that *Sweden* has strong scholarly traditions, this allows it to effectively apply the principles of innovation model «triple helix» [6]. That means by the joint efforts of universities, public authorities and businesses within certain clusters there is stimulated the development of innovation in the country. Thus, science parks make up 75% of all spatial forms, which also includes research parks, scientific and technological parks, as well as a form of science city [9]. The state priorities of research activity in Sweden belong to biology and biotechnology, medicine; information and telecommunications technology and ecology, sustainable development.

Innovative clusters in Sweden as in Switzerland as well as the UK have a high level of development. On average, 41,6% of the population is occupied in clusters. The main specialization of clusters in that country are automotive, transportation, IT, forest, business services, metal, education. Among the regions of Sweden by total number of stars and share of employment in clusters with stars, the leaders are: Stockholm (13 stars and 67,62% employment), Småland med öarna (9 stars and 56,42%), Östra Mellansverige (8 stars and 40,41%), Norra Mellansverige (7 stars and 44,97%), Västsverige (6 stars and 36,40%), Mellersta Norrland (5 stars and 42,51%), Sydsverige (3 stars and 20,06%) i Övre Norrland (2 stars and 23,97%) [11]. Among Swedish industrial parks there should be allocated Kista Science City that is the prototype of the Silicon Valley in the USA. The units of such famous companies as Ericsson, Infineon Technologies, IBM There are also located there. Despite the fact that the core of the industrial park is IT, in recent years the following areas like biomedical technology, engineering in the field of environment and nanotechnology have been emerging [12].

The strength of the business spatial organization in Sweden is the presence of a significant number of powerful transnational corporations (TeliaSonera, SCA-Svenska Cellulosa, Volvo Group, Atlas Copco etc.) [16]. Consequently, they encourage the development and innovation that meet the needs of the international market in the first place.

Great Britain takes the first place among European countries by the number of new spatial forms of business organization [13]. It should be emphasized that while implementing the innovative policy it is aimed at global leadership in science. Accordingly, strong innovation clusters are grouped around such scientific centers of the country as London, Cambridge and Oxford. Overall, in the UK one can find science parks of three

types: 1) science parks in the narrow sense; 2) parks where innovations are developed only to the stage of technological prototype; 3) innovation centers within which universities at their base (land, buildings, laboratory equipment and services) enable operation of newly emerging companies (spin-off company) for a small rental fee [6]. In this country innovation centers are mostly focused either on certain areas of economic management or market, or on development and promotion of specific technologies.

Thus, a wide spectrum of new forms of spatial organization of business is running in Great Britain. There are science parks (Oxford Science Park, Pentlands Science Park, Virtual Science Park, Wolverhampton Science Park, West of Scotland Science Park and other), technology parks (Antrim Technology Park, Cranfield Technology Park, Lee Valley Technopark, Plassey, Staffordshire Technology Park and other), science & technology parks (Aberdeen Science & Technology Parks, Nottingham Science and Technology Park, Westlakes Science & Technology Park and other), research park (Cambridge Research Park, Heriot-Watt University Research Park, Norwich Research Park and other), business and science parks (Begbroke Business and Science Park), innovation parks (Cheshire Innovation Park, St John's Innovation Park); technopolis (Edinburg Technopole, Portsmouth Technopole); science city (Science City York); research, science, innovative, technology and bio-centers [13].

Most regions of Britain have more than ten clusters, which they are trying to develop, while most of them are based on technologies (biotechnology, technology for automobile industry or environmental technology). More than 64% of the population is employed in the UK clusters, which is the highest index in Europe. Top-10 regions by total number of stars and share of employment in clusters with stars are: Inner London (16 stars and 93,40%), Outer London (12 stars and 74,63%), Berks, Bucks and Oxon (11 stars and 59,82%), W Midlands (11 stars and 62,02%), Gloucs, Wilts and N Som (10 stars and 50,35%), Greater Manchester (10 stars and 58,21%), Hants and Isle of Wight (10 stars and 56,84%), E Anglia (9 stars and 63,26%), Surrey, E and W Sussex (9 stars and 67,23%), NE Scotland (9 stars and 63,34%) [11]. The main specialization of clusters are business services, finance, transportation, education, automotive, IT.

Similar to Great Britain, the USA also pays great attention to the development of science. Therefore, 56.9% of the spatial forms of business are owned by research parks at universities [11]. In addition, innovative infrastructure is being formed by technology, research and innovation parks, technopolis, technology platforms, centers of scientific and technical information, information transfer centers, research, innovation,

technology centers, business incubators, universities, innovation, venture funds and etc. Unlike the EU countries, in the US the emergence of technology parks and venture funds has been held independently from the state authorities.

One of the first science parks in the world was Silicon Valley, which together with other companies is formed by Stanford University, Northwestern Polytechnic University (Fremont), Carnegie Mellon University, San Jose State University and Santa Clara University. Currently it includes more than 7 thousand members [14]. Silicon Valley is characterized by a significant density of high-tech companies' concentration (computers and their components, particularly micro-processors, software, mobile communication, biotechnology, etc.).

The USA hosts over 30% of technology parks of the total amount in the world. A peculiar feature of technology parks in the United States is that they have established a close relationship with public research centers and universities. Science and technological parks are operating at the basis of such leading institutions as Harvard University, Columbia University, Yale University, Stanford University, UC Berkeley, Massachusetts Institute of Technologies, etc. In particular, they are the Center for Social Entrepreneurship at the University of Mason, Center for Social Innovation at Harvard Business School, Center for Entrepreneurship and Innovation at Berkeley. In recent years, there has emerged the creation of energy-innovation hubs based on regional innovation clusters in the field of solar energy, energy-efficient designs and nuclear energy.

Finland differs from those given above by the structure of spatial forms of business organization; hence the emphasis is laid on technological development of the country. Thus, science parks constitute 37,5% (Helsinki Science Park Ltd., Carelian Science Park, Jyväskylä Science Park, Kajaani Science Park, Turku Science Park, Viikki Science Park and other). However, other forms include: techno parks (Oy Media Tampere, Prizztech Ltd., Technopark Raahe, Teknologiakeskus Kareltek Oy), technopolises (Finn-Medi Tampere, Oulu Technopolis, Technopolis Hitech Oy), technology centers (Tampere Technology Centre Hermia, Technology Centre Kareltek, Technology Centre Teknia and other), argo-, medio- polises [11]. Quite similar to the case of Sweden, multinational corporations (Amer Sports, Frosmo, KONE, Nokia, Stora Enso, UPM (company), YIT) are an important catalyst for innovation development in Finland [16].

The largest technopark is Otaniemi that is a research complex in the region Helsinki on the basis of the Helsinki University of Technology. In addition, Turku Science Park is the largest and fastest growing science park in Europe. Its main areas of work are Biotechnology (Bio Turku)

and the sphere of information and communication technologies (ICT). Moreover, in Finland there is created the largest network of technology parks in Europe – Technopolis. It integrates science parks from six regions of Finland, Tallinn (Estonia) and St. Petersburg (Russian Federation). Technopolis is focused on IT, electronics, biotechnology, medical technologies, technologies for forestry and food industry [7].

Though, main specializations of clusters differ from those of the previous countries. Thus, forest, transportation, education, construction, finance, communications are dominant areas of research. On average, 42.5% of the population in the regions of Finland is occupied in clusters. Among the regions by total number of stars and share of employment in clusters with stars, the leaders are: Etelä-Suomi (13 stars and 62,01%), Pohjois-Suomi (7 stars and 48,77%), Länsi-Suomi (7 stars and 34,13%), Itä-Suomi (3 stars and 25,27%) [11].

In *Ukraine*, in the second half of the 90's XX century, in order to attract foreign investments, increase export of goods and services, improve innovation activity, use of labor and natural resources, develop infrastructure and accelerate socio-economic development of the country there were established 11 SEZs («Azov», «Donetsk», «Zakarpattia», «Interport Kovel», «Health Resort Truskavets», «Mykolayiv», «Porto Franco», «Port Crimea», «Reni», «Slavutych», «Yavoriv») [8]. However, the functioning of national SEZs, belonging to the I-II generations, eventually proved to be ineffective due to the following:

- immaturity of legal regulation of SEZ, including the control of entities that operate on the territory of SEZ; lack of transparency in the selection of such entities, etc.;
- large-scale of violations (primarily in tax and customs law) made by the entities in SEZs;
- budgets losses resulting from exceeding the volume of given tax exemptions over tax revenues;
- low volume of investment;
- low proportion of foreign investment in the total investment income;
- the loss of investors' confidence, especially foreign ones, due to changes in operating conditions of SEZ;
- low budgetary returns from raised investments;
- passive development of innovation.

However, Ukraine remains promising for development of other functional types of SEZ which are directly aimed at stimulating innovation in regions, science, technology parks, technopolis, industrial parks. Although, currently, these forms of spatial organization of business have lacked sufficient establishment in Ukraine (fig. 3.2).

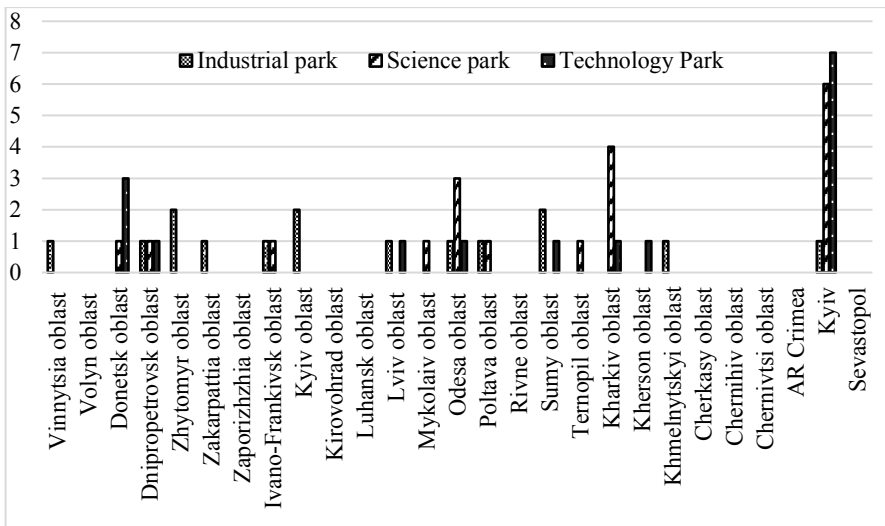


Figure 3.2. A network of science, technology, industrial parks in region of Ukraine (Source: [2; 3])

Despite high educational potential, the network of science parks in Ukraine is not extensive. In particular, the following are existing research parks: in the city of Kyiv – «Kyiv Polytechnic», corporation «Taras Shevchenko Kyiv University Science park», «Aerospace Innovative Technologies» and LLC «Science park of Kyiv National Economic University»; in the city of Ternopil – «Ternopil Innovation and Investment Cluster»; in Kharkiv – «FED», «Kharkiv Science city» and «Radioelectronics and Computer Science» [3].

Although 16 technology parks have been established in Ukraine, only half of them is implementing some projects: 3 projects are carried by «Single Crystals Institute» (Kharkiv); 2 projects are on-going at «Kyiv Polytechnic» and «Semiconductor Technologies and Materials, Optoelectronics and Sensor Technology» (Kyiv); «Ye.O. Paton Institute of Electric Welding» (Kyiv), «Vuhlemash» (Donetsk), «Institute of Technical Thermal Physics» (Kyiv), «Tekstyl» (Kherson) and «Yavoriv» (Lviv oblast) – each holding by 1 project.

Creation of a regional network of industrial parks has been set as one of the priorities for the development of regions of Ukraine till 2020 [4]. Since 2013 the establishment of 22 industrial parks has been initiated, 14 of them have been included in the Register of industrial parks. As of 09.22.2016 in Ukraine there are also operating 4 private industrial parks not included in the Register of industrial parks [2].

Given this, it should be noted that new forms of spatial organization of business remains an effective mechanism to attract investors to the region. Moreover, the issue is of attracting investments into science-intensive products. Therefore, Ukraine should intensify its development. In this context and based on the previous experience of SEZs establishing in Ukraine, it is necessary to:

1. State authorities:
 - form the legal framework regulating all forms of spatial organization of business;
 - develop appropriate program of development of parks and cluster structures in the regions;
 - increase spending of state budget for scientific research;
 - apply direct financial state support for the development of new forms of spatial organization of business (development of special benefits and privileges in land relations and leasing, taxation, credit, imports and exports of high technology products);
 - protect investors;
 - develop infrastructure;
 - improve the operation mechanism of public-private partnerships;
 - promote the exchange of best practices between domestic and foreign cluster, park structures.
2. Scientific organizations:
 - take the initiative in creating science parks;
 - create an innovative research product that would be interested businesses;
 - improve cooperation with government and business.
3. Businesses and organizations:
 - search for partners for future cooperation in the format of spatial forms of business organization;
 - attract researchers from academic institutions to develop innovative products.

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3.2. Implementation of innovations as a way to provide competitive advantages at the postgraduate business-education market

Sohatska G.V.

Development of technologies and all-sided social informatization forms new economic conditions, which change the game in competitive environment very quickly. Global changes, supposed to be features of the forth industrial revolution, due to the World economic forum estimations [1], new challenges are absolutely presented in relation to economic subjects and educational establishments, which supply labor market with new staff.

The world society is included to the global changes age, connected with computer technologies penetration into all spheres of life. Ukraine feels these changes as an integrated element in the international economy. Studying the prognostications concerning labor market development owing to the expected transformations [1-4], there are main tendencies, which describe demands to future workers. Taking into account fast increase of the computer technologies role and creation of artificial internet, a human has to develop creative and communicative skills, creative thinking, leader characters, ability to combine knowledge on various spheres and to solve extraordinary problems. The main condition of high personnel qualification includes constant study, improvement of professional skills. The system of staff reskilling and postgraduate education is a leading element to form future personnel, which is responsible for qualitative labor market composition and structure. The system of postgraduate business-education as a source to form managerial workers, specialists in various economic areas, which are motivating transformational changes in economy, plays an important role.

Problems on innovations introduction to modern educational system of higher school are shown in native and foreign authors' works. A significant contribution to develop and systematize methods was made by such authors as T.I. Turkot [5], P.Yu. Saukh [6], I.I. Dobroskok, V.P. Kotsur, S.O. Nikitchyna [7], Yu.V. Bystrova [8], in scientific works of whose Ukrainian higher education perspectives development and establishment stages are represented; forms, methods, traditional and innovative technologies of study at modern high school.

The leading theme of the scientific studies is determination of innovations essence and nature as motivation for modern economy. Particularly, this topic is revealed in works of V.G. Kremen, V.V. Ilyin, S.V. Prolyev [9], N.P. Tarnavska, O.S. Holodnyuk [10], and all famous scientists in the world and particularly in Ukraine.

The problem to analyze the structure and to develop native market of educational service is shown in studies of the following scientists: I.S. Hrashchenko, T.A. Sydorenko [11], V.G. Voronkova [12], V.A. Verba, T.I. Reshetnyak [13, 14], K.V. Kovalska [15] etc.

Although there are stable scientific and practical interests to the modern educational system development problems under conditions of increasing competition from business-study alternative forms, some aspects of this problem have not been solved yet in the practical and conceptual plane. Particularly, structural elements of the educational service market of the postgraduate business-education as the most open sector for competition and competition nature at the market, require specification. It is also important to solve the problem to search for stable competitive advantages of educational providers' business-education segment under conditions of transformational changes on the way to the open developed economy of the forth technological revolution stage.

The object of the research is to define innovative directions to increase the educational service competitiveness of the native HEIs under conditions of the competitive increased at the postgraduate business-education market.

Nowadays society feels great informational load, and it creates new conditions to manipulate consciousness or impact on people's behavior. The most major problem is not to receive but to filtrate information, to distinguish really significant aspects, to rethink and check its truthfulness. Certainly, information impacts the emotional state and human's working efficiency level, turns it into the object for influencing, depended on external conditions. Therefore, absence of systemacity in personal informational space formation, indefiniteness of regularities and criteria to improve it, provides the worker's own efficiency reducing.

So, the necessary condition to increase labor power competitiveness is to create conscious management of the individual informational environment with purpose to create positive creative thinking, a mean to perceive and transform the environment. The educational system has to create all necessary conditions to form skills of the future worker's critical thinking, in order to master new knowledge and to improve skills due to changes in the scientific and technical environment.

Today situation, which appears around the labor resources market, is described with lack of business-education institutions flexibility in response to economy demands. Specialists, who get business-education, do not have enough practical experience to solve practical tasks quickly at the working places. Employers try to find first of all a worker with some practical experience, which is able to solve concrete tasks quickly, than that one, who has profound theoretical knowledge, but doesn't have

enough experience to use it in practice. It leads to some break between goals of educational institutions and employers. It is a base to increase number of unskilled workers and to reduce graduates' employment percentage. The ways to solve this problem are not only some organizational actions, but also systematic transformation of the higher business-education institute, but also establishment of really working connections with business-environment and introduction of the innovative study methods, based on the modern technologies.

This problem cannot be solved in short term, that's why life requires from business to find other sources to provide high professional training and retraining of workers. It is necessary to point out that the existing demand for qualitative educational service with an opportunity of their immediate practical use in Ukraine is satisfied not only by higher educational institutions, but also by other market players. The main suppliers of the educational service in Ukraine can be presented in the scheme (fig. 3.3).

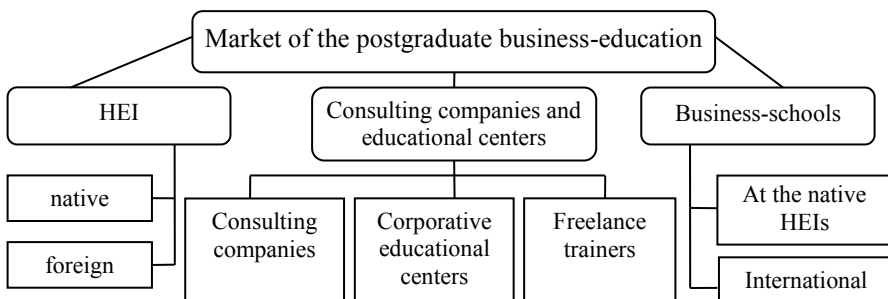


Figure 3.3. Generalized structure of the postgraduate business-education in Ukraine [author's investigation]

Investigating competitive environment in this segment, one can see great impact of international educational and consulting institutions on the market trends formation. Although there are essential differences between native business-environment and countries with developed economy, the image and status of the leading international companies are absolute guides for agents at the home market. It concerns not only managerial consulting sphere, where large transnational corporations take leading positions, but its segment of business-schools with study by the programs MBA, and in the sector of higher and postgraduate education, where informational space openness and modern student's mobility form conditions for high competitive pressure on the part of foreign educational establishments.

While distinguishing foreign institutions of business-education among competitors, this direction to get educational service is greatly spread among Ukrainian youth. According to experts' estimations from center CEDOS [16], number of Ukrainians, who studied abroad, has been 47,7 thousand people by 2015, and dynamics of this index growing was 80 % from 2009 till 2014. The most attractive countries for study were Poland, Germany, Russia, Canada, Czech Republic, Italy, the USA, Spain, France, Australia, and Great Britain during that period. During 2015 there were 53 thousand people [17]. It proves high dynamics of migration educational processes. The Ukrainian students' number, who studies at Polish institutions, was equal to almost 2/3 of the total growth. Polish institutes became popular among youth owing to language and cultural similarity, territorial closeness and low price for education in comparison with other countries in the world. Polish government suggests also some programs of financial support for Ukrainian students, making the study partly or totally free of charge for some categories. According to experts' views, «there are about twelve various scholarship programs, which cover not only the cost for study, but also for accommodation, meals, etc.» [17].

It is popular not only in Poland: financial support of students is foreseen in Czech Republic, France, Germany, some educational institutions of the USA, Great Britain, Canada. Under conditions of native HEIs number decrease owing to restructuring and demographic fluctuations [11], such tendency only intensifies competitive struggle at the home educational market.

The most competitive impact on the postgraduate business-education sector is made by managerial consulting segment, which is closely connected with business-structures. It provides the highest competitiveness of this segment in comparison with educational institutions. The consulting companies activity is based on business needs satisfaction while solving concrete managerial tasks owing to experts' involvement, who are leading specialists in the concrete activity field. So, consulting companies demonstrate maximal focus on clients and flexibility while giving educational service.

Observing the structure of the consulting segment structure, one can distinguish the following elements (see table 3.1).

One should mention that every group has clear segmentation, which allows to control competitive relations and to form proper marketing policy to promote goods. The first division in group of consulting companies includes the world-known companies as Deloitte & Touch Tohmatsu int., Ernst & Young, Arthur Andersen & Co SC, McKinsey & Co, Price Water house Coopers, which form «big five» of the world leaders

in consulting sphere, have representatives in large regional centers and are oriented to satisfy demands of business and state managerial structures.

Table 3.1. Consulting providers in Ukraine [formed by author on the basis of 13-15,18]

Providers of consulting service		
Consulting companies	Corporative educational centers	Freelance trainers
Large transnational consulting corporations	Educational academies for inner staff	In the structure of small companies
Large scientific and research companies	Educational certified centers of the open type	Independent with authors' programs investigation
Average specialized companies	Centers of advanced training for narrow specialties	Independent consultants

Scientific and research centers with developed experts' personnel can unite both educational and consulting and researching activity. It gives an opportunity to suggest complex managerial qualitative decisions for large companies.

The third subgroup includes companies, which are focused on a market segment and have high specialized consultants to solve specific tasks. Usually the limited staff of consultants defines their territorial localization.

The second group unites corporative educational centers, created on the basis of huge financial and industrial groups or corporations with purpose to support high quality of the staff, to provide workers' professional and intellectual development and to grow the company competitiveness owing to stable competitive advantages creation. Such centers can have close or open format, depending on scales and objectives of the company. The most widespread educational centers are in the branch of IT – market, where companies have constantly to increase degree of personnel qualification to keep competitiveness under conditions of technological changes [18]. Peculiarities to provide educational service in this group consist in great number of experts, who have great experience in the professional sphere, very specialized knowledge in the proper branch, but do not have necessary qualification for study, which form barriers during the process to give knowledge and skills, reducing studying quality.

The third group has trainers-freelancers, who present themselves as experts on several problems and work as either individual consultants or in small companies on professional study, or individually, promoting own authors' educational courses. Therefore, level of such expert's qualification in some cases can be confirmed with suspect documents, and service providing quality doesn't always fit price policy of such provider, mainly being based on marketing innovations successful use in the sphere of products promotion and clients' involving.

Product and branch segmentation of companies from these groups is various and comprises main structure creating branches in economy: metallurgical industry, chemical industry, telecommunications, building and financial sectors etc. [15]. As for production specialization directions, the following programs are mostly demanded:

- the programs, connected with retail and whole sale in the commercial networks;
- training of personnel in the banking sector;
- training on specialized goods (equipment, computer software, medicine etc.);
- technologies of the on-line selling and promotion in Internet;
- team building;
- technologies of the personal growing;
- strategic management;
- financial and managerial consulting.

Each direction uses some specific tools for training, methods to promote educational product, search and keeping of customers, skills mastering. The common peculiarity consists in clear orientation on the customer's current real demands, market requirements, short form of information, which is the most valuable for customer, interactive study technologies use, controlled by practical experience, high level of students' self-motivation and interest in to master some practical skills. Under conditions of time limitation such study form is more comfortable for a student and allows to process information and to receive maximal practical value during the short period.

With increase of demand for qualitative business-education in Ukraine, there are various also business-schools, which proposed the high level postgraduate education with MBA degree by the example of foreign foundations. They are oriented on the top-management segment and mid-ranking managers, who wish to prove or refresh their knowledge on economics and management by some directions and as a result to be awarded with significant document – certificate. The education cost of such level at the Ukrainian market may be compared with

cost for study at prestigious universities in the world. It makes our education not available for many potential consumers. Quality is provided owing to involvement of the leading specialists-experts to the studying process in several business spheres. So, competition is extended only to little but financially reliable segment of the business heads.

Under conditions of the informational technologies global extending, modern system of business education becomes more open for many people, using online technologies for study. Famous educational platforms (Coursera, Prometheus, Udacity, EdEra, and others) are well-known, which give free of charge access to various courses, and put online lectures of the leading HEIs in the world, such as University of California, Berkeley, Harvard and Stanford Universities, Massachusetts Institute of Technology, University of Cambridge and Oxford, become more and more popular in different places in the world and put in question the traditional teaching system, accepted today by most native HEIs.

Nowadays we observe how principles of personality competences formation are being changed; mainly HEIs as a base of science and culture have to play leading role in this process. Obviously, that this process requires social responsibility and ideology change first of all.

In order to keep key positions at the postgraduate business-education market, native establishments must actively introduce innovative methods of teaching, based on conception changing and new relations formation between subject and object of the study. It is reasonably to introduce digital technologies to create educational space of the transforming study. Successful experience of separate Ukrainian HEIs in partnership with Western scientific and educational centers, observed in [4], can be spread to other institutions activities and educational programs.

Tarnavska N.P. and Holodnyuk O.S. mentioned in the work [10, p. 14], in order to provide stable competitive advantages, companies have to use not only conceptual or applied innovations, but also to unite them into marketing innovations as those, which increase the competitive state at the enterprise or organization. Thus, educational institutions are reasonably to be quickly adapted to changes in the informational space, introducing such methods of study activation and own intellectual educational product promotion, which mostly correspond social demands considering economy transformations prognostications in mid- and long-term period.

Introduction of such methods will help to increase quality of the labor resources, to optimize managerial expenses, to stimulate native companies development.

Concluding the mentioned above, one can point out that priority business demands at the labor market consist in high-qualified specialists

receiving for constant self-improvement and career progress. The developed infrastructure at the educational service market can satisfy this problem, which will aim to form the workers' constant training system.

Today there is high competition at the business-education market, which helps to reveal more appropriate ways and methods of learning for consumers. The powerful players in competition are not only educational institutions, but also consulting companies and business-trainers, who satisfy separate market segments. So, in order to provide stable competitive advantages, native HEIs must form and introduce conceptually innovative methods of teaching and to promote educational service, which will take into account perspectives for labor market development in the age of technological revolutions.

Among innovative methods of teaching the approaches, which activate critical attitude to the subject of investigation, form emotional intellect, allow to shape professional competence and assist the personality's development, show great interest.

Slowing of innovations introduction tempo will weaken the competitive status of native establishments at the postgraduate business-education markets. Absolutely, state support and proper regulative actions will be a necessary condition to form market infrastructure, oriented to satisfy demands of wider population.

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3.3. Problems management of Ukrainian local research universities forming

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Higher education in Europe is constantly «under powerful reform pressures», as M. Kwiek noted [20], requiring new approaches and measures in the policy, governance, management and funding. According to H. Pechar & L. Andres [27], in higher education is always exist an opposition between actions «in order to increase the knowledge and skill capacity of the labor force» and the difficulties to attract significant financial resources to expand the network of higher education institutions, to provide quality education and effective research and development (R&D).

Changes in assessment and management of R&D were important components of national reforms of higher education systems of many developed countries. Very important change in university funding was to provide the concept of Performance-based funding systems [16; 24]. The increasing cost of research and higher education, growing competition between countries and universities have resulted in the needs for national governments to provide the tools of Performance-Based Funding [15; 16; 18], The Responsible Research & Innovation approach [21; 31], different forms of New Public Management [30], adopted to private and public universities. As D. Hicks noted [16], Performance-Based Funding Systems could (or should) be presented in terms of «productivity, public reliance on private markets, a stronger service orientation, devolution to sub-national government, increased capacity to formulate and evaluate policy, enhanced accountability» in accordance to D.F. Kettl [19] ideas.

While Higher Education and Research Systems of many countries were significantly changed during last decades, used the new methods and means of management in universities, Ukraine had its own difficult way of transformations. Ukrainian higher education could not stay away the Bologna Process, the Lisbon Declaration, the introduction of the International Standard Classification of Education in the form of relevant national standards and other measures of integration into the European Higher Education Area.

However, the basics of Ukrainian university science management system in the last decades remained almost unchanged, focused on old dichotomy interpretation of basic and applied research, which is doubtful [3; 6]. There is no use of contemporary notions about knowledge productions [23; 32], and the role of phronetic research [13], and knowledge management [22]. Ukrainian managers of higher education and science sometimes talk about H. Etzkovitz' Triple Helix concept, but

not about the university research groups evolution as a stage of spin-offs forming [1; 9].

For 25 years since Independence of Ukraine the university science was not fully powerful and reliable basis to form a new society and innovation system, because a part of this period scientists often had to adapt to economic realities and had deal with their own financial and social problems instead of serving the Science. Total number of persons professionally performing scientific and technical work in higher education sector of Ukraine fell from 26.1 thousand in 1991 to 9,6 thousand in 2005 [1] and was continued to decrease. Subsequently, the number of researchers in the higher education sector dropped from 8 754 persons in 2005 to 5 272 in 2015 [29].

Reducing the number of full-time researchers in universities was due primarily to significant changes in the industry and the transformation of Ukraine's economy as a whole. Implementation of universities R&D results largely depends on enterprises demands and their innovative activity. According to Eurostat [12], 48,9% of all enterprises in the EU-28 reported innovation activity during the period 2010-2012. The lowest shares were recorded in Bulgaria (27,4%), Poland (23,0%) and Romania (20,7%). But according to State Statistics Service of Ukraine [29], for Ukraine this indicator was 13,8% in 2010, 16,2% in 2011 and 17,4 in 2012.

Table 3.2. Share of enterprises introduced innovations [29]

2001	2003	2005	2007	2009	2011	2013	2014	2015
14,3	11,5	8,2	11,5	10,7	12,8	13,6	12,1*	15,2*

*excluding the temporarily occupied territories of the Autonomous Republic of Crimea, the city of Sevastopol and part of the anti-terrorist operation zone.

One of the most important factors of the rapid reduction of scientific productive forces in Ukrainian universities in the early 90s was a low ability to promote their R&D results for industry and business, reflected in indicators of enterprises share that introduced innovations, as shown in the Table 1 according to State Statistics Service of Ukraine [29].

Ideas to use the scientific labor potential in higher education mainly for teaching turned as a «social contract», according to which university scientists have not high, but stable salary, they focused on teaching but this profession did not require high research performance. As P. Altbach [4] noted: «Teaching responsibilities must be sufficiently limited to allow time and energy for research». However, if university professors have no stimulus to do high scientific results, the «optimum» for

them is to perform research only for teaching and to get scientific degrees and academic titles. There is the powerful research potential of Ukrainian universities, but it need a new approach to policy and management to get better R&D results.

Table 3.3. Teaching & research staff of universities in 2015 and the total number of publications in Scopus until 04.04.2016 [3; 10]

University	Teach. Staff	Doctors/ Candi- dates	Resear- chers*	Publ. in Scopus 4.04.16
Taras Shevchenko national university of Kyiv	2 517	529/ 1670	749	13 453
National technical univ. of Ukraine «Igor Sikorsky Kyiv polytechnic institute»	2 456	279/ 1264	166	5 230
Lviv Polytechnic national university	2 011	324/ 1160	89	3 578
Ivan Franko national university of Lviv	1 884	203/ 1107	78	5 358
V.N. Karazin Kharkiv national university	1 602	237/ 792	224	7 614
National technical university «Kharkov polytechnic institute»	1 545	56/ 75	374	2 165
Odessa I.I. Mechnikov national university	1 259	140/ 654	241	2 634
Oles Honchar Dnipropetrovsk national university	1 252	167/ 686	145	2 921
Yuriy Fedkovych Chernivtsi national university	1 155	133/ 685	29	2 311
Vasyl Stefanyk Precarpathian national university	1 028	112/ 654	10	348
Sumy state university	744	85/ 525	27	1 272
Kharkiv national university of radioelectronics	595	73/ 325	107	1 892

*Research staff also include scientists, some of them are doctors and candidates of sciences

Despite the difficult path of transformations, leading Ukrainian universities kept and updated high enough workforce of scientists. Table 3.3 show the staff of some universities, which published more than 100 articles in Scopus journals between 26.03.2015 and 04.04.2016 according to EuroOsvita.Net and our studies [3; 10]. According to the data, leading universities of the country have strong workforce of scientists, but many of whom were not creating scientific results that can be quite competitive, as shown by the indicators of publications in Scopus journals.

There is no Ukrainian statistics for university R&D performance in the calculation on researchers in full-time equivalent. According to Frascati Manual [25, p.166]: «The Full-time equivalent (FTE) of R&D personnel is defined as the ratio of working hours actually spent on R&D during a specific reference period (usually a calendar year) divided by the total number of hours conventionally worked in the same period», however, it is not easy to apply this principle.

For a simplified estimation, we have assumed [2] that R&D results of public university teachers in the country can be presented in FTE with coefficient of 0,5, for graduate students – 0,67; for doctoral students and researchers – with coefficient 1. For these reasons, we have identified the following indicators in the table 3.4.

Table 3.4. Researchers in FTE of some Ukrainian universities

University	2012	2013	2014	2015
Taras Shevchenko national univ. of Kyiv	4028	3588	3574	3123
NTUU «Igor Sikorsky Kyiv polytech. inst.»	2496	2291	2200	1794
Lviv Polytechnic national university	1801	1741	1623	1459
Ivan Franko national university of Lviv	1700	1646	1599	1550
V.N. Karazin Kharkiv national university	1689	1573	1563	1352
NTU «Kharkov polytechnic institute»	1854	1707	1507	1217
Odessa I.I. Mechnikov national university	1360	1334	1255	1157
Oles Honchar Dnipropetrovsk national univ.	1241	1189	1066	977
Yuriy Fedkovych Chernivtsi national univ.	973	947	867	734
Vasyl Stefanyk Precarpathian national univ.	901	860	876	781
Sumy state university	688	717	702	593
Kharkiv national univ. of radioelectronics	769	713	684	581

Using estimates of the number of researchers in full-time equivalent, we were able to assess R&D results of universities, including the number of publications in Scopus journals per researcher in FTE (table 3.5).

Table 3.5 show, that universities, which are among the leaders between others in terms of Scopus publications per researchers in FTE, have low results: only 6 universities - at the level of 0,3-0,6. Our research show [2; 3] low publications level in Scopus journals per researchers in FTE for vast majority of Ukrainian universities. The same are low the general indicators of Scopus publications: in the period of 26.03.2015 – 04.04.2016 scientists of only 28 universities had more than 50 published articles, only 12 had more than 150. What's the matter?

Table 3.5. Scopus publications per researchers in FTE

University	2012*	2013*	2014*	2015*
Taras Shevchenko national univers. of Kyiv	0,38	0,27	0,14	0,39
NTUU «Igor Sikorsky Kyiv polytech. inst.»	0,14	0,18	0,22	0,26
Lviv Polytechnic national university	0,17	0,14	0,19	0,33
Ivan Franko national university of Lviv	0,20	0,18	0,24	0,26
V.N. Karazin Kharkiv national university	0,21	0,28	0,40	0,43
NTU «Kharkov polytechnic institute»	0,09	0,08	0,12	0,15
Odessa I.I. Mechnikov national university	0,07	0,10	0,11	0,13
Oles Honchar Dnipropetrovsk national univ.	0,14	0,11	0,17	0,13
Yuriy Fedkovych Chernivtsi national univ.	0,11	0,18	0,29	0,32
Vasyl Stefanyk Precarpathian national univ.	0,03	0,03	0,06	0,11
Sumy state university	0,25	0,20	0,35	0,38
Kharkiv national univ. of radioelectronics	0,33	0,18	0,28	0,57

2012* – from 06.04.2012 to 04.04.2013;

2013* – 04.04.2013-27.01.2014;

2014* – 27.01.2014-26.03.2015;

2015* – 26.03.2015-04.04.2016.

Our hypothesis consist in following: Ukrainian policy and management does not create the proper regulatory, economic and social instruments to achieve by university scientists the high level basic indicators of R&D results.

1. Our studies of regulatory documents and their implementations [1; 3] give reason to believe that today for Ukrainian universities the most meaningful indicators are the number of publications and citations in Scopus and Web of Science journals, and R&D funding received from industry and entrepreneurship, foreign and home grants. Today the total number of publications does not describe the quality of scientific results, because most of domestic journals not provided a rigorous peer review [3].

According to the document of European Commission [11, p. 26]: «while natural and life scientists write books, their primary outlet is peer-reviewed journal articles. Engineering scientists primarily publish in conference proceedings although they also publish in journals and design prototypes. Social scientists and humanists have a wide range of outputs of which books are important sources of communication, while the arts produce major art works, compositions and media productions».

Statistics of Ministry of Education and Science of Ukraine [3] also use these indicators, but the quality of books and conference proceedings are often doubtful due to weak peer review.

2. There are no regulatory and administrative documents of Ukrainian policy and management which would put the university status and the

national university status in strict dependence on the high level of main R&D results, defined in [1].

3. There are no regulatory and administrative documents which would set the State budget funding of public universities education in dependence on high level of main R&D results.

4. The salary of university staff in the country usually not put in strict dependence on the high level of R&D results.

Ukrainian Higher Education Science is not the same in the different fields of knowledge and for different universities. There is a post-soviet stagnation trajectory, mostly in Social sciences and Humanities (SSH), but some progressive scientists were able to find their place in the World Science. The essential part of our approach to create basics for reforming the Ukrainian university science should be the study of R&D performance and results of SSH.

Table 3.6. The place of Ukraine in Scopus / the number of publications; according to Scimago Journal & Country Rank [28]

Subject areas	2010	2011	2012	2013	2014	2015
All subject areas	43/ 7553	45/ 8268	45/ 9261	45/ 9868	46/ 10043	46/ 8868
Arts and Humanities	78/ 17	63/ 42	64/ 50	65/ 63	55/ 124	59 /87
Business, Management and Accounting	78/ 15	72/ 22	82/ 17	71/ 37	69/ 41	68/ 45
Economics, Econometrics and Finance	71/ 16	71/ 19	32/ 256	18/ 554	18/ 630	17/ 586
Social Sciences	79/ 68	77/ 88	75/ 97	54/ 352	53/ 385	56/ 314

According to table 3.6, Ukrainian Economics, Econometrics and Finance and Social Science demonstrate the ability to rapidly growing the number of publications in Scopus journals and change the approach to do research performance. We think it is mostly result of science management actions and methodic reconstructions of R&D performance in order to publish in international peer reviewed journals, than quick «deepening» of scientific inquiry, because there were no additional workforces, State funding or preferences. Of course, the registration in 2013 in Scopus of Ukrainian journal «Economic Annals-XXI» played a role, but scientists were ready to present these results. In our opinion, Ukrainian SSH could and should be further reformed not only in order to do more prestigious publications, but in turn to the wider contexts of the World knowledge and to stronger research culture.

It is a social and cognitive regularity, that there is a different personal capacity to produce high level R&D results, to prepare and publish scientific articles. Every university has a group of leading scientists among others, but not every university in Ukraine provide focused support to high level R&D performance. Table 3.6 show that some of Ukrainian universities started to manage the process of growing the Scopus publications. It is another socio-economic regularity that competition among Ukrainian universities not simply exists, but should increase if market forces will grow, and State support will turn to Performance-Based Funding System. In these conditions, it could be possible to form local research universities [3; 4] on the base of some of Ukrainian higher education institutions. According to P. Altbach [4, p. 130]:

«The academic community in the local research university can communicate with scholars abroad and can participate in the global scientific community. ... Local research universities ... understand the specific problems of the country in which they are located and can focus on these themes. ... Research universities can bring international scientific trends to bear on local problems and contribute to the development of domestic industry, agriculture and society ... they have a responsibility to disseminate research and analysis in local languages».

Our research suggests that among Ukrainian higher education institutions the leaders still very far from world-class universities [5], but year-to-year their R&D performance increased. Ukrainian experiments to provide in 2009-2010 the research university status to some universities were failed, because:

- there was not enough funding, planning and management to support the high level R&D performance; there was proposed to provide the status immediately but not as result of projects realization [1];
- according to A. Oleksiyenko: «The country has failed to retain top faculty members and students, to create attractive conditions for academic performance, and to support effective regulatory mechanisms that would enhance competitiveness, encouraging the adoption of world-class standards and practices» [26];
- according to M. Hladchenko: «Ukrainian government used the idea of the 'research' university as an opportunity to receive loyalty of higher education institutions in elections held in 2010. ... the government expected beneficial results from universities in knowledge transfer and third party funding» [17].

Also by these «Ukrainian experiments» actually verified that focus only on creating disciplinary-oriented scientific and educational centers of excellence are not always proved effective for the transformation of the institution into the world-class research university.

We believe leading Ukrainian higher education institutions could achieve the level of local research universities, defined by P. Altbach [4] and adopted in our studies [2; 3]. Despite the negative experience, there are objective factors of competitive science development at Ukrainian universities and methodological groundwork that can be used for the conditions of targeted state support and competent management.

It was noted [3] the leading researchers and research groups factually disseminated in university, but they make up a distributed «research core» of university, that should be identified and personally supported. Our approach to form the Research Core of local research university is an alternative to ideas of disciplinary scientific and educational centers: all leading researchers and research groups should be oriented on high R&D results and supported by funding.

Another side of the local research university – regionally oriented R&D groups with focus on competitive developments for local industry and entrepreneurship. There are R&D groups, that in accordance to H. Etzkovitz [9] do competitive developments and form «quasi-firms». In these aspects, the concepts of the local research university turn to the ideas of entrepreneurial universities [7; 8; 14].

In conclusion, it could be noted, that the Science of Ukrainian Higher Education System are reforming partly, mainly in universities, where scientists and managers were able to provide high quality education and R&D results. There are remaining unresolved economic and financial problems. Ukrainian authority very slowly changing the licensing and accreditation of higher education institutions, and to reform procedures on awarding of scientific degrees and academic titles to high R&D performance standards. One of the main problems is high quality peer review without conflicts of interests etc. However, moving towards European Union standards not only for education but also for R&D should increase competition and responsibility, and support to form local research universities in Ukraine.

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Transliteration

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Section 4

Instrumental support of innovative solutions

4.1. Methodical approach to the management of innovative development

Strokovych G.V.

The issue of innovative development is becoming increasingly important in terms of the spread of globalization. The formation of the phenomenon of «knowledge economy» indicates that the basis for the effective management of innovative development is the direct knowledge that contributes to the activation of innovative processes in society. Therefore there is a need to improve methods of innovative development taking into account current realities. The researches of such scholars as M. Boyarsky [3], N. Chukhrai [11], P. Drucker [1], A. Grebeshkova [9], O. Iastremska [2, 13], A. Kyzym [2], T. Lepeyko [3], A. Malyarchuk [9], O. Melnychuk [7], A. Nalyvayko [9], V. Ponomarenko [2], A. Prosovych [11], B. Santo [6], B. Stadnyk [7], G. Starchenko [8], L. Shulgina [12], G. Vereshchagina [13], M. Yohny [7], B. Yukhimenko [12] and others are devoted to the issues of innovative development.

In a globalized economy and the integration of Ukraine into the European Union with a view to increase the efficiency of innovative development, the analysis of the Global Innovation Index (The Global Innovation Index), calculated according to the methodology of the international business school INSEAD, France seems reasonable [14]. A recent study for 2016 includes 128 countries, where Ukraine occupies the 56th place in the rating of innovation among others, the received index is 35,7 (according to a 100-points scale). In comparison with 2015 (the 64th place) the position of the country has improved significantly, indicating the increased efficiency of innovation. The rating leaders are Switzerland (66,3), Sweden (63,6) and the UK (61,9). Such post-Soviet countries as Estonia (the 24th place), Latvia (the 34th place), Lithuania (the 36th place), Russia (the 43^d place), Moldova (the 46th place) have much more better condition for developing innovation and Armenia (the 60th place), Georgia (the 64th place) and Azerbaijan (the 85th place) have much worse positions [14].

Doubtless for the development and innovation is the thesis that the success of the economy is connected with both the presence of innovative

capacity and with its application [14]. The Global Innovation Index is composed of two groups of indicators: the available resources and the conditions for innovation (Innovation Input), including institutions, human capital and research; infrastructure; development of internal market; business development and practical results of innovation (Innovation Output), within which the development of technology and the knowledge economy are analyzed and the results of creativity [14]. Ukraine occupies the 76th place (38,9 points) for the Innovation Input and the 40th place (32,5 points) on Innovation Output.

According to the information provided, the strengths of Ukraine in 2016 include: ease of starting a business, expenditure on education, gov't expenditure / pupil, secondary, tertiary enrolment, graduates in science & engineering, ease of getting credit, females employed / advanced degrees, GERD financed by abroad, patents by origin / bn PPP \$ GDP, utility models by origin / bn PPP \$ GDP, ICT services exports, industrial designs by origin / bn PPP \$ GDP.

The weakest elements that hinder the implementation and dissemination of innovation and reduce the efficiency of innovation are: political stability & safety, regulatory quality, rule of law, ease of resolving insolvency, government's online service, gross capital formation, GDP / unit of energy use, state of cluster development, FDI net inflows, growth rate of PPP \$ GDP / worker, ICTs & business model creation. Therefore, to address these issues enterprises should take appropriate decisions that will both increase their innovation activity and also the introduction and spread of innovation.

The basis of the effective decision-making regarding innovative development is a quantitative assessment of its actual results. Therefore, the methodological approach evaluating the effectiveness of innovative development, approved at 41 machine-building enterprises of Kharkov region is proposed. Let us consider in detail the contents of the stages of methodological approach.

Stage 1 – the separation of cluster-uniform groups of machine-building enterprises. The purpose of this phase is the distribution of the investigated entities into disjoint groups (clusters), ensuring maximum proximity (similarity) at selected characteristics between enterprises of one group and the maximum difference between the groups.

As a part of the implementation of this phase, the analysis of the literature on economic and mathematical modeling is made, a result of which indicates that one of the important conditions for building economic and mathematical models is homogeneity of initial set of statistical data.

Uniformity of data means that there is no strong break of trends and abnormal observations. When working with spatial data sets, often the

cause of their heterogeneity is the presence of several groups of objects that are significantly different. The previous procedures of economic and mathematical models construction include grouping that provides problem solution. Statistical clustering involves separation of the universe of phenomena or objects into homogeneous groups with individual characteristics. To get more persistent integration of data it is appropriate to use cluster analysis methods that concern to the methods of multivariate clustering and yield the outstanding groups of objects.

Significant advantages of cluster analysis over other statistical methods of grouping are: cluster analysis allows to separate objects according to one sign, and on the set of features; cluster analysis does not impose any restrictions on the type of the objects and allows us to consider a lot of output data of any nature; cluster analysis allows to examine a considerable amount of information and dramatically reduce, compress large amounts of socio-economic information, to make it compact and visible.

The main limitations of cluster analysis are the five requirements to be met by the raw data of the study: indicators should not correlate with each other; indicators should not contradict the theory of measurements; distribution of performance should be close to normal; performance must meet the requirement of «stability», defined as the absence of influence of random factors on their values; the sample must be homogeneous, i.e. not contain random «emissions».

The criteria for the implementation of clustering are the indicators characterizing the efficiency of the entity. Analysis of modern methodological approaches and guidelines for the financial analysis of companies shows that the efficiency of their operation in general is evaluated using ratios of profitability and resources turnover. The following parameters are proposed to be used for clustering:

- return on assets – shows the amount of net income received by enterprises per one unit of value of its assets and determines the overall return of the use of property and capital of the company;
- assets turnover – describes the intensity and rate of assets turnover and is defined as the ratio of net income from sales to the average for the period of an enterprise assets value; acts as an important indicator of business activity of a market participant.

In the process of selection and justification of clustering method, a comparative analysis of existing methodical set of tools is made. Thus, cluster analysis methods can be divided into two main groups: hierarchical (natural) and non-hierarchical (artificial). The feature of hierarchical method is that the number of clusters is not defined in advance, so this group of methods is called natural clustering. These methods are

based on the assumption of the existence of cluster of different orders in the information space that build the full tree of inserted clusters. The advantage of this method is its visibility and the opportunity to get a detailed picture of the structure of data. Disadvantages include limitation of information, the complexity of measuring the proximity of objects and inflexibility of obtained classifications.

However, it should be noted that for the large number of observations the hierarchical methods of cluster analysis are unsuitable. In such cases, the non-hierarchical methods that are the iterative methods of splitting the original population should be used. In the process of distribution, the new clusters are formed as soon as the rule of stop is not fulfilled. Thus, non-hierarchical clustering means the division of the set of data into a number of separate clusters.

Consistent use of both clustering methods can reduce the negative impact of these deficiencies result and techniques to get the most reasonable clustering. That is why it is advisable to use natural methods of clustering to justify the number of clusters and methods of artificial clustering for more adequate distribution companies between clusters.

As a part of the cluster groups formation the direct allocation of disjoint homogeneous groups of machine-building enterprises is held.

The implementation of the next step involves the standardization of the input data set and determination of the number of cluster groups using natural methods of clustering that involves two procedures.

In order to meet the requirements of indicators used in cluster analysis the procedure of normalization and standardization of the original space that ensures the normal distribution law and allows to use the indicators with different measurement units is carried out. All the calculations are made in private Statistica 8.0, ensuring the accuracy of their conduct.

The allocation of the number of clusters using natural methods of clustering. Under the natural means of clustering, a series of algorithm of arranged data, the visualization of which is provided by means of graphs, is meant. Graph built during the implementation of hierarchical clustering algorithm is called dendrogram. Dendrogram represents the mutual relationships between the objects of a given set. To determine the number of clusters in a built dedrogram, the ratio of the lengths of connections between objects is calculated as follows:

1. Relations of dendrogram built on the set of units are arranged in decreasing order of their length.
2. The ratio between the lengths of neighboring connections is evaluated according to the following formula:

$$i_2 = \frac{d_1}{d_2}, i_3 = \frac{d_2}{d_3}, \dots, i_{\omega-1} = \frac{d_{\omega-2}}{d_{\omega-1}}, \quad 4.1$$

where d_1, d_2, \dots – ordered links length;
 i_1, i_2, \dots – the ratio of the links length.

3. Searching of i_k , of the value for which the following ratio is performed:

$$i_k < i_{k+1} \text{ for } k = 2, 3, \dots, \omega - 1 \quad 4.2$$

According to this ratio k clusters are considered as an optimal allocation.

Construction of dendrogram of machine-building enterprises under the study is performed using package Statistica 8.0. fig. 4.1 shows the dendrogram of distribution of machine-building enterprises according to the homogeneous cluster groups.

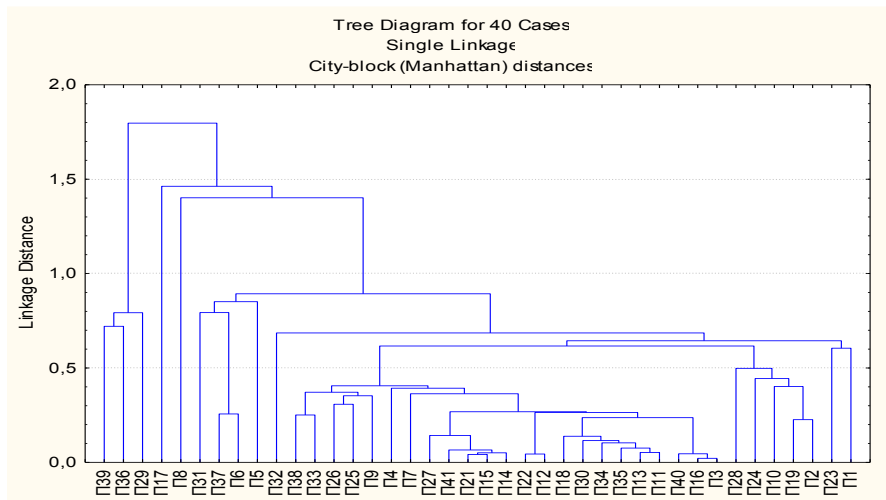


Figure 4.1. Dendrogram of machine-building enterprises distribution

According to the results of cluster analysis (fig. 4.1) the calculations by formula are made (4.1):

$$i_2 = \frac{1,8}{1,45} = 1,24, \quad i_3 = \frac{1,45}{1,35} = 1,07, \quad i_4 = \frac{1,35}{0,9} = 1,5$$

Correlation (4.2) is performed for 3 clusters. Therefore, it is advisable to distinguish three cluster groups of enterprises that will provide the homogeneity of enterprises in the middle cluster.

The next step is to use the artificial methods of clustering according to the management efficiency of an enterprise innovative development. Analysis of the literature led to the conclusion that the most common method is non-hierarchical clustering method of k-means. Popularity of this method lies in transparency and unambiguous algorithm results. The method of k-means refers to a group of iterative methods.

Based on the algorithm and using Statistica 8.0 selection of three cluster groups of enterprises for 4 years was conducted. The results are presented in table. 4.1.

Table 4.1. Composition of cluster groups for 2011-2014.

Cluster	2011	2012	2013	2014	Persistent core
1	П1, П4, П5, П10, П17, П23, П24, П26, П28, П29, П35, П36, П37, П40	П1, П4, П5, П17, П23, П26, П29, П36, П31, П39	П1, П29, П36, П39	П5, П6, П8 П17, П29, П31, П36, П37, П39	П29, П36
2	П8, П31	П3, П8	П4, П5, П6, П8, П10, П15, П19, П24, П28, П31, П32, П37, П38	П1, П2, П4, П9, П10, П14, П15, П19, П21, П24, П25, П26, П27, П28, П32, П41	–
3	П2, П3, П6, П7, П9, П11, П12, П13, П14, П15, П16, П18, П19, П21, П22, П25, П27, П30, П32, П33, П34, П38, П39, П41	П2, П6, П7, П9, П10, П11, П12, П13, П15, П16, П19, П18, П21, П22, П24, П25, П27, П28, П30, П33, П34, П35, П38, П39, П40, П41	П2, П3, П4, П7, П9, П11, П12, П13, П14, П16, П17, П18, П21, П22, П23, П25, П26, П27, П30, П33, П34, П35, П40, П41	П3, П7, П11, П12, П13, П16, П18, П22, П23, П30, П33, П34, П35, П38, П40	П7, П11, П12, П13, П16, П18, П22, П30, П33, П34, П41

From table 4.1 it can be seen that the constant movement of enterprises from one cluster to another took place over this period. Only a third of companies did not change the cluster group during these 4 years. And the biggest differences in cluster groups took place in 2013. The resulting cluster groups for the period of 2013-2014 to a greater extent correspond to the real economic situation in the country and machine-building industry, so it is proposed for further calculations to use the homogeneous groups of 2014.

The adequacy of the results of cluster analysis is checked on the basis of discriminant analysis. Discriminant analysis is a multivariate statistical method that allows to determine the differences between two or more groups of similar objects on several variables simultaneously.

According to the results of calculations (fig. 4.2) one can make a conclusion about the stability of obtained cluster groups i.e. clustering of enterprises in terms of the quality of their operation meets the existing regularities in a sample. The quality of clustering obtained is confirmed by out of the common value of the average estimates for indicators that form the basis of the grouping.

		Classification Matrix (дискриминантный 20)			
		Rows: Observed classifications			
		Columns: Predicted classifications			
Group	Percent	G2	G3	G1	
	Correct	p=,33333	p=,33333	p=,33333	
G2	100,000	16	0	0	
G3	100,000	0	16	0	
G1	100,000	0	0	9	
Total	100,000	16	16	9	

Figure 4.2. The classification matrix

According to the results of clustering, 3 groups of enterprises, the efficiency of innovative development of which can be characterized as follows, were formed:

- cluster 1 – includes 9 enterprises, operation of which is characterized by the highest level of management efficiency of an enterprise innovative development. Thus, these peculiar entities have a maximum profitability and return on capital and property use, while keeping a high rate of assets turnover, indicating the efficient costs structure and in general characterizes the innovative development of an enterprise of a given cluster as a high one;

- cluster 2 – includes 16 enterprises that are characterized by an average assets turnover rate and have the average level of profitability i.e. return on operational capital and assets. This situation indicates the insufficient use of existing innovative potential by the enterprises and provides the opportunity to determine the level of functioning of enterprises of this cluster as the average;

- cluster 3 – includes 16 enterprises that have a low level of assets turnover and low or even zero profitability, indicating the poor quality of their operation. A significant proportion of enterprises of this cluster

(40% of total sample under the study) confirms a deep systemic crisis in engineering and justifies the need to develop effective mechanisms for raising the level of innovation development of entities in this industry.

The main direction of the second stage of methodical approach to the management of innovative development of enterprises is to obtain an appropriate integrated assessment. When building a system of indicators evaluating the effectiveness of innovative development it is necessary to ensure the implementation of the following principles:

- complexity – means that the evaluation of the effectiveness of innovative development management as a whole should combine the highlighted features the evaluation of group indicators with none of them to be excluded;
- sufficiency – means that a set of indicators must reflect the necessary and sufficient information on the efficiency level of innovative development management;
- dynamics – requires a retrospective evaluation over a definite period.

Accordingly, it is proposed in order to build a reasonable system of indicators to use informal methods of filtration – a comparative analysis of literature.

In conditions of a significant reduction of the competitiveness of domestic economy to ensure the effectiveness of innovative development management, an innovative potential of an enterprise, which determines the level of formation and efficiency of an enterprise innovative business opportunities [for generalized 2; 5-6] plays an important role. Analysis of literature on the research of efficiency of an enterprise innovative activity [3; 7-13] allowed to distinguish the following groups of indicators: sale of innovative products – make it possible to estimate the share of innovative products (by their types) in an enterprise sales volume; implementation of innovations – determines the level of implementation of innovative equipment, technologies, etc. at an enterprise. Information support of an evaluation indices system development for selected groups is a statistical form of survey of innovation activities of industrial enterprises (Form № 1 – innovation (annual)).

According to the structural and meaningful filling of the form and based on the analysis of the literature, it is advisable to develop a list of indicators evaluating the level of innovative potential of an enterprise that is presented in table. 4.2.

The next step is the calculation of the integral index of evaluation of the level of an enterprise innovative potential use. For the evaluation, the method of calculation of taxonomic index is proposed to be used. Calculations of integral index are made for each type of clusters (see table 4.3).

Table 4.2. List of indicators evaluating the level of innovative potential of an enterprise

Grouping Sign	Indicator	Symbol	Index Calculation Formula
1. Indices of innovative products sale	Ratio of sales of innovative products	x ₁₁	The ratio of innovative products sale to the total sales
	The coefficient of innovative products (services) sale that are new for a particular market	x ₁₂	The coefficient of innovative products (services) sale that are new for a particular market
	The ratio of innovative products (services) sale that are new to a particular market to the total sales	x ₁₃	The coefficient of innovative product (service) sale, which is new only for the enterprise being analyzed
2. Indicators of innovations introduction	The coefficient of implementation of innovative machinery, equipment, appliances, apparatus, etc.	x ₂₁	The ratio of a number of implemented innovative machinery, equipment, appliances, apparatus, etc. to the total number of implemented machinery, equipment, appliances, apparatus, etc.
	The coefficient of degree of technology novelty	x ₂₂	The ratio of a number of innovative technologies to all new technologies in Ukraine

Table 4.3. The value of the integral index of innovative potential (I_{VPT}^{innov})

Enterprise	2010	2011	2012	2013
JSC «Electric machine»	0,34	0,36	0,36	0,36
JSC «FED»	0,25	0,28	0,23	0,22
ETK «ElKor»	0,22	0,21	0,15	0,15

For the integral index of the level of innovative potential of an enterprise it is proposed to use a verbal-numeric scale by Harrington, that can be grounded as follows: has a universal nature and is widely used for a qualitative gradation of quantitative criteria in assessing economic processes; is a common tool of transformation of qualitative characteristics of a probabilistic nature into quantitative ones; makes it possible to establish a degree of quality intensity of an enterprise inner potential use and economically adequate interpret the results; grading scale allows to get a balance between an accuracy of parameters' estimation and a validity of these estimates and the numerical values of the limit values of the Harrington scale obtained when analyzing and processing a large amount of statistical data [13].

The study proposes to undertake the following economic interpretation of the level of an enterprise innovative potential:

- *low level* – is characterized by the insufficient level of innovative products sale and innovation, lack of interest of an enterprise management and staff in the implementation of innovations, etc.;
- *average level* – indicates the presence of negative trends in an enterprise activity that reduces the level of implementation of innovative products and innovations, occasional implementation of innovations, etc.;
- *high level* – reflects the ability of an enterprise to provide a sufficient level of implementation of innovative products and innovations, demonstrates an active innovative policy.

Taking into account the fact that the value of taxonomic index with which the help of which the level of an enterprise innovation potential is estimated, changes from 0 to 1, and in accordance with the values of gradation of verbal-numeric scale by Harrinhton [13], it is proposed to use the following scale of ranges of an enterprise innovative potential use (table 4.4).

Table 4.4. Scale of ranges of an enterprise innovative potential

The range of changes of the integral index of the level of an enterprise innovative potential use	The level of an enterprise innovative potential use
$0,00 \leq VP_t \leq 0,36$	Low
$0,36 < VP_t \leq 0,64$	Average
$0,64 < VP_t \leq 1$	High

The economic content of a certain level of innovative potential is presented in table 4.5.

Table 4.5. The economic content of a certain level of innovative potential

Level	The economic interpretation
Low	There is a condition at an enterprise when it has a good innovative potential, which is characterized by a high level of implementation of innovative products and innovations
Average	There is a situation when an enterprise demonstrates a sufficient innovative potential, which is characterized by an average level of implementation of innovative products and innovations
High	The situation in which an enterprise shows a low innovation potential, which is characterized by an average level of implementation of innovative products and innovations

A set of managerial decisions depending on the innovation potential of an enterprise is presented in table 4.6.

Table 4.6. A set of managerial decisions based on the level of innovation potential use

Level	Managerial decisions depending on the level of innovation potential
Low	The choice of prospects for further growth of the level of innovative potential use, which will facilitate the search and introduction of new technologies, equipment and innovative products
Average	The choice of prospects for further growth of the use of innovative capacity, which will encourage the implementation of new technologies and equipment, development of innovative products
High	The choice of prospects for further preservation of the level of innovative capacity, which will promote the relevance of technologies and equipment used at an enterprise; continuous improvement of products through the use of new knowledge

Thus, as a result of the research clustering of 41 machine-building enterprises of Kharkiv region was conducted; the range of changes of integrated evaluation values of an enterprise innovative potential was formed; an adequate economic interpretation that takes into account their substantial features in accordance with the objectives of the study was given; the diagnostics of innovative potential of a machine-building enterprise in terms of cluster homogeneous groups was held. The obtained results can serve as the basis for developing a set of decisions on the management of an enterprise innovative development.

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4.2. The managerial decision support in innovation cost management

Labunska S.V.

Current conditions and requests of global socio-economic environment provide a new conceptual framework of human development, that has determined the main priorities of innovation development of the world economy on the basis of scientific and technology platforms formation that ensures the most efficient use of natural, material and technical, financial, intellectual and human resources for the development of the productive

forces of national economies. In the context of harmonious entry into the global economy Ukraine faces tasks of ensuring international competitiveness of the country, which should be based on the use of the latest scientific researches, innovative approaches to the management and production processes and the convergence of intelligent life in the conditions of building partnership relations between regulatory agencies and actors of real sector economy. Innovative changes in the economic system create a so-called internal energy of economic growth [5]. These changes violate the achieved balance and equilibrium; however, create the basis for economic growth of transition to a new qualitative state. In this sense, generalized challenge of innovation activity management (IAD) is to ensure the transition to a new economic system balanced state.

Scientific publications of Aaker D., Atikson A., Wieser F., Kaplan P., Schumpeter J. and Cooper R., Kozachenko G., Rubinstein E., Golov S., Napadovskaya L., Cherep A. et al. perform the base for further researches aimed on definition and further development of conceptual frameworks of organizing and operating of a company cost management system.

While studying the common problems of cost management, the author agrees with the position Kozachenko G. who defines the main purpose of administrative influence on the object not as much the cost minimization and optimization of the process of economic activity but as improving the efficiency of their use [1 p. 8], a similar approach to management objectives follows the vast majority of scientists. Grishko N. considers the organization model of innovation activities cost management (IACM) and emphasizes the lack of scientific unified approaches to models, or at least concepts of operation at the level of strategic management at the same time as problems of innovation cost management are presented in a large number of scientific surveys.

The author follows the position that the most reasonable at the strategic level model is cost-forming factors model developed mainly by F. Scherer [6], R. Cooper [5], R. Kaplan and Atikson A. This model allows to generalize estimated aggregated expenditures, aimed to ensure the functional and structural manifestations of CMS and IACM as its subsystems. This structural dependence of the cost in strategic management should play a decisive role as it highlights the dependence of the current and future costs of the enterprise effectiveness of their previous (or planned for the future) periods using structural and performance leverage. Moreover, considered approach makes it possible to consider the conceptual basis for building IACM, distinguishing structural costs in accordance with the defined priority functional manifestations system. Thus, the total cost of the system must equal the total combined costs of the structural subsystems of accumulation.

Socio-economic system inherited tendency of recurrence of development. Noting the presence of both exogenous and endogenous cycles in the dynamic economies, most of scholars focus on the actions of inside company's system. For using a systematic approach in the study of economic phenomena and processes is the social and economic structure it is seen as the first level of the system and all other systems within their existence have a deep level of hierarchy. The common unifying foundation has a basics recognition of endogenous cycles of nature and concentration of causation on the internal dynamics of economic systems of each hierarchical order.

In the plane of innovation of the highest level of the hierarchy, national innovation system has a decisive influence on the internal dynamics of subordinate economies. Analysis of statistical indicators of the national NIS status and development shows that despite of the desire of Ukraine to gain innovative economic development, institutional environment does not provide sufficient incentives and economic leverage to innovative changes implementation, this conclusion is also confirmed by the rating of Ukraine's position regarding the innovation economy, shown in fig. 4.3, built by the author based on data of the World Economic Forum [7].

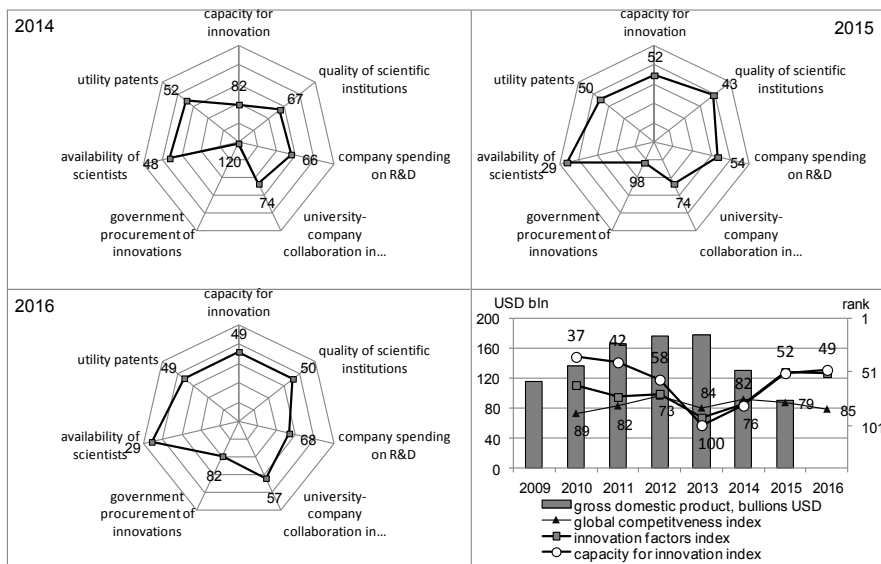


Figure 4.3. Global ratings of Ukraine by economy competitiveness innovative factors

The sizes of polygons, shown on fig. 4.3, underpin conclusion about the gradual increase of innovativeness of the national economy in 2016, as nearly all components of the indexes have positive trends, but their value compared with the characteristics of the most competitive economies in the world remain at a level that requires further improvement. Among the factors affecting the competitiveness of Ukraine's economy in 2016-2017 the experts of the World Economic Forum [8, p. 350] marked the following: corruption (14%), political instability (13,2%), inflation (11,9%), ineffective system of public administration (11,4%), lack of sources of financing (11,2%), poor ability to innovate (1,6%).

In the year of 2015 according to the State Statistics Service of Ukraine 824 (in relative terms – 17,3%) industrial enterprises (for comparison, in 2014 – 16,1% in 2011 – 16,2%) [4] were engaged in innovative activities. Despite of positive growth during 2008-2015, of innovative companies share, their number has not reached the level of 2000-2003's., and in 2014 again demonstrated a decrease, due to external negative factors effected business located on territories that by results of the conducted study [4] were related to industrialized and innovation active regions. Also, the negative trend of the structural development of industrial production in the context of increasing innovation and competitiveness of domestic enterprises is observed in the analysis of the absolute index and share of innovative products sales (SIP) in the total volume of industrial products (fig. 4.4).

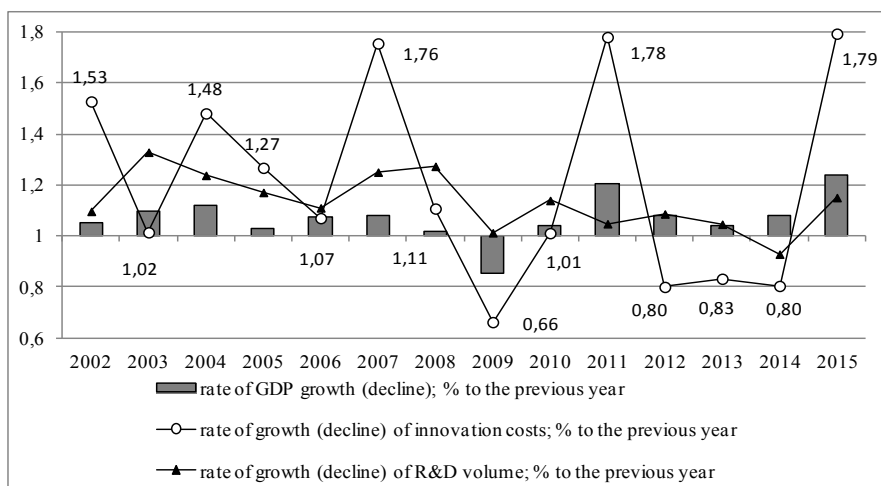


Figure 4.4. The rates of GDP, costs and results of innovations [4]

The analysis of the dynamics of the innovation costs share in GDP total describes existing innovative potential of the country and allows drawing conclusions about Ukrainian economy losing its competitive position in world markets over the past five years. So in 2014 this figure fell to 2,5%, in 2015 – fell to 1,4%. In 2015 the number of companies that have implemented innovative products decreased to 570 entities, the annual rate of the decrease (62,98%) was significantly ahead of the decrease in the total number of industrial enterprises (47,6%). The volume of innovative products sales was 23,1 billion UAH, most enterprises (86,0%) implemented the innovative products, not new to the market, but only for the company. Thus, in 2015 the proportion of SIP in industrial production dropped to a record from 2000 level – 1,4%, down from the previous year to 1,79 times, from the year of 2000 – in 6,7 times.

The increase in total spending on innovation in 2015 was accompanied by significant change in the structure of funding sources (fig. 4.5). The state budget financed 6,25 times less innovation costs than in previous year, the amount of own funds spent on innovation by business increased by 2,05 times and reached UAH 13 427 million, its share was in 97% in the total cost. In the structure of expenditures for R&D labour costs take the major part (in 2015 – 44,8%), while material costs, capital and other costs are respectively 28,4%, 2,8% and 24,0%.

Thus, own funds of enterprises in Ukraine had become almost the only source of funding innovations, due to this tendency the effectiveness of cost management as the only source aimed at ensuring innovation in the overall system of economic activities of enterprises as a priority.

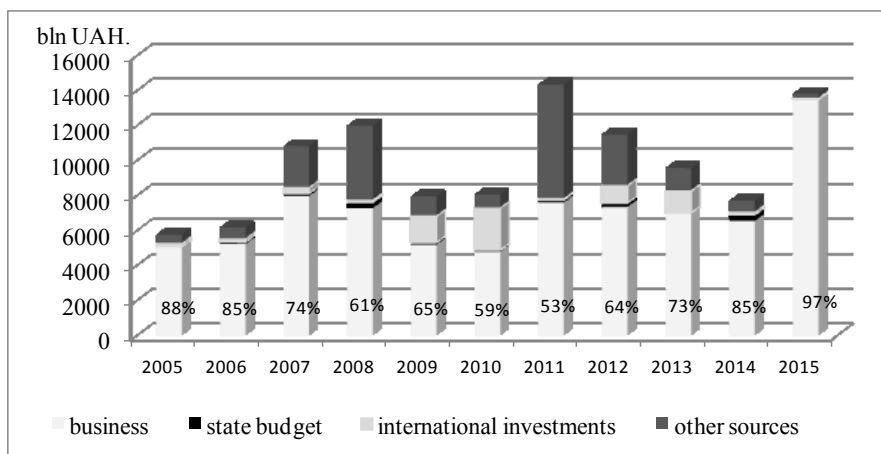


Figure 4.5. Dynamics of spending on innovations by funding sources [4]

Implementation and management company innovation activity is primarily settled in determining the direction of innovation development of the subject, based on the type of election innovative implementations based on its innovative capacity (IC), with the overall objective of the chosen innovation horizon managerial influence business plan, as to other types of economic activity and the formation of the overall portfolio of innovative projects that can be implemented in a specified period.

Innovation activity (IA) management on project basis can agree the goals and objectives within the innovation process and between IA and other types of enterprise's economic activity. Moreover its basics has direct signs of different approaches to the management of the impact, including the costs management and «construct» their level of operational management in general innovation activity cost management (IACM) which should be built on linear hierarchical managerial approach influence of the system of innovation activities management (IAM) and the overall management system that makes the coherent development of systems effective and maximizes consumption expenditures of innovation.

It has to be mentioned that the election towards innovative development involves primarily selection the kind of innovative implementations for which the company forms portfolio of innovative projects. The selection and implementation of such projects should be based on the development and analysis of scenarios, on the terms and commercialization the results of their use within a single innovation management system and its subsystem IACM with the company's peculiarities. The scenarios selection process and determination of the total innovation expenditures in the period visualized in fig. 4.6 and fig. 4.7. Compliance with the selection of innovative projects for implementation and determining total expenditure in the period is realized through consistent application grids selection process for the main unit (fig. 4.6).

The main objective of the company in the implementation of the processes defined in the first block (fig. 4.7) is to select the kind of innovation and innovative projects portfolio formation for each individual type of innovation that can be based on the implementation of assessment and analysis:

- directions, objectives and performance indicators of IA, based on the analysis of external factors and general economic objectives of the enterprise;
- level of innovation capability of the company (IC) that was formed in the previous period (method developed by the author [3]);
- maximum allowable expenditure, based on cost-sharing in the overall object-oriented cost management system of enterprise with the needs of other activities.

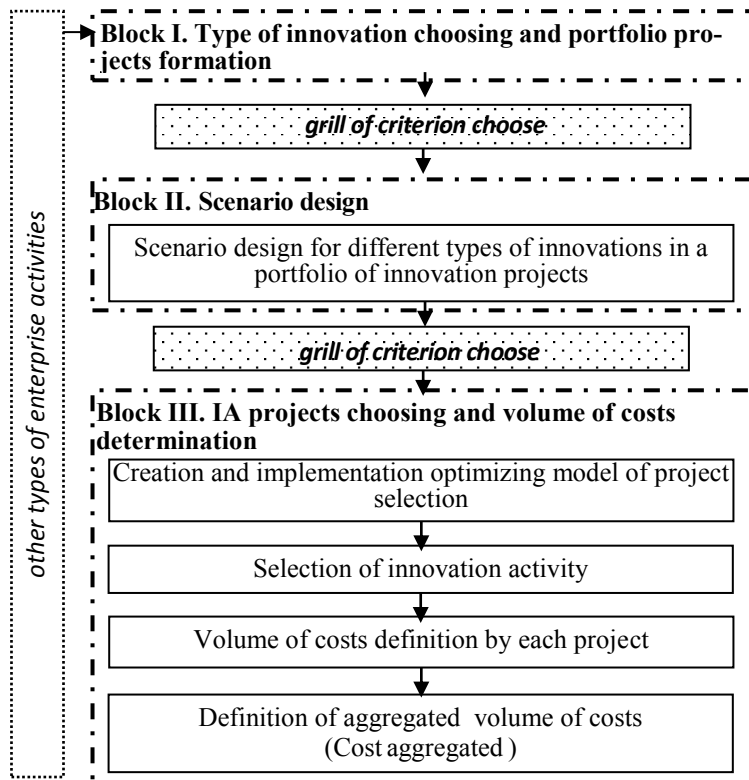


Figure 4.6. Scheme of innovation activity's volume of costs definition in the frame of project management

Enforcement tasks are implemented by the use of lattice selecting a variety of indicators of the implementation of management functions, aimed at the transfer of relevant characteristics of the system innovation in the new state of the results of innovation [3].

Formally, the overall process of innovative implementations selection (block 1, figure 4.6) can be described as a tuple:

$$U^x \{ \tilde{\eta}^0: (K_0, E_0, N_0, \Omega_0) \} \rightarrow P1 \{ \tilde{\eta}^1: (K_1, E_1, N_1, \Omega_1) \} \quad 4.3$$

where U – set of functional impact of the subject-oriented enterprise management systems, aimed at the set of objects, which makes dynamic response and transfer facilities in the new state at the end of the period;

$P1$ – grill selection parameters that characterize the new state of enterprise;

$\tilde{\eta}0, \tilde{\eta}1$ – feature that reflects the set of states of object-oriented plane (OOP) management influence at the beginning and at the end of the period;

$K1,0$ – OOP indicators that can be clearly reliably estimated on the basis of statements and selected on the basis of cognitive approach, systematization of which is made by processing the results of expert analysis of experienced professionals at the beginning and end of the period, respectively;

$N0, N1$ – OOP indicators that can be clearly and reliably estimated on the basis of statements and selected on the basis of normalized (formalized by the method) selection at the beginning and end of the period, respectively;

$E0,1$ – indicators that include verbal characteristics of the system and can be included in the proceedings of the plane, based on the use of fuzzy logic methods beginning and end of the period, respectively;

$\Omega0,1$ – the level of influence of random factors unpredictable threats of external and internal environment at the beginning and at the end of the period, respectively.

The final step of processes as summarized in fig. 4.6. is the process of determining the total cost that company has to accumulate for implementing each of the innovation according to its IC, which may vary depending on the innovation changes.

To determine and compare IC by product, process, organizational and marketing innovations, it is suggested to use matrix (Mic) or, for more detailed analysis, the expanded matrix (Mrisp):

$$\text{Mic} = \begin{pmatrix} \text{ICprod} \\ \text{ICpr} \\ \text{ICorg} \\ \text{ICmark} \end{pmatrix} \quad 4.4$$

where $\text{ICprod}... \text{ICmark}$ – indicators of innovation capability level of the company

$$\text{Mrisp} = \begin{pmatrix} \text{IPprod} & \text{IPpr} & \text{IPorg} & \text{IPmark} \\ \text{IOprod} & \text{IOpr} & \text{IOorg} & \text{IOmark} \\ \text{SPprod} & \text{SPpr} & \text{SPorg} & \text{SPmark} \end{pmatrix} \quad 4.5$$

where $\text{IPprod}... \text{IPmark}$ – signs of innovation potential;

$\text{IOprod}... \text{IOmark}$ – signs of innovation opportunities;

$\text{SPprod}... \text{SPmark}$ – level of safety power of the enterprise's economic security system

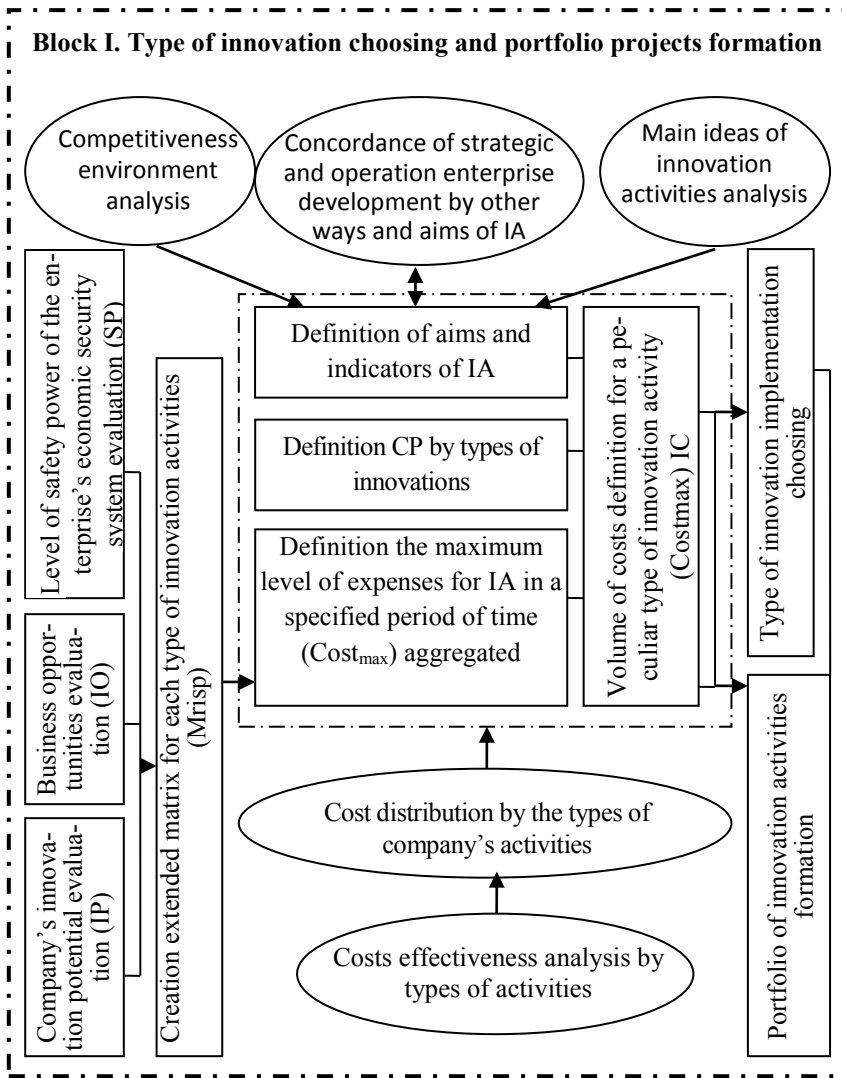


Figure 4.7. Scheme of type of innovation choosing and portfolio projects formation

So, by described set of parameters R_0 , the company may choose for themselves the desired direction of innovation development by type of innovation. Forming a portfolio of innovation projects should be conducted for each individual type of innovation. Scenario modelling implementation and distribution costs that the company plans to allocate

within the overall system management costs should be implemented by the lattice of criteria selection and is based on the account limits of innovations directed to the portfolio.

The general criterion is the assumption that the total volume of direct non-system (design) and system costs associated with additional costs to support the increase of ICs, by terms of its components, at a level acceptable to the company, should be less than the total planned spending levels IA results in period. By criterion selection of innovative projects, after passing through the grid 1 selection (fig. 4.6) it is necessary to make modelling scenarios project implementation in order to its effective management, block 2, (fig. 4.6). a third process, – defining costing innovation of the period is a synthesis of the full costs of selected projects, the final (specified) definition of system costs and expenses included in the opportunity costs as a result of the filtration process of selecting innovative projects. It should be mentioned that the total costs IACM can be adjusted for company's profit arising from the accumulation of experience by IA recognition of internally generated goodwill as company assets.

So structuring process of selecting the type of innovative implementations, the formation of a portfolio of innovative projects and determination of the volume and direction of cost innovation should be implementing by taking into account the criterion of grids selection that ensures the transfer of characteristics of the general state of IACM to the level defined now as desired, according to the introduction of some innovative projects period. The use of the suggested process of determining appropriate expenditure increases the efficiency of innovation activities project management and provides creation of platform for sustainable competitiveness.

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4.3. The accountability of innovation management

Prokopishyna O.V.

Depth analysis of the results of innovation activities of companies in Ukraine allowed to detect difficulties in the implementation of traditional methods of consolidation accounting information caused by rapid changes and hardly forecasted results and expenses of R&D at the level of strategic management.

The system of accounting and analytical support of innovation activity like any open system has the features of unity and contradiction between its constituents and subsystems. In the plane of practical implementation

processes of consolidation of accounting and analytical information these properties are manifested primarily in the approach to the choice of measuring media. The principle of the single currency meter, standard fixed system of accounting principles in Ukraine, on the one hand, provide the basis for mathematically correct from the standpoint of owners quantify the value of the business as a whole and individual component added value created as a result of the enterprise, on the other hand, have a significant impact on traditional approaches and management accounting methods used by project managers at various stages of innovations; financial estimates obtained during the project budgeting, payments current and future value, profitability, etc. often represent a key criterion for appropriate design solutions.

However, a new look at measuring social and economic performance forces evolution of methodological approaches to management accounting, the emergence and dissemination of progressive management practices to new methods of generation, processing and consolidation accounting and analytical information that gradually leads to a paradigm shift in management accounting towards combining financial and non-financial information sources to solve problems of information support of different parties during the innovation process.

Due to the specific nature of innovation activity [1], to ensure the effectiveness of the subsystem of identification, recognition and response to changes in the geopolitical, economic and social factors, the strategic management requires not only narrowing application of the single criteria analysis, mainly based on the monetary value of financial and property flows but also multi-criteria analysis methods that allow to combine cost and non-financial parameters of innovations and take into account the expectations of the environment, development trends in the national economy and international market. It includes the expectations of stakeholders in the areas of analytical information and requires the strategic expansion of content accounting and analytical information to new forms that may describe the existing relationship between the subjects of internal and external environment, as well as clear rules for resolving conflicts during the implementation of innovations.

The proposed expansion of the scope of implementation of accounting functions is closely associated with the development of strategic calculation methods, that in recent years have steadily evolved from a set of processes of identification, measurement, accumulation and processing of information concerning factors that create competitive advantage to the enterprise subsystem accounting and analytical support for strategic management businesses.

Resonance influence of the effectiveness of strategic accounting on overall innovation management, led an active scientific research that aimed to identify the economic substance of the underlying processes and allowed less than a decade to move scientific opinion on the interpretation of strategic accounting as a system of registration, synthesis and restore data necessary for strategic management decisions management system to identify its nature within the concepts of strategic measurement systems [4], allowing, as noted in [3] to collect strategic accounting and analytical information on the positions of key success factors for enterprises that may be defined as the set of available resources and opportunities for their commercial use.

Based on the progressive experience of strategic accounting for domestic enterprises and research results of quality assurance problems in functioning of accounting and analytical systems the strategic tasks of ensuring the accountability of innovation management may be defined:

- documentary identification and registration of facts, events and results of R&D that influence the company performance and further development of business activity;
- evaluation and synthesis of quantitative data and verbal information about the size of the actual and potential demand, identifying the factors that influence demand in general and demand for specific innovative products developed by the company;
- documentation, verbal and quantitative assessment of events in socio-economic and geopolitical sphere, the analysis of the actual long-term forecast of their impact on supply and demand for new products developed by the company;
- identification, documentation, storage and synthesis of quantitative and qualitative information on the actual and prospective changes in the global market, trends in demand for products developed by the company, geopolitical factors, science phenomena and results of R&D in potential areas;
- consolidation of accumulated quantitative and qualitative information, analysis and development of strategic alternatives for financial and economic activity, evaluation of the necessary financial, material, human and intellectual resources to implement strategic alternatives, identification of risks, strengths and weaknesses of certain strategic projects and their impact on competition the benefits of enterprise assessment and forecast results for each of the strategic alternatives;
- transmission of consolidated accounting and analytical information to the innovation managing subsystem of the company strategic management;

- monitoring parameters of the internal environment in the implementation of the approved strategy for R&D, control deviation of absolute and relative indicators of the financial and economic operations of established standards and budgets of innovation activity;
- storage of consolidated accounting and analytical information and ensuring its availability for use in substantiating the innovation management decisions in future periods.

Organizational structure of strategic accounting should ensure effective implementation of the tasks that are typical for innovative companies, but the mechanism for implementing the strategic functions of accounting must be unique for each individual business entity, using the process of forming common conceptual framework of the organization of R&D process. This is another difference between strategic accounting and the traditional accounting that provides standard accounting procedures regarding the presence and movement of assets and their sources, calculation of costs and benefits, a standard internal document flow using typical forms of primary documents and reporting regulations established or recommended sector interval data processing and reporting.

The requirement for unique features of accounting mechanism for innovation activity is evoked by, firstly, the formation of different packages of statements containing relevant consolidated information to meet the information needs of different user groups, and secondly, using various sources of input data, as the plural of the environment, socio-economic and geopolitical factors influencing the innovation process that each company establishes individually as a limited list of subjects on which data signals are recorded and processed. Consequently, the accounting and analytical procedures at the strategic accounting for innovations should have a custom character, but for every company be formalized and systematically repeated.

To achieve the objectives of financial and economic development management systems should provide opportunities for effective use of methods of strategic calculation that includes the calculation for the lifecycle of innovative products, Target costing, calculation for the chain of value, etc., as well as the concept of Balanced Scorecard. Advantages of these methods are based on the strategic approach to reform the structure of the array of accounting and analytical information through its amendments no financial parameters that are able to take into account the expectations and trends of R&D process.

Organization of strategic calculation based on the concept of Balanced Scorecard allows to realize in practice project-oriented organizations performance evaluation tools in the meter that meet the information needs of a wide range of internal and external users. In the modern sense [2]

Balanced Scorecard (BSC) platform is the use of complex valuation tools which are formed in accordance with the mission and strategy of the company, meet the requirements of different users reporting and provides a balance between the objective and the subjective perception of reality between quantitative and qualitative indicators and data between blocks with different time intervals relevant for decision-making.

Based on analysis of the results of modern domestic and foreign research on the nature and specifics of the concept of BSC, with some simplification we may conclude that the concept involves the implementation of a set of measures aimed at achieving the company's strategic goals set out in four vectors: financial, market, organizational and social. This vector combining financial objectives described quantitative ostentatious financial-economic activity (absolute amount of profit, profitability, etc.); market vector summarizes the goals associated with the position on the domestic and foreign markets (market share, changes in the competitive position, customer loyalty index, the index of awareness of potential consumers, sustainability communications code delivery process, etc.); organizational vector sets strategic options of internal business processes; social vector constitutes goals of company human development, harmonizing relations with entities that have an indirect impact on its performance.

Thus, in the information objects first two vectors can be characterized by equal quantitative and qualitative indicators, the components of market and social vectors usually require the implementation methods of collection, storage and processing verbal information.

Implementation of strategic objectives on accounting in market and social vectors and analytical information flow is possible through the systematic use verbal methods of analysis in a cyclic process of consolidating information SSAASA [2], with following generalized stages:

C_1 – collecting data on actual and expected parameters of innovation;

C_2 – the accumulation of verbal information;

A_1 – verbal ordering of information, its processing and the formation of its array-based knowledge;

C_3 – transmission to block of control subsystem strategic innovation management, accumulation of experience and development of the basis of human potential of the enterprise;

A_2 – usage of the experience in decision-making with management influence on the formation, development of strategic competitive advantage;

A_3 – implementation of measures adopted on the basis of strategic innovation management decisions.

At the each stage of cyclic process of consolidation accounting and analytical information within the strategic account of the relevant methods of verbal analysis (table 4.7). The concept BSC should be considered not only as a set of specific tools developed implementation strategies entrepreneurship, but also as a permanent platform for analysis of the results achieved during innovation process and adjusting the strategic goals of the enterprise in response to changes in behavior parameters of the internal environment and the external space. Last one can be quite efficiently implemented through the application of strategic maps that reveal, demonstrate, and consider multiple links between basic assumptions and expectations about the innovations and key subjects involved in the company financial and business development.

Implementing the concept of BSC for accountability of innovation management should create a flexible and capable for self-development system of strategic calculation that lets management to create and use rationally structured information on the results of financial and economic activity in general and individual projects of R&D, as well as knowledge on actual and potential changes in the parameters of the internal environment and the external space, the relationships between these parameters and expectations related subjects on the activities of the company or changing its characteristics. Under these conditions, the use of strategy maps is one of the effective strategic accounting methods that fully meets the relevant accumulated information for innovation process.

Table 4.7. The main stages of consolidation of accounting and analytical information system within the concept of BSC

The stages of the information consolidation process		The purpose of implementing the methods of verbal information analysis
C ₁	collection of accounting and analytical data	identify options of accounting and analytical information systems, establishing multi-parameter estimation
C ₂	accumulation of numerical and verbal information	evaluation scales construction of the system of values for different criteria
A ₁	forming a structured array of information in numerical and verbal meters	classifying option characters of information objects
C ₃	transmission to the unit control subsystem of strategic innovation management	ordering optional parameters of the objects
A ₂	decisions on the strategic competitive advantage	selection of the best alternative
A ₃	implementation of management measures	revealing of changes in parameters of innovations evoked by undertaken administrative measures

The effective information flow in the accounting system based on strategic BSC concept allows to expand evaluation of innovation activity results and creates opportunities to identify synergy effects of business projects and decomposition descriptive causal relationships between individual elements of value added chain.

Despite all the benefits of BSC, the transition of innovation companies to this concept is not sustainable and can be effectively complemented via embodiment other innovations in the organization of strategic management and accounting in particular.

The high sensitivity of Ukraine market to the expected changes in geopolitical and socio-economic factors proved that among mentioned above the method of calculation of the cost for the life cycle of innovation products is progressive method for strategic accounting.

Calculation of the cost per life cycle (LCC) is one of the modern methods of management accounting, which mainly relate to the products, but can easily be adapted for the purpose of calculation of the costs of enterprises-producers of projects, technologies, services and intangibles. As part of the cost of this method takes into account not only the costs directly incurred during receiving new proceeds from the sale of innovation products, but all resources consumed throughout the life cycle of innovation products.

Overview, costing on life cycle of innovation products can be completed in three aspects:

- in the term of innovation product costs – by analyzing and adding the direct product costs
- in the term of innovation process costs – by taking into account expenditure on R&D, market analysis, preparation and organization of production, the development of distribution routes, etc.
- in the term of innovation activity costs – by taking into account the costs of R&D projects implemented by the company.

The method of calculation of the cost per life cycle is a part of a measurement value in the strategic calculation, because it creates the basis for further consolidation of management information useful for analysis and measurement of costs outside the single innovation product and even individual business units.

Target Costing is also one of the progressive methods of calculation, which meets the information needs of business owners and focuses on the expectations of consumers of innovation products. The overall purpose and result of the application procedures Target- Costing is determining the amount of cost and expenditure of financial and economic activities, which both reached the planned owned or higher management

company the efficiency of financial and economic activity and expectations usefulness of Costing products introduced by producer.

The beginning of the accounting and analytical procedures in Target Costing is determination of target price of innovation product that satisfies new needs. The target cost of the innovation product, measured as the difference between the target price and margin income that owners consider sufficient financial and material resources of the company, is the starting point for finding specific innovation producers with the appropriate amount of production costs. In applying the procedures Target Costing an innovative company product should also consider quantitative and qualitative information on related products and services.

An important part of accounting and analytical procedures when using Target Costing is consideration changes of demand and supply characteristics in time. Construction of time series for the target price and margin income for innovation product provides the basis for identifying corridors of its cost, and in the compilation of information on innovation products on the same timeline – the possibility of balancing incoming and outgoing financial flows, optimize the structure of borrowed material and manpower of innovative company.

Value Chain Costing as a method of strategic accounting, that may be successfully applied by innovative companies and contains evaluating the share value of each component of innovation process in total expenditures on R&D. Moreover, the method creates a knowledge base for analyzing the structure of the total cost of innovation products, identifying the least profitable stages of innovation process and development alternative innovation products or services.

Value Chain Costing has for a particular scope for partnerships university-business, as it allows to generate information on the stages of the accumulation value of innovation products. By such decomposition the contribution cost of each partner may be estimated, providing further information basis for a reasonable distribution of financial, human and intellectual resources, evaluation the effectiveness of managing company and business unit, monitoring innovation activeness, established rates of marginal income, profitability of operations, and so on.

Thus, depending on the degree of integration of business enterprises in the R&D the calculation methods of internal and external value chain can be applied (for individual enterprises and their partnerships respectively). In any case, this method in the strategic calculation involves determining the early stages of a list of cost elements, units of measurement, evaluation parameters and indicators of criterion analysis; using verbal terms in the analysis of the cost of the external value chain is particularly important justification intervals quantitative indicators

compiled and formalizing procedures for collecting, recording and documenting information on various external sources.

The increased management efficiency of partnerships university-business may be supported by strategic use of such accounting methodical approach as Open-Book Accounting. Open-Book Accounting is based on principle of consolidated information dissemination to interested users, that does not mean the availability of full information on the cost structure and other objects of management accounting of all union members, and provides lists of items harmonization of management reporting that spreads, scope, goals, processing facilities and limiting the use of consolidated information.

In many cases, the most appropriate information for distribution is non-financial data on the activities of innovation partnerships members, objective information about the actual changes in the external environment, the implementation of socio-economic and geopolitical factors particularly threatening, the emergence of additional risks and information on estimated trends in supply and demand, expectations of consumers, producers and government agencies. As the cost of development and consolidation of such information is material, decisions upon using the principle of «open reporting» among the members of association can be made regarding access to information on the terms of compensation by equivalent financial or information resources.

Different qualifications of accounting and analytical services of participating businesses necessities harmonization of standards for registration events, measuring their impact, evaluation expectations of changes, etc., and thus embodies harmonization of accounting and analytical procedures in strategic management within innovative business associations.

The specific methods of modeling business processes, financial and business development play important role in the strategic accounting. The task of collection, storage and processing of events of innovation processes must have proper methodological support through the use of strategic accounting cyber, econometric, stochastic modeling techniques, valuation multiple consequences of decisions and other methods of modeling reality of inputs, outputs and functions of variables that allow to perform information and analytical support for decisions upon strategic innovation alternatives taking into account the variability of the environment and the probabilistic nature of innovation activity results.

Overall, ensuring accountability of innovation management may be based on progressive experience of conceptual and methodological approaches to consolidation accounting and analytical information.

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4.4. The role of innovation in corporate reporting in the transformation of accounting method's elements

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The global financial crisis of 2007-2009 has demonstrated not only the falsity of financial markets behavior, oriented toward financialisation, but also the lack of transparency of corporate reporting systems. Corporate reporting has fallen to meet the information needs of

stakeholders and given an actual signal a possible bankruptcy of market participants, despite the tendency to harmonize worldwide.

There is an urgent need to identify key innovations in corporate reporting and analyzing the feasibility of their use with polar trends in corporate reporting, different national approaches to the regulation of accounting systems and uncertainty in accounting audit issues of sustainable development indicators in academic circles.

Study of innovation in accounting, audit and corporate accounting become more topical in the context of their role in transformation of traditional elements of accounting method – documentation, stock-taking, evaluation and calculation (costing), accounts and double entry, balance sheet and financial statements.

We believe that in the face of close, interdependent relation between corporate reporting and financial markets and in view of the increasing role of technology and sustainable development indicators, this innovation can be defined as Big Data, (BG), different types account for ESG criteria of sustainability (environmental, social and governance, ESG) – at the stage of accounting; Real-time reporting (RTR), Integrated reporting for sustainable development (IR) – at the stage of corporate reporting; Continuous Audit (CA), Computerized Assisted Audit Techniques, CAAT) – at the stage of Assurance and dissemination of Global General Accepted Accounting Principles (GGAAP) and eXtensible Business Reporting Language (XBRL) – as supporting technology innovations.

So, innovation in accounting, reporting and audit are generated by paradigm of sustainable development and the trend towards globalization of financial markets fundamentally affect traditional accounting paradigm, since its framework - the elements accounting method. Interconnections between elements of accounting method and innovation in corporate reporting are presented in table 4.8, as well as innovations cross-impact. Here are some comments on the impact of innovation on the elements of accounting method. We will also focus our attention on innovations that have cross-cutting impact on all elements, including RTR, XBRL and CA.

The emergence of multiple information signals and types of data on clouds, known as «Big Data» changes the approaches to documentation of assets and their stock-taking in dematerialized form through using modern technology [2]. BG as technical innovation are accompanied by the appearance of new accounts to display these information assets and providing high speed in generating accounting information and reporting. BG are not only the creation and the product of accounting and RTR, but also the basis for the CA using modern analytical technologies (Business analytics, Data mining, CAAT).

Table 4.8. Matrix of transformation accounting method' elements under the impact of innovation in corporate reporting, developed by authors

Elements of accounting method	Innovations cross-impact							
	RTR	IR	BG, CA, XBRL	CA CAAT, XBRL	ESG CAAT	BG, RTR	BG, ESG, RTR XBRL	
	BG	ESG	RTR	GGAAP	IR	XBRL	CA	CAAT
Documentation	BG		RTR			XBRL	CA	CAAT
Stock-taking	BG		RTR			XBRL	CA	CAAT
Evaluation		ESG	RTR	GGAAP		XBRL	CA	CAAT
Calculation		ESG	RTR	GGAAP		XBRL	CA	
Accounts	BG	ESG	RTR			XBRL	CA	
Double entry		ESG	RTR			XBRL	CA	
Balance sheet and Financial statement	BG	ESG	RTR	GGAAP	IR	XBRL	CA	CAAT

Using remote server's data and corporate information, according to David J.S. & Steinbart P.J. (2000). [4], improves the quality and effectiveness of the audit by reducing the time to access the data reports and its analysis, early detects and prevents the corporate reporting fraud and manipulation, confirms the legitimacy of transactions.

Incorporated ESG – criteria and responsible investment techniques in business require the design of appropriate accounting indicators to demonstrate the progress the company in achieving the goals of sustainable development. ESG – criteria as innovative approach in accounting have impacted the appearance of new accounts and double entry's for internal and external flows and the effects of social and environmental nature to evaluate and calculate the cost of goods and services produced.

Comparing «triple bottom line» reporting (sustainability reporting) and traditional financial reporting [5]) it is worth to saying that sustainability reporting incorporated abovementioned criteria as sustainable development pillars and pushed a new impetus to the methodology of appropriate accounting types (social, environmental and governance). But the question is how to develop a methodology of evaluation numerous indicators of sustainable development with a mixed nature (social, economic, environmental, economic, etc.).

New types of accounting by ESG – criteria (social and ecology especially) and non-financial reporting, need in increase the quality and transparency of traditional financial reporting lead to the creation of integrated corporate reporting. It causes changes in approaches to public

audit and confirmation such reports, CAAT[®] and artificial intelligence systems development, to handle with its analysis and interpretation [1].

Speed of information distribution of information and reporting timeliness have a primary importance in meeting information needs of stakeholders. RTR distribution, XBRL as the basis of this distribution and CA as a tools for RTR confirmation significantly reduce not only you're the accounting cycle for the production of reports (including all elements of accounting method), but also the traditional audit methodology (which now applies for the all elements of accounting method).

RTR can be defined as sharing information about the company in continuous mode, but not in certain periods of time, as is happening now [6]. However, a common approach to the definition of distribution and disclosure «speed» is not created, there are different views concerning update the reporting as every minute and hour. In any case «near» real time is considered an important characteristic the desired speed of information achieved.

Among unconventional advantages of corporate information disclosure in real-time mode wide aggregation and comprehensive analysis of reporting indicators regarding cash flow, price monitoring, financial planning, risk management, accounts receivable and accounts payable should be mentioned as well as create an extra stakeholders long-term value due to reducing accounting and audit cycle. This reduction in preparing and verification of financial report is a condition of volatile financial markets, because the data are publicized with 90 days' delay seems to be historic, old, and useless. So, the company with shorter accounting and audit cycle are appreciated as more transparent and open by stakeholder's side.

It is necessary also to focus on some precautions for this format of reporting presentation. Summary of arguments «pros» and «cons» the widespread use of RTR and its role in transformation of accounting method' elements is presented in fig. 4.8.

First of these warnings concern the deepening instability and short-term volatility in financial markets because of the quick response by investors to the real time reporting publicized as well as creating new forms of interaction with regulators and competitors.

Corporate reporting submitted in real time requires a greater level of confidence in its qualitative characteristics (reliability, accuracy, relevance etc.). This mater concerned in accordance with new meaning of corporate reporting audit and innovation in conducting auditor service.

Regarding this dilemma «speed of data sharing – confidence in data accuracy» RTR innovation should be called as the most important among other technical innovation in corporate reporting.

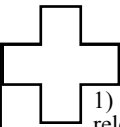
 <ol style="list-style-type: none"> 1) Operational efficiency and relevance of information and documentation; 2) The broad aggregation of information in reports and more time to analyze it; 3) Improving transparency, investment attractiveness and openness of reported companies. 	<ol style="list-style-type: none"> 1) The loss of a certain degree of accuracy of the data with regard to the concept of materiality and the need for a new evaluation methodology and calculation procedures; 2) Introduction of validation and monitoring methods by regulators; 3) Use data by unfair competitors; 4) Increased volatility in the financial markets through short-termism.
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Figure 4.8. The arguments «pros» and «cons» on the use of real-time reporting, developed by authors

Changing the traditional paradigm of corporate reporting leads to changes in auditor opinion' methodology. We believe that auditor have to re-considerate the possibility of auditor judgment's issue for relatively wider range of reporting indicators with non-financial nature (as result of the system of corporate reporting performance with ESG). Reliability and compliance with the adopted Conceptual framework for financial and non-financial presentation seems to be important factors in this judgment's expression.

The use of CA definitely affects any and all elements of the accounting method through its cross-cutting nature, and CAAT give to auditor new, more efficient tools to cope with client's documentation, to take part in stock-taking, to trace some evaluating principles and calculation processes and finally to issue an opinion balance sheet and financial statements with higher level of confidence. This tools reduces spending resources and auditor time in good manner.

Close link between innovation in audit (CA, CAAT) traced on the basis for their conduct – Big Data, Integrated Reporting, Real-Time Reporting and Extencible Business Teporting Language, qualitatively changed approaches to the audit.

Firstly, the continuous audit methodology as the audit processing' innovation by increasing efficiency, reducing costs and labor costs auditors was examined in the works Vasarhelyi and Halper 1991 [7], Chan, Vasarhelyi 2011 [7].

The effectiveness of the new paradigm of continuous audit showed the largest corporations in the world: AT&T Corp., Siemens, HCA Inc, Itau Unibanco, IBM, HP, MetLife, and Proctor & Gamble.

The role of CA in transformation of all accounting method' elements is the most fully revealed during comparison with the traditional paradigm of audit services rendering (table 4.9).

Table 4.9. Comparative characteristics of traditional and continuous auditing, improved by authors [7]

Features	Conventional Audit	Continuous Audit
Frequency	Periodic	Continuing, in specific intervals
Focus on the future	Reactive	Proactive
Conducting of audit procedures	Manual	Automatic
The role of auditors	Increasing of auditor performance intensity and differentiation of roles internal and external auditors	Interpretation by auditors exceptional transactions that require professional judgments, the role of external auditors is reduced to a continuous system certification audit
The nature of audit procedures	Substantially analytical and control procedures	Continuous monitoring and analysis procedures
Timeliness of audit procedures	Tests of control and detailed procedures are separated	Tests of control and detailed procedures are conducted simultaneously
The scope of audit procedures	Different sampling methods	Continuous sampling
Testing	Manual	CAAT, Business Artificial Intelligence for testing and monitoring all transactions
Auditor's report and opinion	Periodic	Continuing, in specific intervals

The defining features of CA serve its frequency, proactive and automated approach to implementation, focusing auditor on exceptional operations and interpretation of CAAT results, not a routine tracing of audit evidence, testing and analysis, and most importantly – change in audit engagement. This change means the new steps in real-time auditor engagement and organization of auditor team work. There are four steps: audit data modeling and defining benchmarks, data analysis and reporting.

New auditor methodology requires the incorporation CA and CAAT in all elements of accounting method, in all stages of accounting cycle and creates positive effects of an integrated combination of accounting, reporting and audit.

GGAAP development, convergence of IFRS and GAAP US, improving the methodology standards of Integrated Reporting and International Standards on Quality Control, Auditing, Review, Other Assurance and Related Services act as a response to the need to restore confidence in

the financial statements on globalized financial markets as well as combining non-financial information and its quality independent confirmation through CA can be treat as a ground for evaluation, calculation and balance sheet' transformation.

XBRL as technical innovation serves the connecting-link, which helps translate on understandable to all stakeholder's language performance indicator of reporting companies financial and integrated nature, XBRL minimizes the time and costs for documentation, stock-taking and display on the accounts of taxonomies' objects, processing (evaluation and calculation), analysis and audit.

Table 4.10. Benefits characteristics of XBRL as innovation in the balance sheet' preparation and presentation, developed by authors

Benefits	Features
Transparency and accountability in real time	Raising the quality of reporting promotes transparency
	Significant reduction in time for the publication and transmission of reports
	Special formats and unique opportunities to meet stakeholder information requests
Availability for public users and reporting preparers	Free and open standard
	Numerous software tools transforming XBRL data format
Increase in reporting quality	Unification of reporting formats and reporting metrics transformation from one format to another, facilitation formatting documents
	Ensuring the accuracy of the statements and its specifications to meet the needs of different regulators. Reducing the number of errors in the calculation and reporting
Increase in reliability of auditor opinion	Automation approval data verification and reporting, taking into account not only the transfer of tags, but the calculation formulas
	Automation of data retrieval and audit trails through the transfer of not only data, but also metadata annotations describing problems without involving excessive documentation and testing procedures
Reducing the time and cost of reporting preparing	Integrating language to software of IT companies
	Reducing reporting cycle and release time for its analysis
	Minimizing costs to search for, collect and access reporting
Ensuring information security and confidence in accounting	Timely, assured and understandable reporting restores the confidence in financial markets
	Reducing probability of fraud and manipulation of reports
Comprehensive analysis of the information	New ways and methods of data analysis
	Comparison of companies in different reporting periods and cross-companies comparisons
Improve Business Communication	Fast and transparent system for the transfer and sharing of data between companies and its stakeholders
	Improving the efficiency of business processes

It is universal standard marking the report data to their publication, exchange, analysis and comparison of the most effective and timely manner and distribution among the participants of international financial markets and regulators. Using the taxonomy of certain accounting and reporting standards, XBRL stands universal methodology for dissemination and understanding of contemporary business data, including RTR, IR in different accounting codification approaches and GGAAP.

The main benefits of transformation of accounting method's elements under the influence of XBRL include transparency and presentation of the balance sheet and financial reporting in real-time, increasing its availability and quality of user, high level of confidence and capabilities in-depth analysis (table 4.10).

Thus, the post-crisis reform of disclosure in financial markets updates the value of innovation in accounting, reporting and audit, aimed to improving corporate reporting transparency, understanding the goals of sustainable development and needs of different group of stakeholders.

This reform primarily affects the basics of accounting and reporting – the elements of accounting method, which are transformed under the influence of this innovations. Updated elements promote the development of new paradigm of accounting, reporting and audit of sustainable development in a globalized financial markets.

Big data, account for ESG – criteria, preparation of integrated accounting and reporting in real-time, continuous auditing and CAAT, GGAAP distribution, integrated reporting standards are the typical technological innovations that accompany the transformation process of corporate reporting' preparing based on a new paradigm.

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Part II

INNOVATIVE DEVELOPMENT
MANAGEMENT ON THE BASIS
OF INNOVATIONS MARKETING

Section 5

Marketing of innovations and its role in the innovative activity

5.1. Marketing of innovations: common approaches, tools and strategies

Babukh I.B., Venher Ye.I.

The experience of developed countries in the world that are characterized by high economic growth and stable socio-economic development shows, that the sources of this growth are the introduction of temple technologies, active innovation in all sectors of the economy – especially in basic branches, that are able to create a significant multiplier effect.

Modernization of the Ukrainian economy and the activation of the innovation, creation of conditions for the innovative development of the enterprises are not considered, as a necessary condition of economic security and national defense, ensuring not only its competitiveness, but also the general existence. In the scientific literature many times were discussed the problems of high material and energy intensity of Ukrainian industrial enterprises, low competitiveness of their production, the critical state of fixed assets in various sectors and the negative impact of these factors on the reduction of volumes of production, the deterioration of the country's balance of payments due to the decline in exports, foreign exchange deficit, job cuts, budget revenues in taxes, deterioration of the general socio-economic situation in the country.

A special place in the activation of innovative processes intended to play a set of marketing activities, in general the whole marketing system in the enterprise. For a description of innovation in terms of marketing it's necessary to define its place in the innovation process. The issue of place of marketing in the innovation process and the question of what will be the initial stage are very important. Most authors believe that the innovation process begins with the development of innovative product, about the place of marketing in the innovation process, as a rule, is not even mentioned. It is obvious that this point of view is incorrect, as originally innovations designed to solve specific customer needs. In the current conditions most experts guarantee the success of a new product if it at 70-90% depends on the accuracy of its compliance with consumer preferences. That is why the feature of the marketing system has become

a thorough study of the market. The opinion of the consumers should be the basis for deciding whether further develop an innovative idea or not to continue. For this, at the enterprises are organized various pilot groups of consumers, who evaluate innovation from the consumer's point of view. It is also necessary to mind that some innovative ideas can lie «outside» of the strategic objectives of the enterprise, or for whatever reason cannot be implemented. In this case, the idea can be protected as intellectual property, and handed over on a reimbursable basis to another entity. At the stage of market research of marketing's contribution to the innovation process is revealing and selection of emerging and mature needs, forming the basis of plans and ideas for the development of products that will be demanded and accepted by the market and be profitable to the manufacturer. At the stage of theoretical development marketers adjust the development process in the direction of major market trends. At the stage of practical development of innovative products such contribute will be full implementation of these requirements in the technical documentation and prototypes. At the stage of manufacture of the product it will be ensuring a high rate production output, a gradual reduction in costs and removal of goods, demand for which is falling from the process of production. At the stage of dissemination (sale, transfer) marketing deals with pricing, stimulating demand and promotion of goods on the market [6].

Thus, under the innovation process in terms of marketing is understood, as a process that begins with the analysis of customer-concept innovation, namely creation, protection and finally promotion and commercial (or the market) implementation. Immediately the innovation process can be shown, as a sequential chain of events in which the idea was originally located in the head of the author, passes a number of different stages, the number and content of which depends on the industry for which the innovation is created. This definition differs from prevailing in the literature in that erased a clear bias in favor of the technological aspects of innovation and highlights the role of marketing not as an intermediate, as well, as one of the defining essence of the innovation process. In the presented concept is not intended, that the marketer himself will deal with the design and technical implementation of the product. This refers to the coordinating, organizing and controlling party of the entire innovation process.

Exploring the history of development of innovation, it should be noted that in 40-50 years of XX century innovations were created in laboratories belonging to firms. However, the isolation of the innovation process from market isolation on the ideas of engineering-design housing, the principle of work of the scientists' science for science «led to the fact» that

innovation did not justify consumer expectations and, consequently, did not find their consumers. In the early 70-s of the XX century the orientation of the innovation process has changed. It was increasingly built on the findings of market research, getting «deep into» the mechanism of occurrence and formation of market needs. Representatives of the scientific community began to follow closely the process of promoting new products from the moment they were born in the walls of the design labs to gain practical experience in the production and sale of this product. This brought positive results, which in our days are fixed by many researchers.

In modern economic literature is almost never found a clear definition of such term, as marketing innovation. An attempt to define the marketing of innovations was made by such scholars as V. Barancheev, N. Maslennikova, V. Mishin [7], they considered it as a certain systematic approach to innovation management as a finished product, as well as N. Chukhray [9], who considered it, on the one hand, as the philosophy of thinking of constant construction of effective marketing relationships with market participants, on the other hand, as a reaction of marketers to changes in the external and internal environment of the enterprise.

In our opinion, basing on the content of the terms «innovation» and «marketing» is possible to determine that the marketing of innovations is a species of marketing, the aim of which is to assess and successfully targeted implementation of the results of innovative activity of the enterprise, as well, as control of the success of an innovative product at the place of implementation.

Thus, it is actually one of the main tools of innovation management, which give the invention of economic content and introducing it to the market. That is, the marketing – it is in fact that, what changes the idea and / or invention into the successful innovative product.

Frequently marketing of innovations is equated with marketing a new product [4] or to innovative marketing [5]. It is also associated with the lack of understanding of the essence of innovation and marketing. Marketing of innovations – is a broader concept than the marketing of a new product, since innovations can affect not only goods and services but also markets, processes, etc. As for the innovative marketing, it is likely type of marketing that uses new marketing techniques and tools. If an innovative approach to marketing is successful, it may be adopt by other firms that, in turn, can serve as a platform for creating new fundamental marketing concepts.

Thus, marketing of innovations is directly involved in the creation of innovations, and innovative marketing only exploits the results of innovative activities in the field of marketing. True, some scientists are inclined to believe that the innovative marketing is also a search for new

niches and markets segments. We consider it is wrong, because the search of new customers is not a new tool for marketing. Moreover, it is one of the basic functions of marketing. However, in the event that the company is being introduced on a new market, it becomes the object of the application of efforts of marketing of innovations because the enter on new markets – is one of the varieties of innovation.

Thus, marketing is not only an integral part of innovation, but also its driving force. The duties of marketers consist of search, identification and development of new needs. At the same time, marketing embodies scientific researches in the idea, and gives the idea economic content. It is also important to marketers interact with R&D experts, as the new product should be developed so that in its design could be embodied in the desired customer's value. Evaluation of the present invention – is also an integral function of marketing, because it affects the success of an innovative product in the market. And, of course, marketing along with sales directly involved in the diffusion of innovative products, as well as direct control over this process, carrying out various kinds of researches, both internal and external.

Now let us consider the algorithm of marketing of innovations, as well as key marketing tools and strategies used in it. Let us note that it should be understood differences in the tools and strategies used for different types of innovation. In marketing of innovations distinguish the concept of «innovation of marketing» and «consumer innovation». This separation is due to study carried out by G. Foksol and R. Goldsmithy results of which they singled out 4 groups of innovations with marketing as classifying feature: repositioning (change of promotion strategy of old products), old products, unknown to the consumer, new products familiar to the consumer, and technological innovation. In fact, this classification is the rethought Ansoff model, backed by empirical research and a focus on innovation. Here, however, there is one rather significant difference: the fact that Ansoff called diversification, Foksol, and Goldsmith called technological innovation. Diversification is a broader concept than technological innovation, because it can mean as the sale of the achievements of scientific and technical progress as well implementation the existing product, the new one for a particular company to new markets. As a result of above study were also identified the main factors that determine strategy of promoting innovative products:

- technical and economic and consumer properties of the innovative product;
- communications;
- time of consumer decision-making;
- social systems [8].

Anyway, marketing of innovation begins with the study of the market situation. In general, the scheme of marketing stages of the innovation product is as follows:

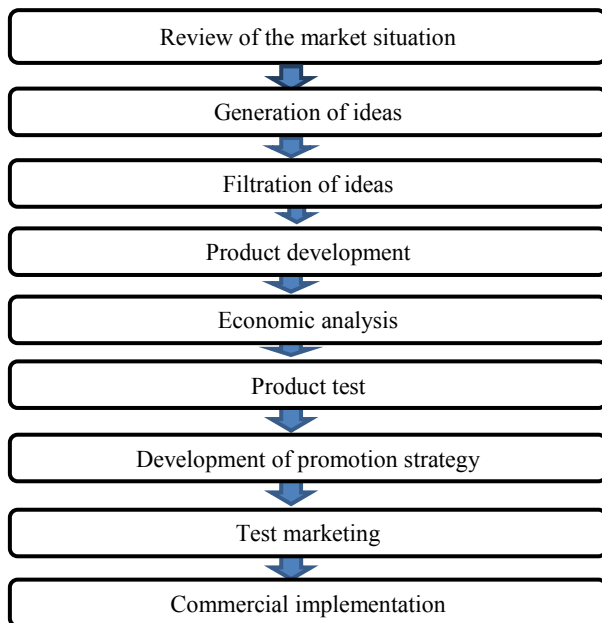


Figure 5.1. Stages of marketing of the innovative product [9]

If to compare this scheme with synthetic scheme of stages of innovations, can be traced back the presence of marketing in the innovation process: a review of the market situation corresponds to the stage of basic knowledge obtained from of scientific researches and the study of needs, generation of ideas corresponds to step «idea», economic analysis – is an assessment of the invention, the test marketing appears on the stage of creating the potential of innovative product, when the product of innovation acquires consumer characteristics and consumer value. Commercial implementation stage also can be associated with the stage of the emergence of real innovative product.

Let us consider the stages of marketing of innovative product and used marketing tools on them more detail. Review of the market situation can be performed by various methods depending on the size and type of market. Most often, marketers resort to the field and desk researches. The most common of the field researches is a survey of consumers (various interviews, focus groups, questionnaires, etc.) and a survey of

experts (specialists in this market), and of the desk ones is the online review and study of other secondary sources of information (publications, statistics). Be appreciated that most consumers inherently are stiff and are skeptical about innovations, so they should only be used in the identification of needs, but not in the analysis of existing ideas. For this reason, caution should be used with expert method.

In order to develop a strategy of the promotion of innovative product, it is necessary, first of all, to rely on the features of exactly that market on which will be implemented the product or service. Marketing tools that work in the same market may not be applicable to another. It is necessary to rely primarily on the type and size of the market. After that, is applied market segmentation that is market split into groups of customers that have similar needs, desires and capabilities. The most common indications for segmentation are: geographic, demographic, psychographic and behavioral [3]. Among these segments is necessary to choose one in order to prepare for it the most suitable strategy for product promotion. Selecting a segment for the introduction of innovative product is called positioning. Next, you need to evaluate the degree of novelty of the innovation potential of the product to the consumer. If the degree of novelty is high and the market size is not very large, it is better to use the attractive marketing, i.e. marketing, in which the main role is given to the cognitive component. This has 2 reasons: firstly, stiffness and skeptical point of consumers, secondly, the possible non-obviousness of advantages of innovative product [10]. If the market size is large enough and / or potential innovative product differs by little incremental, it is best to use a propulsive marketing, where the basic tools is advertising and sales promotion. In fact, as a rule, attracting and propulsive marketing of a particular proportion coincide, as in a promotion strategy of innovative product anyway must be present cognitive component. After determining the general promotion of the concept for the potential of innovative product is developed marketing mix: product policy, sales policy, pricing and communication policy. Trade policy is based on the technical and economic characteristics of the developed product. Its task is to emphasize the quality of the product, its consumer properties, and most importantly, competitive advantages. Competitive advantages determine the motif of consumer's using of the innovative product and preference of its analogues, if any are. There are 3 types of competitive advantages of innovative products: tangible, intangible and imagined [9]. Tangible competitive advantages the consumer is able to experience on his own. More of these advantages the product has and how are they more obvious, the more simplified the process of marketing promotion of innovative product. In this case, can be paid less attention to the

cognitive component and concentrate on promoting the product to the consumer. Intangible competitive advantages are advantages, not obvious to the consumer, even if they really are, and moreover, they are substantial. Very often it happens that even the technological and quality products are not in demand in the market exactly due to the fact that their competitive advantages were not properly communicated to the consumer, whereas for manufacturer, they were obvious. Therefore, marketing specialists in positioning of the product should be possible to accurately and clearly show the benefits of using its innovative product and also reflect the nature of its novelty and radicalism. There is a growing of cognitive component of marketing.

Imagined competitive advantages are created artificially by means of positioning and advertising. They can be initially incorporated at the stage of ideas, and brought as a result of the marketing and advertising department. In this case, the role of marketing is even higher than that of R&D services. A striking example of such products is production of the Apple company, with characteristics similar to analogues (Samsung, Sony, HTC, Asus and others), but it is much more expensive. Imagined competitive advantages are also widely used by manufacturers of medicines. A medicine with the same chemical composition may be called in different ways in different manufacturers and different cost significantly. Another important element of the product policy is the name of the product. It is especially important for highly innovative novelty product. There are many methods of creating the product name. The most advanced of them is the linguistic analysis. Ideally, it should be carried out by specialized companies. If the company does not have such a possibility, or otherwise, engaged in the development of innovative product's name, it should be guided by the following principles: the name should be short, unique and memorable for the fact of association only with innovative products of a particular company. To create additional competitive advantages, product personalization and greater involvement of consumers is also used a tool such as customization, i.e. editing of an existing product with the consumer's participation, taking into account his wishes and possibilities. With regard to innovative products, it is particularly relevant on the industrial market, where the number of users is less, but they have greater purchasing power.

Pricing policy of the innovative product is determined based on the main goals. Scientists distinguish four groups of main goals: the goals by profitability (profit maximization, the target rate of return), by sales volume (maximization of sales, market share), by competition (pricing based on value), the goals by prestige (lifestyle, enterprise image) [1]. Technique and methodology of pricing policy is reflected in many

publications. There are usually distinguished such basic methods of pricing: with a focus on expenses, on the usefulness of the product, on the demand, on the competition, the equilibrium method, «Conjoint Measurement», the Lagrange method, the balance method, method of statistical games, the method of rank correlation and the method of paired comparisons. Pricing of the potential innovative product on the above methods can take place both within the general pricing strategy of the company (the strategy of low prices, average prices, high prices, flexible prices, 'cream-skimming' and others.) and outside of it. However, if the product has a high degree of novelty and has a tangible competitive advantage, then the most frequently used strategy is one of «cream-skimming», when during the implementation of the goods is established a high price, and then it decreases with the product obsolescence. This strategy allows to quickly recoup the costs of development and production of innovative products. Most often, such strategy is found on the high-tech market: computers, mobile phones, etc. By other strategies, especially when the novelty and competitive advantages are not so tangible, different price actions become the common tool. If the innovative product is not aimed at one segment of the market, is used such a tool as price discrimination, that is, the introduction on different markets at different prices.

Sales policy involves forming distribution channels of innovative products. In some cases, well-constructed marketing policy can afford to abandon the communication policy. The company may implement innovative product like by its own efforts and by the efforts of dealers and distributors. In this case, it is necessary to use different tools for motivating them. This is usually done through the improvement of working conditions, different power ups and bonuses. The tools of marketing policy are direct selling (through the office of the company), personal selling (through merchants), trade fairs, and others. Recently, with the development of the information age is gaining popularity of such tools as online store [2].

The main aim of communication policy is more to attract the consumer, rather than push the buyer. This is especially important if the innovative product has a high degree of novelty. This communication policy serves the cognitive functions of marketing, i.e., the involvement and training of the consumer. This is achieved through training seminars, webinars, conferences, demonstrations, etc. Often also are used specialized articles of non-promotional character as cognitive communicative tool, aimed to show the consumer how to apply innovative product and which may be benefits of its application. However, the communication policy also affects the customer through various non-price shares. One of the most important instruments of influence on the buyer is a sales

promotion, that is a complex of measures of the marketing mix, aimed at prompting of the buyer to purchase innovative product (discounts, bonuses, gifts and gift offers, loyalty program). Returning to the tools of communication policy, let us note that they may differ in their impact on the consumer. With the advent of the Internet communication capabilities of enterprises rose sharply. Has appeared such a marketing tool, as a website that allows you not only to deliver information to the consumer and to receive from him feedback through various online services, but also reflect the other elements of the marketing mix [2]. Many online stores carry on its business activities exclusively through its website and other online marketing tools. Thanks to the Internet appears an opportunity to exchange information via e-mail, thereby greatly reduced transaction costs.

After developing of promotion strategy of the potential innovative product is held testing on the introduction on the market, by results of which a further decision is taken about the deeper introduction of the product. At this stage, it is important to marketers to monitor the situation. For analysis, it can be used as statistical as well communication tools. If the trial introduction is successful, begins the commercial implementation, during which the potential innovative product is transformed into a real innovative product. At the same time control process held by marketers does not disappear. The results of the commercial implementation are reflected in accounting documents and replenish the company's knowledge bank, which further serves as an aid to create new innovative products or to bring modifications to existing one.

Marketing strategies of innovative products vary depending on the type of market, goals and features of firms, and other factors. Goals related on the strategy may radically differ by marketing tools, used in the framework of the strategy. However, R. Miles and C. Snow developed the classification of enterprises by 4 strategic types [11]:

1) Defender – it is a mature company seeking by its innovative products to maintain market share. Usually, it takes a leading position on its market and is not particularly seeks to enter new one. Such companies rarely work on radical innovations and more focused on the modification of existing products;

2) Prospector – is the company, guiding its efforts to develop new products and find new markets. Most often, they have a high innovative potential due to strong marketing and development of local innovation infrastructure;

3) Analyzer – is the company, avoiding excessive risks, but, nevertheless, it introduces innovative products. It represents a balanced version of the «defender» and «prospector». It can implement both modifications

and radical product innovations. At the same time, can borrow technologies from other companies;

4) trimmer– is the company that due to the limited capacity controls outside a little. Because of it market behavior has adaptive character, most often they do not introduce any revolutionary own developments.

It should be noted in conclusion that the type of innovation strategy defines innovation and enterprise policy, and of course, the appropriate complex of marketing.

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5.2. Analyze of marketing resources of a region – the base for creation reasonable distribution policy of innovations at industrial enterprises

Bilovodska O.A.

The modern conditions indicate that building an effective marketing policy distribution industry is one of the most important factors in improving competitiveness. Moreover, the need to assess marketing resources in a region is very significant, because continuity and stability of its provision is a foundation that promotes a growth of industrial enterprises and their integration into the global supply chain. The consideration of analysis and evaluation of marketing resources in the development of the distribution system of the enterprise concerning market innovation is particularly acute, because it will consider the benefits and reduce or neutralize the possible disadvantages that fully meets the needs of the region and its characteristics and thus not only reduce the risks of distribution innovations but also improve its validity and effectiveness.

Let's analyse the level of marketing resources based on statistic date of all the regions of Ukraine in 2010-2014 by proposed structural elements:

1. *The scientific and methodological base (adopted experience)* – a knowledge which may be useful in entrepreneurship (existing principles, methods of activity etc.) to solve an existing problem, for early prediction for this problem, and depending on the circumstances, the maximum levelling with analysis of capabilities of similar experience or another region's adopting experience. So, we are talking about the knowledge that had been theoretically and practically elaborated by scientists, study of which can be observed in some scientific books, textbooks, journals, etc., and includes:

- the number of executed scientific and scientific-technical works (figure 5.2);
- the number of implemented scientific and scientific-technical works (figure 5.3);
- the number of published works (monographs, textbooks, tutorials, articles in the scientific professional journals etc.) (fig. 5.4);
- international cooperation between scientific organisations (the Ukrainian scientists' visits and participation in seminars and conferences; international conferences, seminars, etc., held by the organization; grants received for research work from international funds (fig. 5.5)).

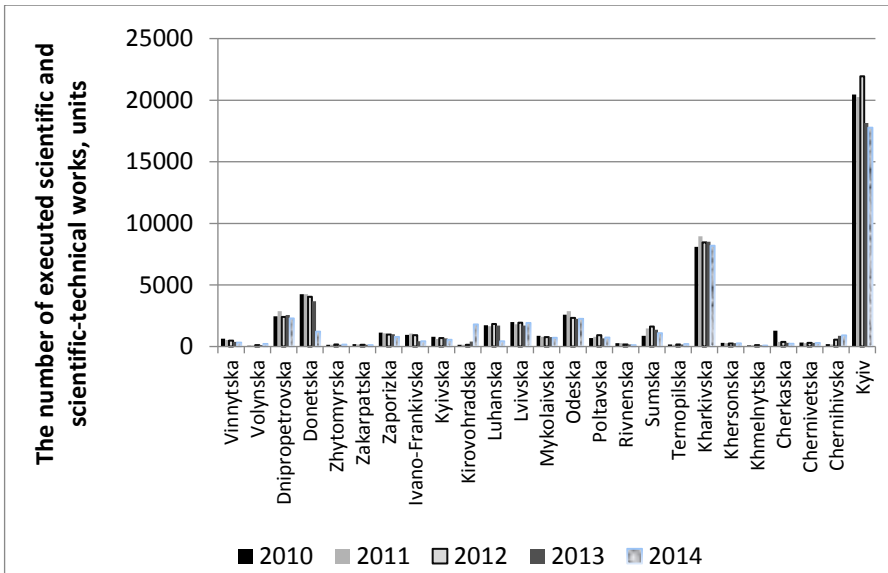


Figure 5.2. The number of executed scientific and scientific-technical works sorted by regions, 2010-2014 years (based on [1-4])

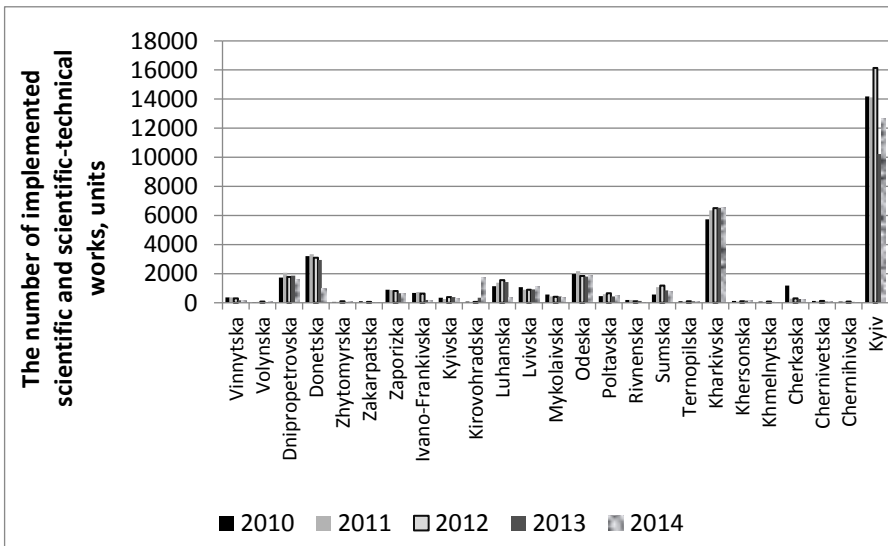


Figure 5.3. The number of implemented scientific and scientific-technical works sorted by regions, 2010-2014 years (based on [1-4])

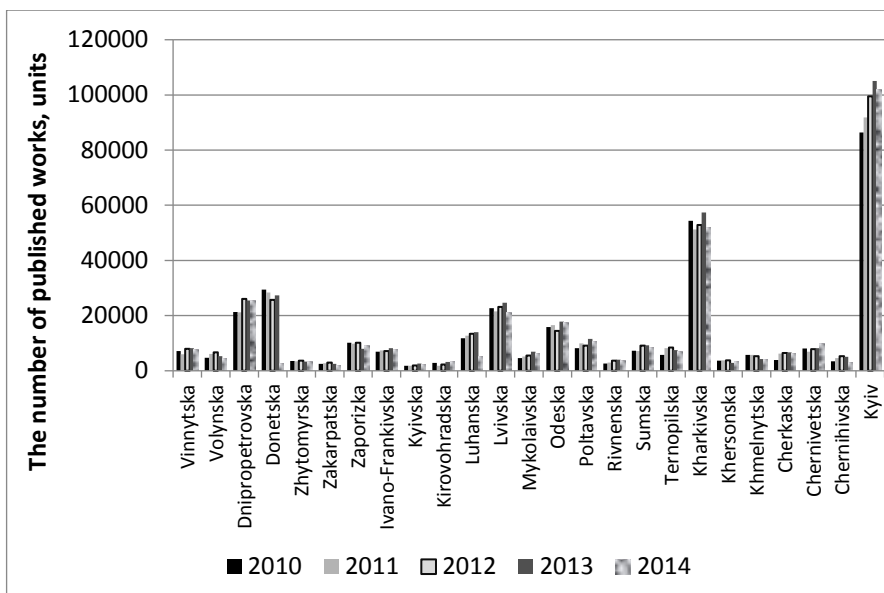


Figure 5.4. The number of published works sorted by regions, 2010-2014 years (based on [1-4])

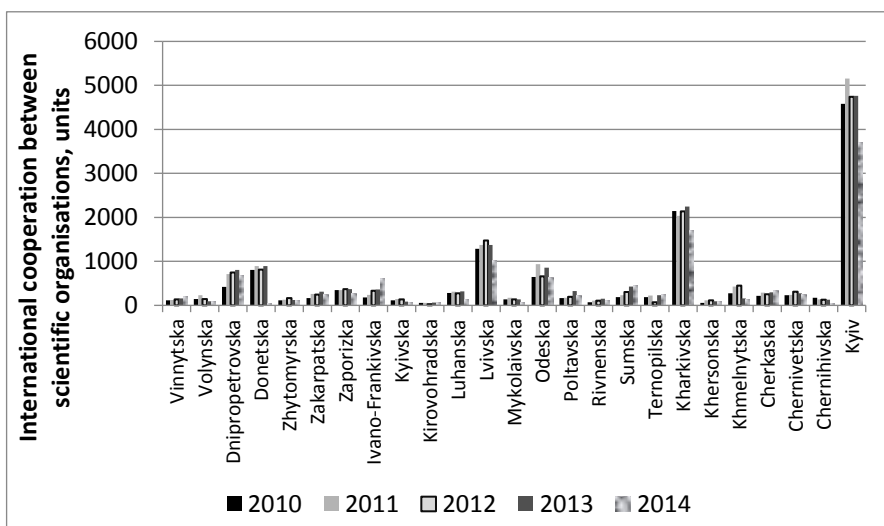


Figure 5.5. International cooperation between scientific organizations sorted by regions, 2010-2014 years (based on [1-4])

2. Special software that makes work of marketing services (data processing, orders, plan deliveries, etc.) easier.

Data was created on base of analysis of amount of enterprises that bought cars, equipment and software (fig. 5.6).

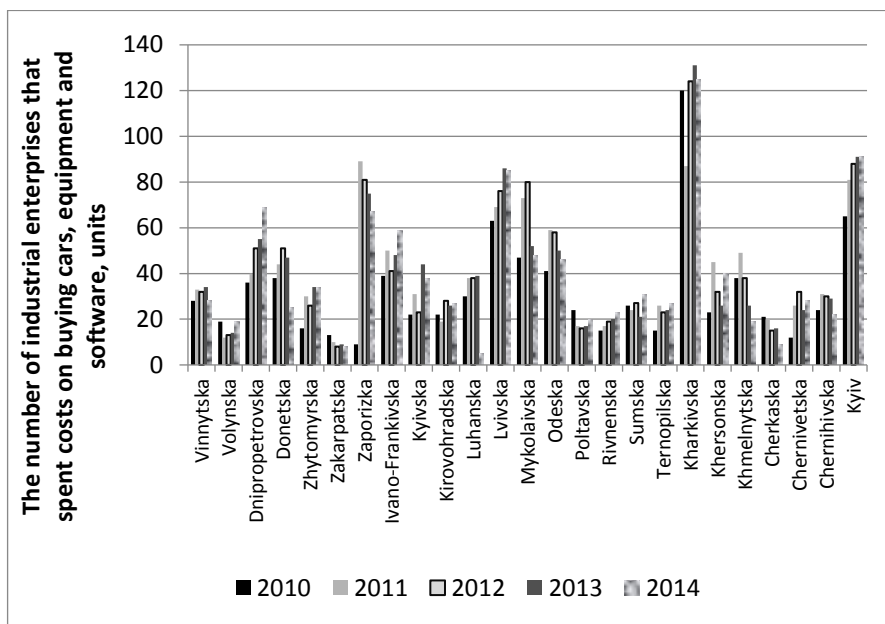


Figure 5.6. Industrial enterprises that spent costs on buying cars, equipment and software sorted by regions, 2010-2014 years (based on [1-4])

3. *The strategy and development programs, that meet the goals of the region and its objectives. The regional strategy of development is a strategic plan of regional growth, that defines goals, objectives, priorities, the direction of sustainable economic and social development of medium (4-6 years) and long term (10-15 years) periods.*

This part of marketing resources is created per aggregated data of the practical implementation of the Cabinet of Ministers of Ukraine, August 6, 2014 №385 «National Strategy for Regional Development till 2020».

The Strategy is aimed to define objectives and tools for solving social problems, improve economic potential of areas and performance of the economy, profitability and income and, consequently, to create

conditions for a general increase of social standards, quality of life and business environment.

The strategical goal of the implementing state regional policy is creation of conditions for dynamic, balanced development of the regions of Ukraine to ensure social and economic unity of the state, increasing regional competitiveness, enhance economic activity, raising living standards, adherence to state-guaranteed social and other standards for every citizen regardless of residence. So, the State regional policy objectives set out in the Strategy are:

1) improve the competitiveness of the regions via creation optimal conditions for disclosure region's potential and the effective use of the competitive advantages of the regional economy;

2) territorial social-economic integration and dimensional development, that provides firstly fulfilment of objectives and implementation of measures to address the pressing issues of Donetsk and Lugansk regions, the Autonomous Republic of Crimea and Sevastopol; prevent the deepening of regional disparities in access to basic public especially social, communal, administrative, transport, information and other services; creating conditions for regional cooperation;

3) effective governance in regional development provides a basis for an effective implementation of the state regional policy – state mechanism and tool of regional development that will contribute to solving regional problems, primarily requires decentralization of state authority by transferring them to the local level with simultaneous adequate financial resources, improving the processes of strategic planning and execution of tasks at all levels, the introduction of an effective mechanism of coordination of central and local executive authorities, local governments in the implementation of sectoral priorities and objectives at different territorial levels.

The Strategy emphasizes that today the state regional policy in Ukraine has never requires coordination of its objectives and activities with the priorities of sectoral policies. Especially it concerns such areas as transport and infrastructure; economic development and investment; business and regulatory environment; competition policy; labour market; education and research; innovation.

Implementation of the Strategy gives an opportunity to define an integral approach for creation and realization the state regional policy, which will include a combination of the following components:

1) sectoral – improvement of regional competitiveness by optimizing and diversifying economic structure, ensuring effective specialization of regions preferred using their own resource potential;

2) territorial (dimensional) – achieving steady and balanced territorial development, the development of interregional cooperation, to prevent the deepening of socio-economic disparities by creating «growth points», enhance of local economic initiatives and strengthening the capacity of rural socio-economic cohesion and uniformity of regional development to create equal conditions for development rights;

3) managerial – use of common approaches to the development and implementation of the regional development policy, a unified system of the strategic planning and forecasting of states and regions, optimization of the territorial organization of power authority.

However, it should be noted that this analysis for strategy and development program would be better considered after its full implementation, i.e. after 2020.

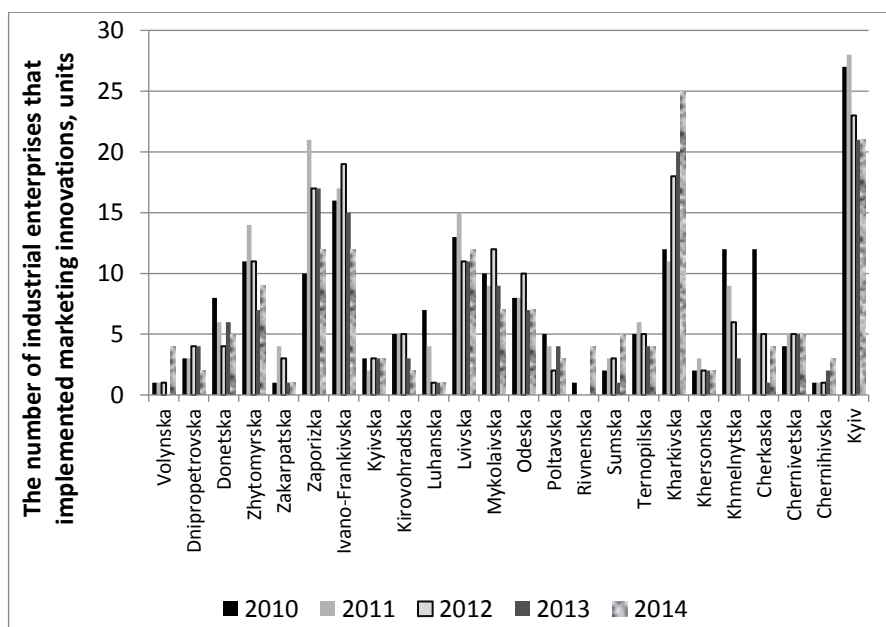


Figure 5.7. The number of industrial enterprises that implemented marketing innovations, 2010-2014 years (based on [1-4])

4. The base of existing/potential customers and business partners – list of business partners, with which the contracts for the supply of a resource, for providing certain services etc. can be signed or signed. The

base of existing / potential customers – this is the list of customers who buy or might buy products or services in the region. This base may be grouped by different characteristics, which are important for the region. E.g. it may be grouped by customers if we consider innovative industrial goods: by activity, by size, by the volume of orders, by the organizational form, by the type of embedded innovation (innovative processes, innovative products, marketing and organizational innovation) and others.

The number of industrial enterprises that implemented marketing and organizational innovations are accordingly presented in the figures 5.7-5.8.

Innovative processes and innovation types of products are presented in the figures 5.9-5.10.

Implementation of new technological processes and innovative types of products at industrial enterprises sorted by regions are presented in the figures 5.11-5.12.

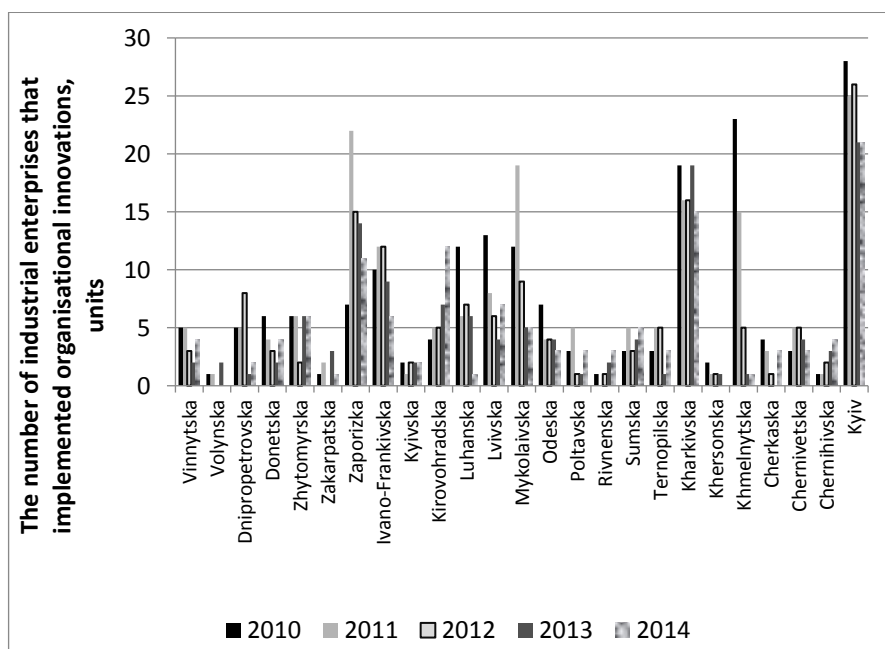


Figure 5.8. The number of industrial enterprises that implemented organizational innovations, 2010-2014 years (based on [1-4])

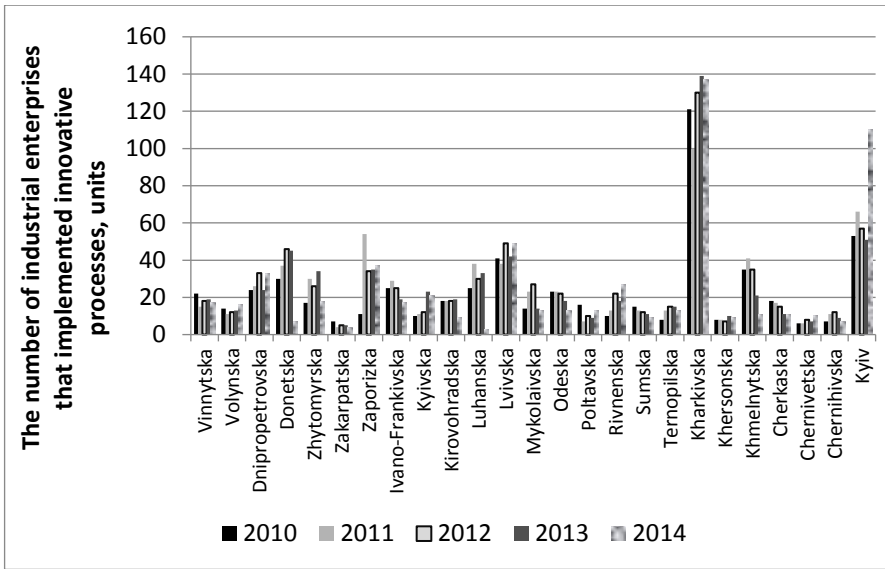


Figure 5.9. The number of industrial enterprises that implemented innovative processes, 2010-2014 years (based on [1-4])

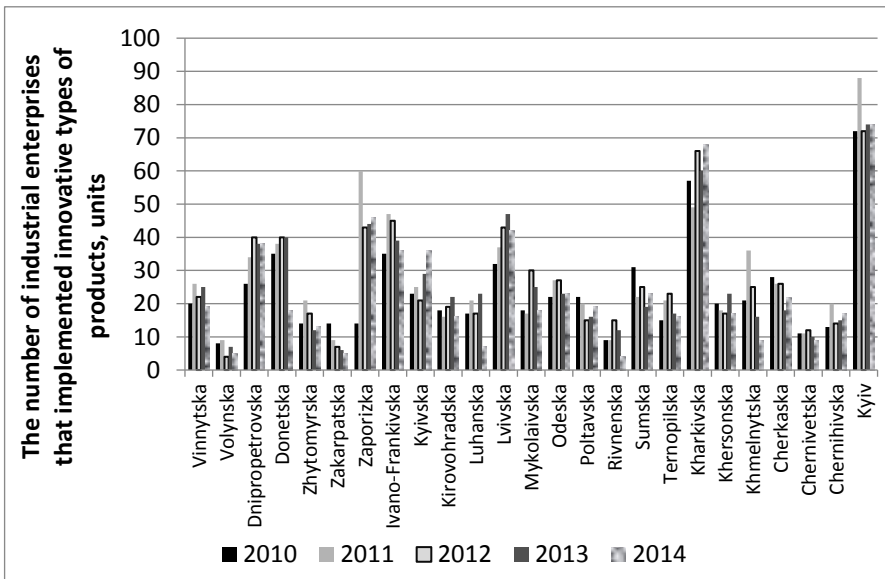


Figure 5.10. The number of industrial enterprises that implemented innovative types of products, 2010-2014 years (based on [1-4])

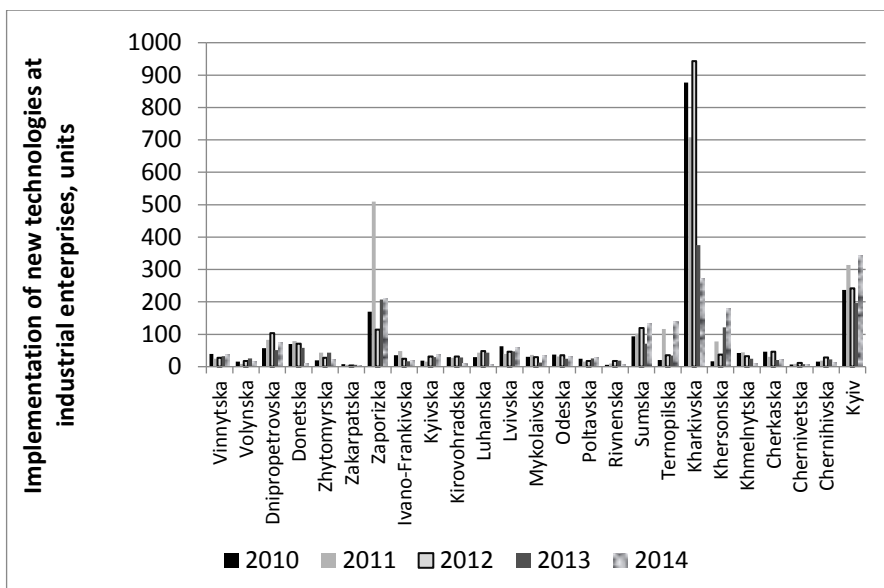


Figure 5.11. Implementation of new technologies at industrial enterprises sorted by regions, 2010-2014 years (based on [1-4])

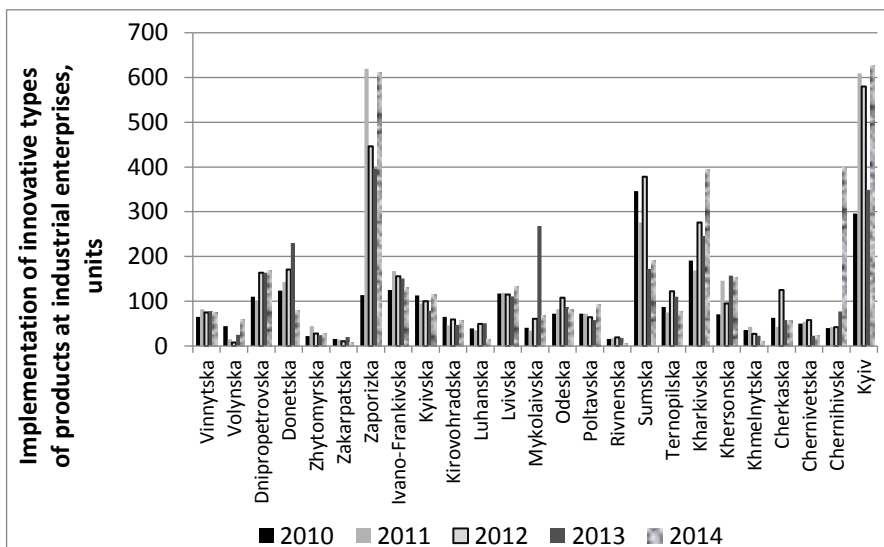


Figure 5.12. Implementation of innovative types of products at industrial enterprises sorted by regions, 2010-2014 years (based on [1-4])

5. *The market position* – determination of the market position of the region now, regarding the market segment value within country or internationally; the number of loyal customers; the number of competitors etc.

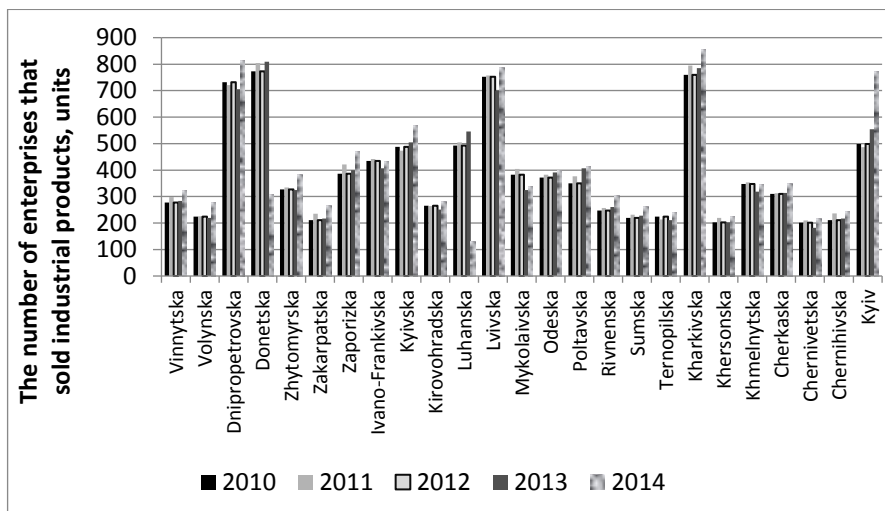


Figure 5.13. The number of enterprises that sold industrial products sorted by regions, 2010-2014 years (based on [1-4])

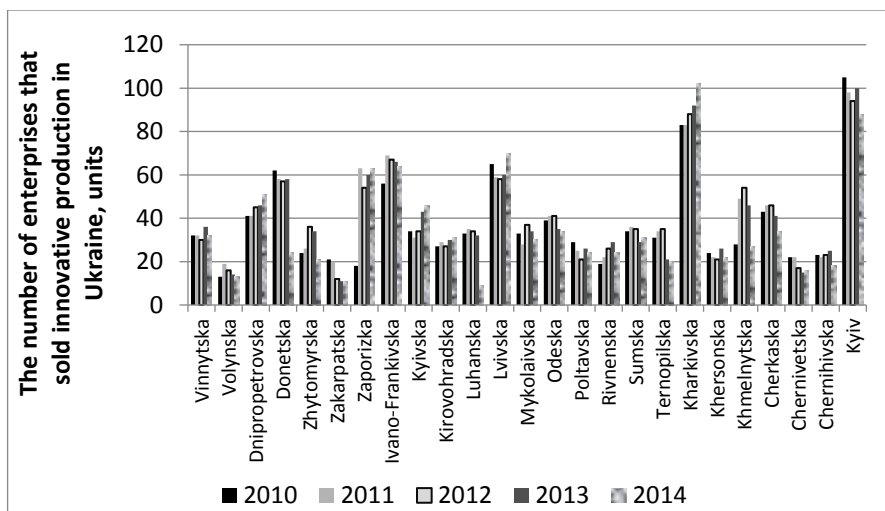


Figure 5.14. The number of enterprises that sold innovative production in Ukraine, 2010-2014 years (based on [1-4])

The market position is considered as the level of activity of regional enterprises in the implementation of the industrial innovations. This component of marketing resources is created by such indicators as amount of enterprises, that sold industrial (figure 5.13) and innovative production in Ukraine (figure 5.14) and other countries (figure 5.15) and related amount (figures 5.16-5.17).

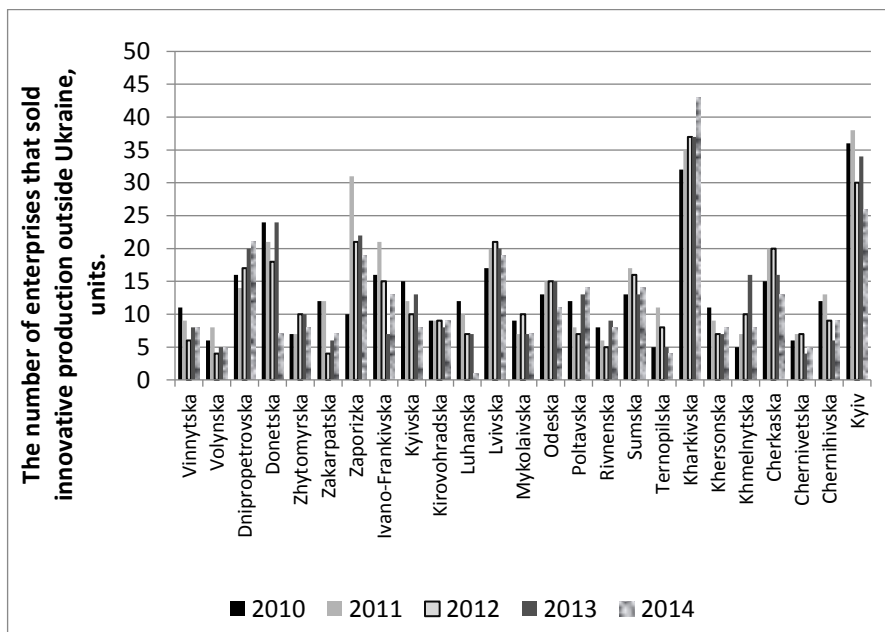


Figure 5.15. The number of enterprises that sold innovative production outside Ukraine, 2010-2014 years (based on [1-4])

6. Created image – an image, a role, reputation, type, forecasted expectations etc. The image characterizes accumulation of various cultural and historical values, since it involves visual and verbal components and gives a better impression. The image of the region shows its economic forth, power, wealth, the level of culture. It is an indicator of local and regional government authority and success at the regional and local level.

This component will be analyzed in base of the study report on the competitiveness of regions of Ukraine for 2010-2013 years, which was published by fund «Effective Management» supported by the World Economic Forum (fig. 5.18).

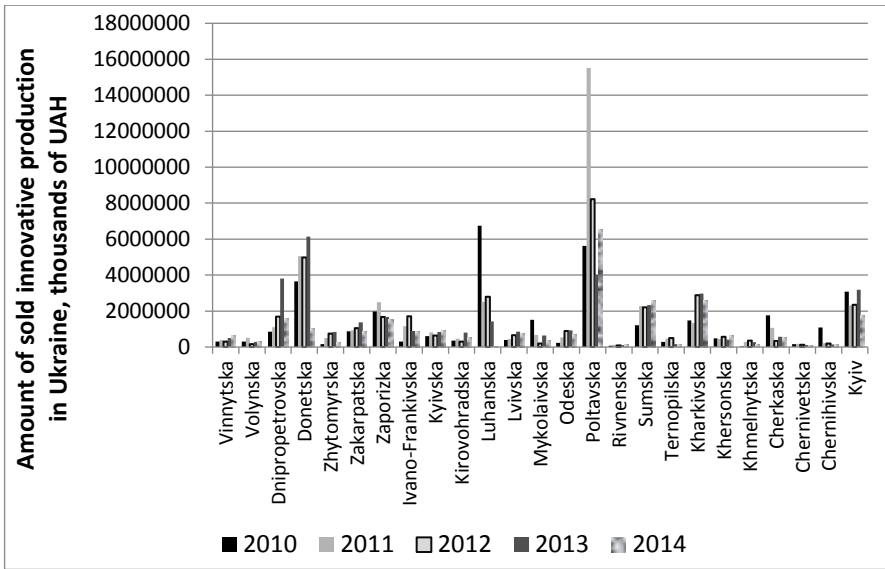


Figure 5.16. Amount of sold innovative production in Ukraine sorted by regions, 2010-2014 years (based on [1-4])

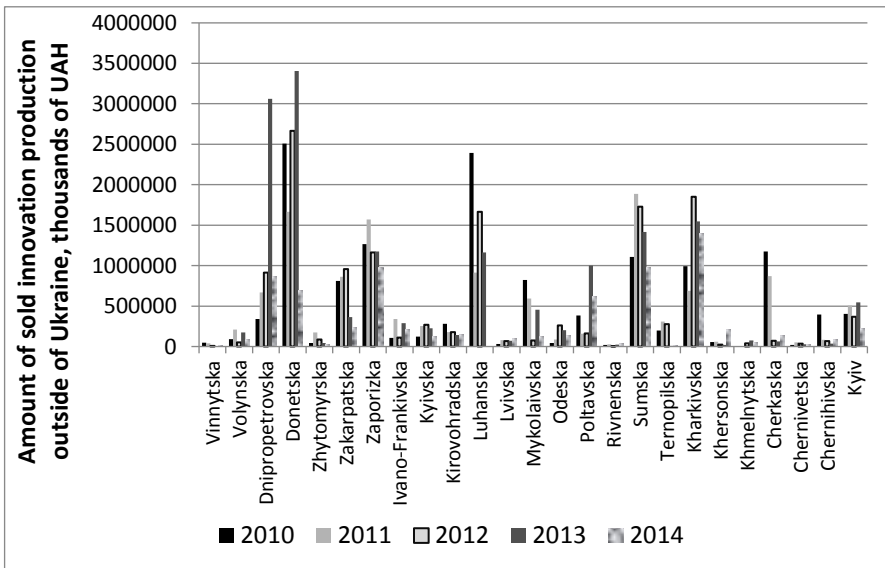


Figure 5.17. Amount of sold innovation production outside of Ukraine, 2010-2014 years (based on [1-4])

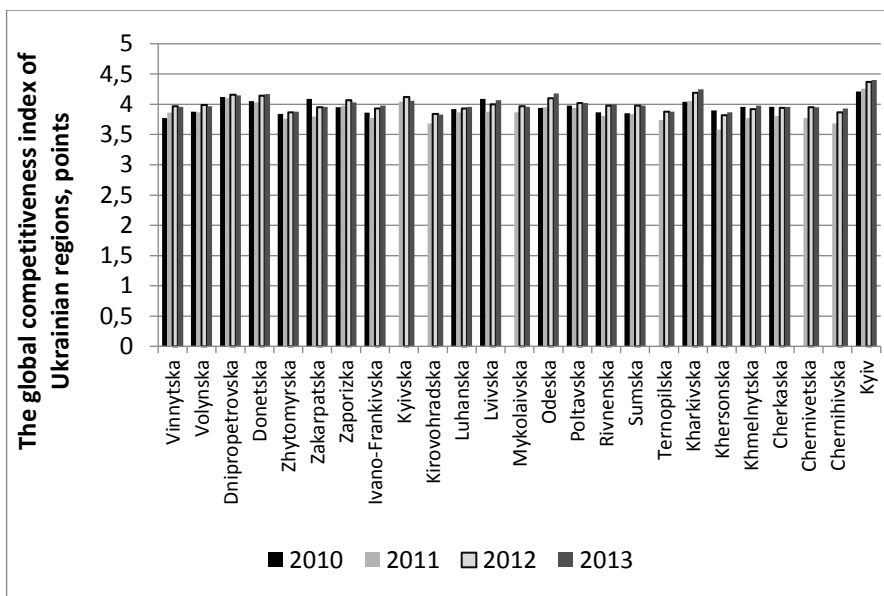


Figure 5.18. The global competitiveness index of Ukrainian regions, 2010-2013 years (based on [5-8])

So, analyzing our data by years, let's define the permanent leaders by every marketing resources' part of innovation aimed industrial enterprises in regions:

1) *the scientific and methodological base:*

- the number of executed scientific and scientific-technical works – c. Kyiv, Kharkiv, Donetsk, Dnipro, Odesa, Luhansk, Lviv and Sumy regions;

- the number of implemented scientific and scientific-technical works – c. Kyiv, Kharkiv, Donetsk, Dnipro, Odesa, Luhansk, Lviv and Sumy regions;

- the number of published works – c. Kyiv, Kharkiv, Dnipro, Lviv, Odesa and Donetsk regions;

- international cooperation between scientific organizations – c. Kyiv, Kharkiv, Lviv, Dnipro, Odesa and Donetsk regions;

2) *special software:*

- industrial enterprises that spent costs on buying cars, equipment and software – Kharkiv and Zaporizhzhia regions, c. Kyiv, Mykolaiv, Lviv and Odesa regions;

3) *The base of existing/potential customers and business partners:*

- the number of industrial enterprises that implemented marketing innovations – c. Kyiv, Kharkiv, Ivano-Frankivsk, Zaporizhzhia, Lviv, Zhytomyr, Mykolaiv and Khmelnytskyi regions;
- the number of industrial enterprises that implemented organizational innovations – c. Kyiv, Zaporizhzhia, Kharkiv, Mykolaiv, Ivano-Frankivsk and Khmelnytskyi regions;
- the number of industrial enterprises that implemented innovational processes – c. Kyiv, Zaporizhzhia, Kharkiv, Mykolaiv, Ivano-Frankivsk and Khmelnytskyi regions;
- the number of industrial enterprises that implemented innovational types of products – Kharkiv region, c. Kyiv, Lviv, Zaporizhzhia, Donetsk regions;
- the number of implemented new technologies at industrial enterprises – Kharkiv and Zaporizhzhia regions, c. Kyiv, Sumy, Kherson and Ternopil regions;
- the number of implemented innovative types of products at industrial enterprises – c. Kyiv, Zaporizhzhia, Kharkiv and Sumy regions;

4) *the market position:*

- the number of enterprises that sold industrial products – c. Kyiv, Kharkiv, Dnipro, Donetsk and Lviv regions;
- the number of enterprises that sold innovative production in Ukraine – c. Kyiv, Kharkiv, Ivano-Frankivsk, Lviv, Donetsk, Zaporizhzhia, Cherkasy, Dnipro, Khmelnytskyi and Odesa regions;
- the number of enterprises that sold innovative production outside Ukraine – c. Kyiv, Kharkiv, Zaporizhzhia, Donetsk, Dnipro, Lviv, Cherkasy, Sumy and Ivano-Frankivsk regions;
- amount of sold innovational production in Ukraine – Poltava, Donetsk, Luhansk, Kharkiv, Sumy, Zaporizhzhia regions and c. Kyiv;
- amount of sold innovation production outside of Ukraine – Donetsk, Luhansk, Sumy, Kharkiv and Poltava regions;

5) *created image:*

- the global competitiveness index of Ukrainian regions – all the regions have almost the same results. But there is a bit higher level in c. Kyiv, Kharkiv, Dnipro, Donetsk regions.

We suggest calculating an integrated assessment of marketing resources based on calculation arithmetic mean values for the analyzed years of relevant indicators (table 5.1).

Table 5.1. The average value of marketing resources indicators in Ukrainian regions by years (cells with bold border contain the best value in region, filled cells contain the worst one [developed by author])

	The number of executed scientific and scientific-technical works, units		The number of implemented scientific and scientific-technical works, units		The number of published works, units		International cooperation between scientific organizations, units		The number of industrial enterprises that spent costs on buying cars, equipment and software, units		The number of industrial enterprises that implemented marketing innovations, units		The number of industrial enterprises that implemented organizational innovations, units		The number of industrial enterprises that implemented innovative processes, units		The number of industrial enterprises that implemented innovative types of products, units		Implementation of new technologies at industrial enterprises, units		Implementation of innovative types of products at industrial enterprises, units		The number of enterprises that sold industrial products, units		The number of enterprises that sold innovative production in Ukraine, units		The number of enterprises that sold innovative production outside Ukraine, units		Amount of sold innovative production in Ukraine, thousands of UAH		Amount of sold innovation production outside of Ukraine, thousands of UAH		The global competitiveness index of Ukrainian regions, points	
Vinnyska	470	279	7426	48	31	4	4	18	22	32	75	292	32	8	433094	21656	3,89																	
Volynska	123	58	5427	75	15	2	1	13	7	17	30	234	15	6	316481	122563	3,93																	
Dniprovska	2517	1800	23903	227	50	3	4	28	35	74	141	741	45	18	1805473	1168713	4,13																	
Donetska	3482	2710	22740	340	41	6	4	33	34	58	150	694	52	19	4164951	2187046	4,10																	
Zhytomyrska	148	70	3443	49	28	10	5	25	15	31	29	339	28	8	498388	74850	3,84																	
Zakarpatska	155	58	2508	85	10	2	2	5	8	5	14	228	15	8	1010209	647220	3,95																	
Zaporizka	995	778	9479	140	64	15	14	34	41	242	437	413	52	21	1868398	1229124	4,01																	
Ivano-Frankivska	754	483	7476	84	47	16	10	23	40	29	146	430	64	14	988654	211715	3,89																	
Kyivska	662	336	2095	51	32	3	2	15	27	27	100	505	38	12	757423	198018	4,07																	
Kirovohradska	527	462	2680	22	24	4	7	16	18	25	55	266	29	9	483199	187233	3,78																	
Luhanska	1469	1166	11413	120	30	3	6	26	17	34	38	433	29	7	2700085	1226946	3,92																	
Lvivska	1866	983	22610	532	76	12	8	44	40	51	119	750	62	19	614099	69650	4,01																	
Mykolaiivska	781	447	5712	61	60	9	10	18	22	29	94	366	32	8	678049	414634	3,93																	
Odeska	2456	1937	16412	317	51	8	4	20	24	31	86	383	38	14	654700	145401	4,04																	
Poltavska	760	517	9886	67	19	4	3	11	18	22	72	379	25	11	7974657	463918	3,99																	
Rivnenska	194	127	3401	35	19	3	2	18	10	12	15	263	24	7	107187	22304	3,92																	
Sumyska	1280	881	8219	83	26	3	4	12	24	104	273	232	33	15	2127356	1423097	3,91																	
Ternopil'ska	174	97	7351	82	23	5	3	13	18	69	94	223	28	7	305444	160232	3,83																	
Kharkivska	8431	6341	53573	836	117	17	17	125	60	635	255	790	90	37	2252483	1294986	4,13																	
Khersonska	275	123	3481	34	33	2	1	8	19	87	124	210	23	8	509219	73402	3,79																	
Khmelnyska	100	63	5011	141	34	8	9	29	21	31	28	342	41	9	222312	34171	3,91																	
Cherkaska	515	446	5918	101	16	5	3	14	24	33	69	319	42	17	858121	462652	3,92																	
Chernivetska	295	109	8215	93	24	5	4	7	11	9	42	202	18	6	129162	31332	3,89																	
Chernihivska	533	71	4324	62	27	2	2	9	16	20	120	224	22	10	359156	133903	3,83																	
Kyiv	19711	13470	96940	1948	83	24	24	67	76	266	492	563	97	33	2531844	406931	4,31																	

Thereby, marketing resources' analysis of the Ukrainian regions with proposed by us structure showed that there is the best provision in c. Kyiv and Kharkiv region, because almost all obtained indicators' (with the same weight) values are the largest: 10 and 5 out of 17 indicators; and the worst – Zakarpatska and Volynska (7 and 6 out of 17 indicators).

Considering that Sumy region does not have the worst value at any indicators, and is presented among the leaders in individual indicators of scientific and methodological framework, existing / potential customers and business partners, market position; we may asses that the region has the resources to ensure its attractiveness and competitiveness of marketing, further development and implementation of creative approaches to marketing management.

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5.3. Marketing and innovative approaches to improvement in the quality of production at the enterprise

Teletov A.S.

In March 1987, during the beginning of the so-called «perestroika» in the newspaper «Socialistic Industry», that was the most authoritative and most widespread publication of that time and was dedicated to the industry, it was formed the thesis about the necessity of quick opening of domestic market. As a result, domestic enterprises will have to compete with foreign enterprises and the quality of goods will immediately increase, the demand will be stabilized, consumers will be satisfied with delivery time and service and so on. Time proved that the above mentioned thesis was fallacious because in three decades the economy of Ukraine (the 8th economy in the world if it would be separated from the economy of the Soviet Union from 4,5% of world GDP) deteriorated to a great extent. At the present time, the place of our country is in the second hundred, and present GDP is less than 1%. It is largely lost high-tech and knowledge-intensive economic sectors, such as aerospace and missile industry, instrument making industry, shipbuilding, automotive and chemical industry, heavy engineering.

Nowadays generalized materials on current statements of the president, government, deputies of Verkhovna Rada from the ruling coalition and the opposition confirm the following: during the last three years the GDP has reduced from \$ 200 billion to 80 billion, the market with Russia is lost for 2/3, that is more than \$ 15 billion and the most unpleasantly thing that it is 60% of domestic engineering export. European Union can increase quotas of Ukrainian goods supply only by 12%, that is approximately \$ 2 billion in value terms and others. In other words, in little over three years, more and more large industrial enterprises reduce their production or even go into bankruptcy; the number of employees at these enterprises declined by about one million people, the level of constant monthly inflation is equal to the annual one. Thus, not only pensioners, unemployed and unskilled workers, but also highly skilled workers, scientists, professors, teachers, doctors and public servants are in the risk category. Nowadays we have an available deindustrialization of Ukraine, loss of professional skill by employees, a critical decrease in productivity, 85% of assets are worn out and almost cannot be restored, along with external markets, which provided a significant influx of foreign currency, new working positions, that contributed to market competition and technological innovations, domestic commodity producer

has largely lost the domestic market. As a result, over 80% of goods and services in Ukrainian economic space is imported.

Under these circumstances, Ukrainian enterprises face the problem of improvement in the quality of production. At the end of 80^s of the last century leading machine-building, instrument-making, shipbuilding, automobile, aircraft-construction industry enterprises of the Soviet Union, according to [1] determined the assessment of product quality by means of comparing the set of quality parameters of the created product (project, model, development) and set of quality parameters of the existing product (produced by certain enterprise, partner or competitor, typical analogue).

It should be noted that over the past 25 years the situation related to the release and consumption of production has changed significantly. The globalization of world markets led to almost annual changes in fashion, the development of global information networks and mobile communications change consumer properties of goods inasmuch, that a significant number of consumers is forced to replace functioning goods by newer and more sophisticated products. More and more products are manufacturing nowadays, that are practically beyond repair, and people simply dump them because of their low price. For example, a quarter century ago population at large returned empty glass bottles and a bottle was used three times on the average. By the way, the price of an empty bottle was as the price of a loaf. Today only alcoholic drinks are produced in glass containers and original bottles of every vodka distillery are not returned, and customers mostly dump them, and package of soft drinks is for one-time use only. Similar approach is used to electronic devices. After passing two or three years guarantee and product is deteriorated, its repair mainly costs much money and the owner faces a dilemma: to repair or buy a new device, which usually has more advanced functionality. This approach can be applied to almost all devices, from copying machines to tablets and mobile phones.

On the other hand, it is known that most foreign countries are only interested in raw materials, semi-manufactured goods and materials, as production of deep processing with high added value in international markets already has its producer. Even the Eastern European countries, that joined the EU, retained old target markets of traditional export commodities of the first repartition, but they have lost almost all high-tech industries. That's why, unfortunately, in Ukraine it is unnecessary to expect the obtaining of excessive profits in certain sectors, now it is important to gain at least the restoration of real economy, the creation of sufficient workplaces, ensuring of uniformity and proportional development of regions, and so on.

Despite the already mentioned GDP contraction during the last three years, the weakest manufacturers' link in the modern marketing activity of industrial enterprises is market researches, which companies conduct insufficiently and use ineffectively results of these researches.

Consequently, top management, developers and product manufacturers must finally understand that the development of new types of production, patents, know-how and so on, follow after the results of market researches concerning the development direction of the industry, the enterprise, consumer needs for commercial release in accordance with the so-called «main road of product development»; progressive ways of the variety of products are indicated within it, and blind ways are indicated beyond this «road» [2]. In other words, systems of product development and product supply at the place of production have to focus on today's challenges of scientific and technical progress: more rational technical solution of the model or creating a more rational structure, or even changing the physical operating principle of the product. That requires the generation of technical ideas aimed at advancing changes in general slow changes of technological progress. A gradual change of products construction regularity is considered to be the law of progressive construction evolution, that is described in [3].

For instance, the tendencies of electronic equipment development make it possible during the preparation of marketing strategies for consumer goods, that meet the real possibilities of scientific and technical progress, to create products that meet both current market requirements, and requirements for construction technical solutions for analogue products. This also can be applied to consumer goods, industrial goods and piece-production goods, whose comparative features according to the principles of creation are given in the table 5.2.

Table 5.2. Comparative features of product groups

Types of products	Marketing dependences	The sequence of new products creation			
		1	2	3	4
Consumer goods	Market dependences are well-known	Development	Production	Promotion	Distribution
Industrial goods	Demand depends on the technologies of usage	Development	Promotion	Production	Distribution
Piece-production goods	Demand changes drastically	Promotion	Development	Production	Distribution

Coordinated in such a way connection of trends of construction products evolution of a particular class with innovative and marketing management philosophy gives an opportunity to start efficient development and production of more advanced and competitive products of relevant varieties of consumer and industrial goods. As it is known, the volume of GDP and exports from Ukraine are reducing from 2014, hryvnia is devaluing, because Europeans are only interested in raw materials, semi-manufactured goods and materials as production of deep processing with high added value in European markets already has its producer. In the near future there is no point to wait for improving of economic situation in Ukraine by strengthening connections with EU countries, because Eastern European countries that joined the EU, retained old target markets of traditional export commodities of the first repatriation, but they have lost almost all high-tech industries. That's why, unfortunately, in Ukraine it is unnecessary to expect the obtaining of excessive profits in certain sectors, now it is important to gain at least the restoration of real economy, the creation of sufficient workplaces, ensuring of uniformity and proportional development of regions, and so on.

As it is known from [4], comparing most consumer goods, the value of the cogency of their simple quality indices are approximating to be equal. The number of these simple indices is limited. It is caused by the fact that a large number of varieties and producers forces to continuously improve those consumer options that at this point in time don't meet consumer requirements leading to a certain leveling of their scales.

For goods that belong to consumer goods and according to the complexity (design features, manufacturing technology, the number of components, units and their so-called «applicability») are approaching to common item (a car, for example), the same coefficients of cogency have simple quality indices within the group indices (functional indicators, indices of quality, patent and law, etc.).

For goods of personal use and complicated industrial goods (machines, aircraft, etc.), each of simple quality indices describes a specific property and has its own cogency coefficient. Here, firstly, technical parameters have the priority over the price, and secondly, the value of any simple quality index can be much more significant than others. For example, if we take into consideration the resolution ability of one or another device for scientific research or flight elevation of a strategic bomber, it is natural that these important parameters will also have the greatest importance [4].

Besides, during the introduction of both primary (technical innovations) and secondary innovations (organizational, economic, social, legal, etc.) [5], industrial enterprises should strictly follow cyclicity (table 5.3),

that is the optimal combination of all kinds of cycles among themselves, and give the possibility to keep high-tech industries at least partly at the beginning, and then to expand and improve them successfully.

Table 5.3. Cyclicity in commodity producing sector

Type of the cycle	Life cycle	Who is responsible
Production cycle	From receiving procuring materials to suitable for operation status	Managers of production units
The cycle of product existence	From the beginning of the operation to separate product utilization	Designer, technologist
Product life cycle	From the realization of the first product sample to complete production end of this kind of product	General manager, marketing specialist

System of design and production engineering is ensuring the stability and improving the parameters of the production, that meet the requirements of the international standard ISO 9001 [6]. This standard gives general description of optimally organized production, and its two basic principles are system and process approaches. The final product is the result of the product life cycle processes, products and production, and their measurement is essential for quality prediction.

The introduction of the latest version of ISO 9001:2015 showed significant changes in the environment over recent years, the accumulation of new knowledge, international management practice. The need to establish a quality management system has to become a strategic solution of business developers and producers of goods and services.

The implementation of a quality management system on the basis of new standard ISO 9001:2015 involves the ability to consistently supply products and services that meet consumer requirements by legislative acts and regulatory acts; gives the opportunity to facilitate the realization of possibilities to increase the level of satisfaction provided by goods or services; gives an opportunity to demonstrate compliance with established requirements to the quality management system of the manufacturer or the company-developer.

Thus, management system ensures the implementation of secondary innovations by means of functional activity of managers, marketing specialists, economists, sociologists, lawyers. A consumer practically doesn't feel any of these innovations, because a buyer usually is interested in the extent and quality of meeting requirements by the purchased goods, and property category of the enterprise, profits, salary level, working conditions, the level of social protection of workers and so on are not interesting for the consumer. Consequently, secondary innovations concern quality

and working conditions of the personnel and they can be attributed to innovations at the specific industrial enterprise, table 5.4.

Table 5.4. Structure of general functional tasks according to levels of decision making at the industrial enterprise

Levels of decision making	General functional tasks	
	The purpose and essence of innovations	The compliance with standard requirements and evaluation of innovations effectiveness
Operational management	Activity optimization of the aggregate of administrative, technical and production subdivisions of the enterprise	Saving a minimum value of product manufacturing cycle duration
Strategic planning	Forecasting and planning under conditions of an uncertain market environment	Compliance of plans with forecasts and real economic situation
Production design engineering	Integration of marketing, research and production activities into management system of the enterprise	The maximum life cycle of each specific product model

According to the above-mentioned information, fundamental training of marketing specialists in Ukraine should be largely rebuilt. Unfortunately, despite the strong development of marketing as a science and speciality at higher institutions, during a quarter century of proclaimed in Ukraine market (transitive, transformation, etc.) economics, marketing has not become a philosophy and ideology for the majority of manufacturers of industrial products [7]. Nowadays it is possible to confirm that modern production can't exist without marketing, and paraphrasing a famous winged phrase, to say: «Production is blind without marketing, marketing is dead without production». The so-called high marketing level [8-9] confesses less than 10% of industrial enterprises. For example, only in few places the second person in the hierarchy of the industrial enterprise is the deputy director general from marketing, although nowadays it is possible to confirm that modern production can't exist without marketing, and paraphrasing a famous winged phrase, to say: «Production is blind without marketing, marketing is dead without production». Thus, there is no doubt that marketing, product development and its production have to make advances to each other and understand, that their main common aim is innovativeness, both primary, that is to create new products, and secondary one, that is new control means, new economic and mathematical models, new stimulating methods to work in modern social and legal norms.

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Section 6

Marketing of innovations and its role in the innovative activity

6.1. Models of strategic business reconstruction for the management of significant changes in the enterprise activity

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It is necessary to take into consideration that increase of the overall competitiveness of the national economy largely depends on the degree of development of the most perspective companies in the country. Any market participant can be called a perspective one, if sufficient financial and managerial resources are invested in them in such a way, that they give the desired resulting effect in the form of growth in incomes, modernization of production, company reorientation to import substitution. Extremely unstable state of modern Ukrainian enterprises confirms the need to continuously improve their internal business processes. The survey of business representatives in the third quarter of 2016 showed, that the main negative factors of enterprise development remain the unstable political situation and high prices for energy sources [1]. In general, respondents expect recovery of the economic activity during the next 12 months. The most optimistic expectations have representatives of Volyn and Rivne oblasts, and the most pessimistic expectations are in Kherson, Khmelnytskyi and Odesa oblasts.

In conditions of the unstable environment it is important to establish and implement a substantially new enterprise management system and its reaction to the challenges of the environment is strategic changes, an effective use of positive changes and countering of negative ones.

Strategic nature of changes is connected with radical, essentially important for the enterprise transformations of long duration, which are essential for the processes of effective functioning and contribute to its development. Such a direction of changes and their management involves development of the appropriate management tool, that is a complex of methods, technologies, ways that provide enterprise reorientation to strategic benefits, transformation of leaders' thought and personnel support for the successful implementation of changes.

The analysis of existing changes in modern enterprises makes it possible to conclude that they generally can be divided into four groups:

1) Strategic changes. It is a rethink of strategic and tactical development directions of the entity.

2) Structural changes. They include changes in the distribution system of works, duties and responsibility of individual workers and entire departments.

3) Changes of technologies and aims. As a rule, that are changes of technologies and the operating schedule. The introduction of new manufacturing, information technologies and changes connected with ensuring of their functioning are determining.

4) Changes in personnel management. Their main purpose is to improve the effectiveness of functions performing by the general staff of the entity.

To apply and successfully implement any of these changes, there should be a number of conditions: top management commitment to the proposed changes; a clear vision of the company as a result of changes; the availability of conditions that will prevent the possibility of returning to the past; the probability of support by generality of workers; the possibility of long-term perspective; conviction that the change must surely occur; readiness to involve necessary resources.

There are some causes of resistance to change: selfish interests, when employees put their own interests above the interests of the company; misunderstanding of the strategy, which occurs, as a rule, due to insufficiency of knowledge concerning goals and ways of implementation and possibilities to assess the impact of the chosen strategy; various results of changes impact assessment that are connected with the ambiguous perception of strategic goals and objectives; low change tolerance, which is characterized by fear, that workers will not be able to acquire new skills and get used to new working conditions, that is extremely necessarily during implementation of new technologies, management techniques, new forms of reporting etc.

In economic science changes are understood as the process of entity development from the current state to the desired future state that is determined by the management [2]. The author understands significant change management as a stable, predictable, scheduled comprehensive implementation of recommended instruments by their skilled developers to achieve long-term goals of the company development. The visualization of the concept of «significant changes» in the system of company changes is represented on the figure 6.1.

Significant changes are understood as a renewal of the company, that is a natural process, caused by the necessity of highly efficient transformations for the entity. Other types of changes (subjective, natural, adaptive, etc.) are mostly focused on the sustainable enterprise development or its adaptive functioning and adjustment to changes of external

environment and modifications of internal factors that affect the management system as a whole.

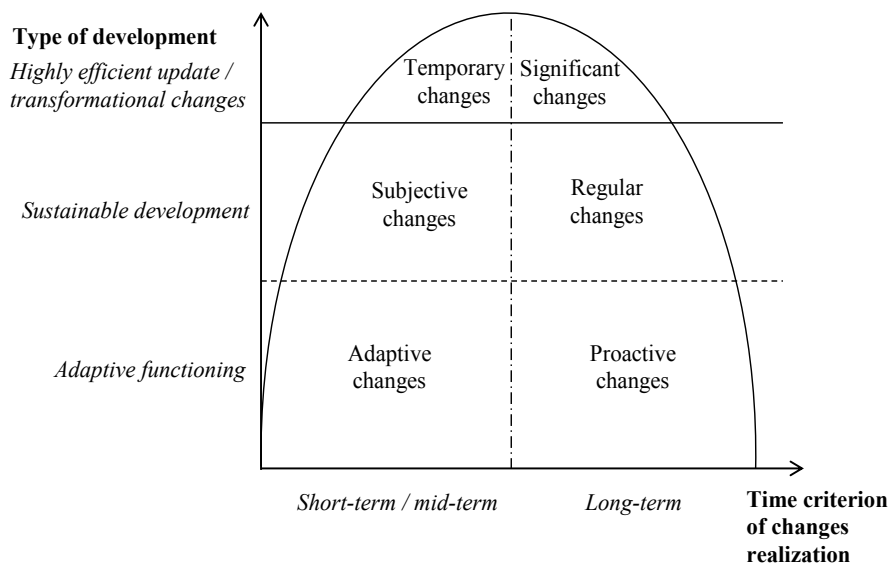


Figure 6.1. The place of significant changes in «the system of changes» of the entity

Significant changes shouldn't be confused with the so-called «change monsters», that is a universal definition which was firstly used by Jeanie Daniel Duck, who was the senior vice president of «The Boston Consulting Group». By this definition he described complex and sometimes emotionally rapid processes that break out suddenly like a mythical pop-up dragon from the watery depths, often unwanted changes.

In the practice of change management implementation of the enterprise it is distinguished the range of highly efficient standard and innovative models (table 6.1).

After analyzing the existing models of change management of the enterprise, it is possible to affirm that the current economic conditions of domestic enterprises put forward drastically new demands to the system of change management in terms of its effectiveness. Therefore, an effective change management in enterprises should be based on the principles of the integrated approach, that is selecting the most effective existing models and their integration/development of new approaches to the change management. It should be noted that within the integrated approach it is relevantly to follow such principles as: a clear taking into

consideration the timing changes; an attempt to avoid a high degree of resistance to change; taking into account the potential risk and levelling of devastating consequences of excessive risk; coordination of change management method with strategic intents of the company; participation of leaders in the management of the entity at all levels; coordination of business processes with environmental conditions during the planning and practical implementation of significant changes.

Table 6.1. The essence of restructuring business models based on the changes implementation (fragment)

Model name	The model principle	Stages (levels) of changes in the model
The model of change «stability» by K. Lewin (the model of change management «Field of force») [3]	It is based on the principle «make a frog ready». The rate of changes in the market is continually growing, and in order the company could effectively adapt to them, it is necessary to understand the main stages of changes, and the most importantly is to comprehend instruments which can bring maximum effectiveness for the entity. «If a frog is put suddenly into boiling water, it will jump out, but if it is put in cold water which is then brought to a boil slowly, it will be cooked»	Defreezeing, implementation and freezing
Transition period model (a «break-through» model) [3]	In the model everything, that makes it difficult to achieve the ultimate goal, is called «the resistance» (systematic or behavioral). To overcome systematic resistance during the change management of the company, programs of training and consulting support for «change agents» are necessary (for executives at all management levels, key experts, corporate trainers) [4]. In the case of behavioral resistance initiatives play a crucial role in the development of such an important component of economic culture as the entrepreneurial culture. To detect this form of resistance it is reasonable to identify interested parties, stakeholders	Awakening, changes, ordering
Change management model «Iceberg» by W. Krüger [5]	At the level of surface management it is maintained the control of such areas as cost, quality and time. At the level of depth management it is maintained the control of perception and beliefs, authoritative and political powers. Real (significant) changes require deep changes of employees' behavior and their values	Surface management (top of the iceberg), depth control (bottom of the iceberg)
The «EAS-IER» model (the model of «Six steps») [5]	It is used to analyze the overall strategy of changes. It is applied in situations of any complexity that is associated with changes	Creating a vision, activation, support, implementation, maintenance, approval

Table 6.1. continuation

Model name	The model principle	Stages (levels) of changes in the model
The «ADKAR» model [6]	It is used in change management in business groups and other social groups. Its basic idea is the following: to provide an effective management of changes in a group, firstly it is necessary to learn how to promote changes of each individual team member	The description of stages and necessary resources which are necessary for a person to change in one way or another
The model of limited changes [7]	It is foreseen that sources of changes are experiments or «splitting ice» events. «Splitting ice» events are events that are often unplanned, that «defreeze» the situation (publication about the new method of management, change of the management, local stressful situation in the team, etc.). Experiments include planned actions to change something	«Experiments» or «splitting ice» events
The model of a successful change management by L. Greiner [2]	A six-stage consistent process of change management in the company, that is based on identifying the factors that are putting pressure on the entity, engaging an external consultant or employees as mediators	Pressure and motivation, mediation and attention re-focusing, diagnostics and identification of specific problems, solution of the problem and ensuring the commitment to implement a new direction of changes, experiment and identification, support and consent
Change management model of «8 Steps» by J. Cotter [8]	The break in succession of recommended changes or waiver of any step lead to the illusion of rapid changes, but turn away from the desired result	It contains four stages, including eight steps of radical transformation of the company
The model of «change curve» by D. Duck [8]	The process of changes must include a sequence of predictable and controlled events, that are dynamic stages. This sequence is called the «change curve». All programs of changes must go through these stages	Five stages beginning with the phase of stagnation, then the stage of preparation, implementation and verification of strength, and concluding with the goal achievement
«The cube of changes» by H. Mintzberg [9]	Measuring of changes in three dimensions. The author notes that during the period of organizational changes it is necessary to consider and take into account both the left and the right sides of the cube	There are two main dimensions of changes on the front face of the cube. The left face of the cube contains changes associated with the chosen strategy of the company; the right one contains changes connected with the enterprise and its state at the moment

For many years researchers in the sphere of management of an enterprise have been offering various approaches to improve the efficiency of enterprise functioning: innovative and marketing programs, outsourcing of personnel's secondary functions, know-how to enhance the value of assets, improving of the organizational structures and so on. However, it should be noted that all these actions are fragmentary ones and do not guarantee that business efficiency will actually increase. Analysis of application of the instrumentarium concerning strategic changes management in domestic enterprises [10] showed, that most of the entities put into practice the following methods: controlling (all of the respondents), methods of risk analysis (100%), financial and economic analysis of changes in the state (100 %), outsourcing (80%), strategic analysis and accounting (29%), benchmarking (29%), coaching (17%). The most common ways to implement changes were the following: reorganization (24%), restructuring (58%), modernization (53%), reconstruction (29%), redesign (23%), re-orientation (11%).

One of versions to represent the model of changes implementation of the enterprise is a comprehensive reframing. It is pertinent to say that many companies are not even acquainted with the reframing technology as means of strategic changes management of the company. The key concept of reframing technology is the frame of the enterprise as a conventional model concerning the company's operating efficiency. The content of the term consists in the fact, that the value of enterprise efficiency is limited by a lot of factors both of external and internal environment. The frame of the enterprise has two levels that interact: the basic level that reflects the «consciousness» of the company, and the subsidiary level, that is a system of indicators that reflect the operating efficiency of the company in several ways. The basic frame is a system of company's business ideas that are usually united by one strategic intent, that forms the system of changes. Strategic intent is a formed image of the company's ultimate goal, which requires the development of new institutional and economic instruments, which help to achieve effectiveness of any development of the enterprise, including innovative, and planned strategy, at the same time compensating its complications through the usage of new technologies.

The term «reframing» is borrowed from the field of psychological knowledge and means reorganization, the procedure of rethinking and restructuring of thinking on the basis of replacing the mechanisms of perception to get rid of unsuccessful patterns. Speaking of business environment, it is reasonable to interpret reframing as significant changes in the structure of the entity, based on the current situation of the economy and aimed at achieving maximum performance of the

company in future. According to the theory of F. Gouillart and G. Kelly, reframing is a definite displacement in the conception of the management about the current state of the company and what it can really achieve [11]. The world business practice confirms the necessity to provide a constant analysis of operating results of any entity and to identify possible problem areas at early stages, before devastating consequences, and to identify their causes. G. Bolman and Terrence E. Deal represent reframing as an instrument for analyzing the current state and awareness of new variants of choosing the development ways and finding effective management decisions [12].

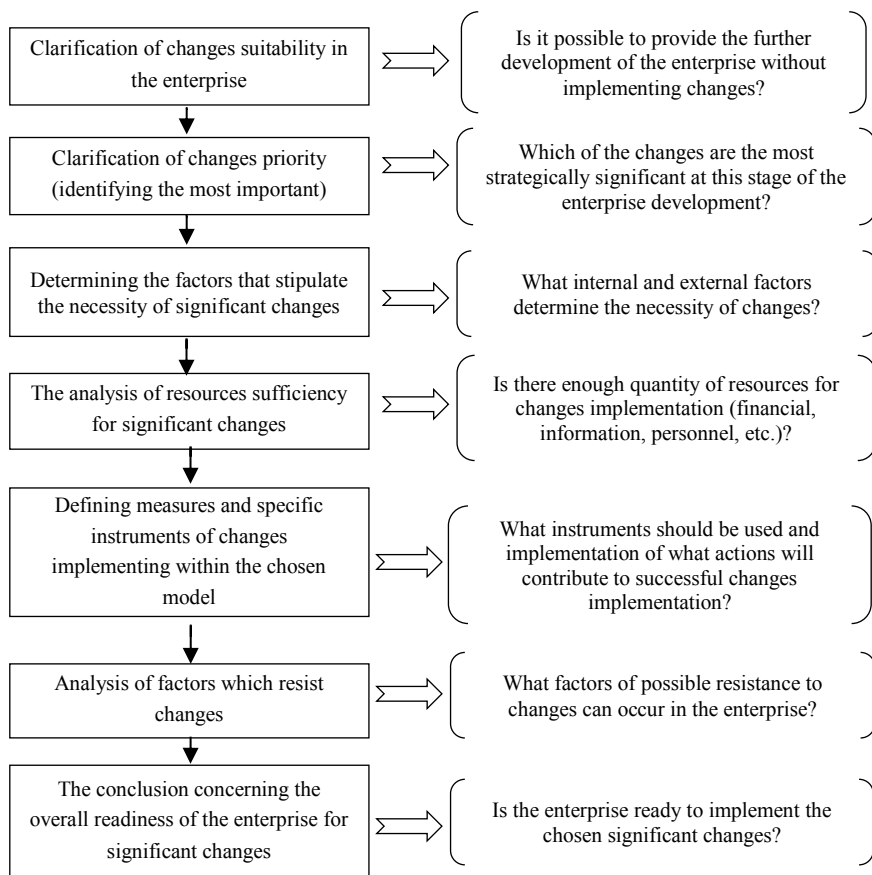


Figure 6.2. The analysis of the enterprise readiness to implement significant changes according to the chosen model of business restructuring

The expansion is an obligatory condition for strategic intention in the context of reframing. During the full realization of business ideas, the company puts new larger problems (new frame). Thus, in such a way is realizing the content of the conception to constantly reach new heights. The actual problem for the head of the company is to form strategic intent and realize it. To realize the intent, indicators of the intent achievement are necessary. The development of indicators framework and their analysis makes it possible to analyze whether actions match the goals. There are situations when the company sees prospects, set of goals, but operates completely according to other standards and all resources are directed not for performing the most promising intentions.

The readiness of the enterprise to implement significant changes can be determined through a list of tasks and their contents (figure 6.2).

The groups of indicators that determine significant changes in the company, the so-called «reframing indicators», include marketing, financial and economic, social and ecological, organizational (business processing) indicators:

- marketing (market share occupied by the company, the level of competitiveness, customer loyalty index, etc.);
- financial and economic (indicators of profitability, financial security, investment performance, etc.);
- social and ecological (indicators of staff turnover, social security, environmental orientation, etc.);
- organizational (personnel skill level, the level of corporate culture, the effectiveness of existing organizational structure, etc.).

Thus, the study found that from the number of models concerning business restructuring, in order to make significant changes in the company, it is appropriate to choose the most promising changes under the current state of the market and the entity with their integration or implementation of new instruments for significant changes management, such as «reframing», which hasn't gained popularity among domestic entrepreneurs yet.

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6.2. General theoretical provisions of a company marketing strategic planning

Peresadko G.O., Pidlisna O.V., Gromyko N.G.

Strategic planning process is the central step in marketing strategic planning management system of any industrial company.

Strategic planning is a special type of practical activity and practical work that includes development of strategic decisions (in a form of forecasts, projects, programs, plans and scenarios [1, 2]) that provide for certain goals and behaviour strategies of the respective management resulting effective functioning in long-term prospective and prompt adaptation to variable external environmental conditions. The result for that is an approved company goal and development of current activity plans for achievement thereof.

Company strategic planning has the following features:

- orientation to medium- and long-term prospectives;

- focus on addressing key and important goals of planned sub-system which achievement influences functional burden;
- harmonical composition of set goals with the scope and structure of resources needed for their achievement, both already available and those to be created or attracted during the planned period;
- considering influence on planned object of many numeric external factors influencing positively or negatively, including development of measures aimed to maximum neutralization of such negative influence or effective application of opportunities for successful resolution of sub-system tasks. The purpose of strategic planning is to define certain order of steps to ensure gaining marketing goals. Time horizon, i.e. time frame of planning is an important criterion. If twenty-thirty years ago, specialists provided for ten-years' planning, now it is much more shorter and may be three or even one year.

Modern planning activities professionals tie planning horizon with the goal; i.e. if a certain goal has to be achieved within two years, so planning horizon will be two years.

The content of strategic planning may be shown through its main procedures: forecasting, programming and planning.

Theoretic and cognitive meaning of forecasting includes learning and improving of methods and methodologies related to forecasting, determining environmental trends and factors facilitating their emerging and existence.

Marketing aspect of forecasting includes using forecasts of exogenous factors to create basis of scientific approach to managerial decisions at the stage of their preparation. Forecasting provides for description of possible and desirable aspects, states, solutions, and problems in future.

Scenario planning is one more instrument for marketing strategic planning. Scenarios drawing method has been used in strategic management and marketing for relatively short period, starting from 70s-80s of the previous century and has been actively developed.

Scenario planning is methodically designed instrument allowing to gain important information to make key company development decisions [3, 4,5].

The essence of scenario planning is shown in figure 6.3.

Marketing strategic planning may be used by the companies to foresee possible outcome when entering a new market or new product placement, implementing of new marketing instruments, realisation of promotion campaigns, etc.

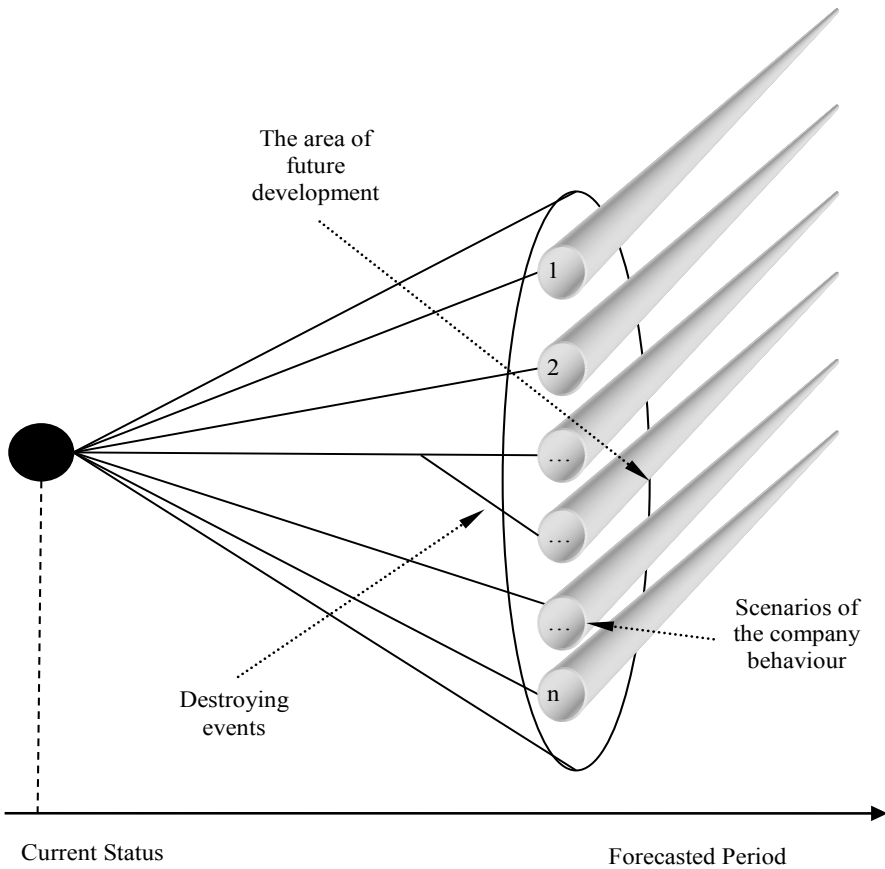


Figure 6.3. Scenario planning model X. Geshka [8,9,10,11]

If managers possess information on sequence of events in planned period, they can manage the situation more effectively due to previously developed reaction scenarios, rather than they face situations in real-time mode and are forced to manage situation promptly [6, 7]. That logical statement is continuously confirmed by experience of the most successful countries in the world.

Those companies which had previously developed scenarios of their reaction to the world financial crisis events reacted much more effectively and faster to challenging environment. As the result, they remain stable even during a crisis and post-crisis period.

Sciences have polar attitudes to scenario planning and their views differ from those of practicing managers.

That is quite logical and may be explained by various reasons, for example:

- lack of professionals experienced in scenarios development;
- impossibility to assess the effectiveness of scenarists' work in current period, as scenarios are developed as the rule, for indefinite future period.
- expensive work, etc.

Now, scenario development procedure is not very popular. Scenarist usually works under his/her own algorithm appropriate for him/her. At the same time, when making scenario, one must consider the necessity in certain procedure steps shown in figure 6.4.

Unlike scenarios, plans, projects and programs as strategic planning instruments are more methodically and practically developed.

Plan concept has several definitions; we believe that one of them is the most suitable for marketing strategic planning: previously established order, sequence of program (work) drawn up for certain period stating its purpose, content, scope, methods, means, order and deadlines.

Strategic program is a coordinating targeted document which is the system of interrelated, economically and scientifically grounded measures (social and economic, research and technology, organisational, commercial, etc.) agreed by deadlines and doers (co-doers) and ensured by all necessary financial and material and technical resources.

A program includes certain program measures which content depends on program aiming to certain strategic goal.

Project is one-time set of goals, tasks and actions with system-based features with regard to interrelation and order of actions, allocated resources and assigned doers.

Strategic planning instruments are used and shown in strategic marketing plan individually, depending on certain strategic goal, its scope, difficulties in its achievement, environmental conditions, relevance of planning established in an organization, managers' expectations, etc.

Study and analysis of practical activity of certain companies shows that a document having the said topics, may have different names: «company strategic development plan»; «conceptual directions of company development», «basic reference points of a company business», etc.

Foreign and domestic experience allows to think that according to its structure and purpose, such document is a company strategic development plan.

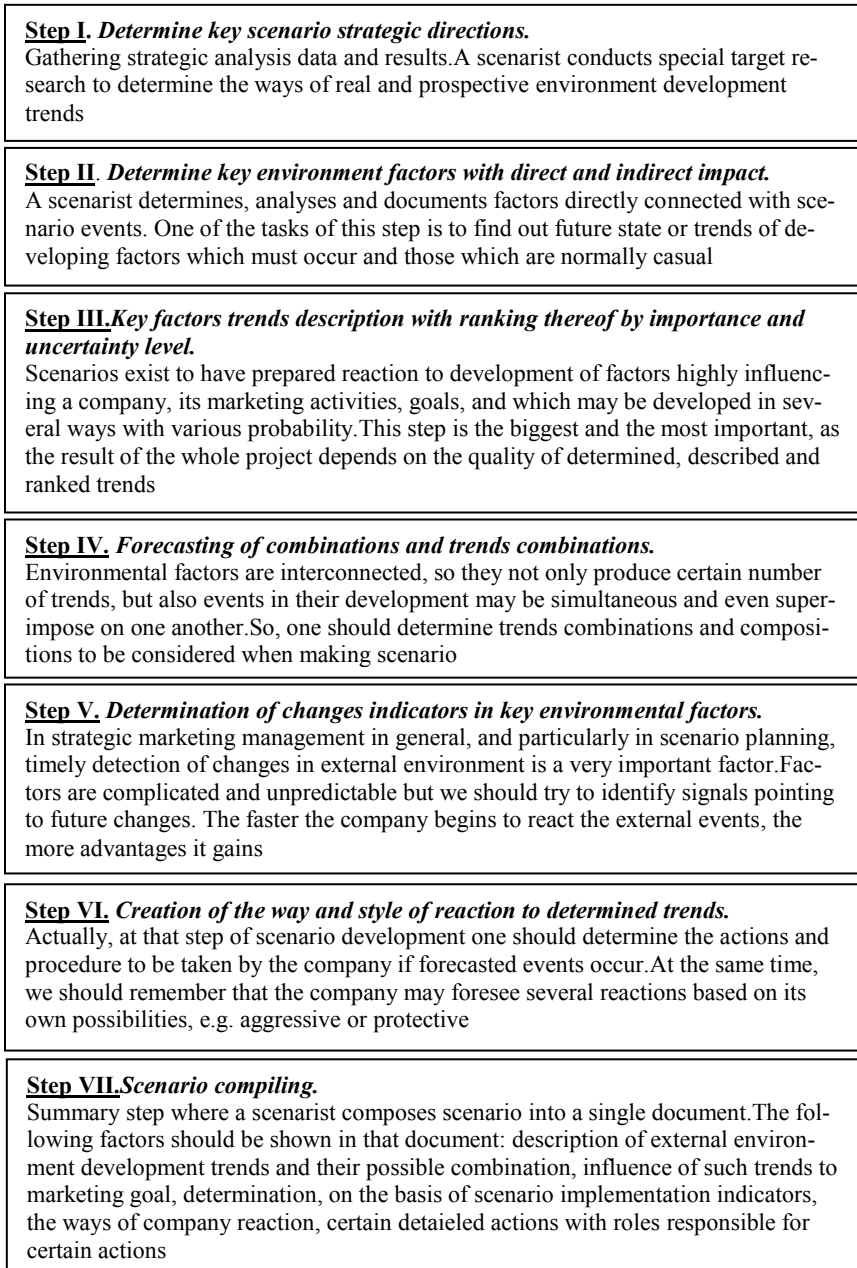


Figure 6.4. Company scenario planning pattern

Company development strategic plan may have the following sections:

- mission;
- strategy;
- long-term goals;
- characteristics of market and company positions;
- characteristics of target markets and the company share in such markets;
- trends of company business financial indicators
- comprehensive SWOT analysis;
- concept directions of company development;
- prospective factors of company positioning;
- short-term (1 year) goals of company development;
- instruments for implementation of company development.

So, as a rule, a company strategic development plan starts from identification of a company mission. Unlike business philosophy that means the ideas of a company management about a company future and based on managers' values and emotions, «mission» is defined as the set of individual company characteristics including the main goals, business features, the main characteristics of goods, main values and attitude to market and competition environment.

«Strategy» is the second popular concept after mission, it is kind of a company trademark. «Strategy» includes company goals and the main ways to achieve them ensuring sticking to a single direction. So, strategy determines the purpose of prospective development, scope of actions and managerial decisions.

«Long-term company goals» in the structure of strategic development plan are drawn up for 3-5 years. Goals must be clearly defined and represented under SMART criteria (specific, measurable, achievable, relevant, time-based).

Section «Characteristics of market and industrial company positions» shall include detailed competition analysis comparing company own competition position with other market players.

«Characteristics of target markets and the company share in such markets» provides for detailed consumer analysis, market segments characteristics, specific characteristics, priorities in goods selection, shift in tastes and behaviour patterns. Company market share must be determined for each target market. To do that, one shall analyses the trends of financial indicators of an industrial company business with clear data for each region. The following section is «detailed SWOT analysis» determining company strengths and weaknesses, opportunities and threats. Detailed SWOT analysis provides for detailed analysis by regions, as well as qualitative SWOT analysis and recommendations based on it.

Developed recommendations based on SWOT analysis have to be shown in the following section of a company development strategic plan, «conceptual directions of a company development». Conceptual directions are formulated in a such way to show the directions of the company development by various regional and target markets.

After conceptual priorities are defined, the development plan must include «prospective factors of a company positioning». Company positioning factors are also characterized at various geographical and consumer markets.

After long-term and prospective plans, strategic «short-term plans» (–forthcoming year) must be outlined.

The final stage of an industrial company strategic development plan is determining «instruments for the company development plan implementation». In this case, marketing, financial and HR policies are meant.

Company strategic development plan is drawn by head office, but regional company offices must participate, as the above sections need analysis and plans for each regional market [12]. Based on a company strategic development plan, regional marketing departments develop a company marketing strategy policy. We must admit that some companies develop strategic marketing policy for all regions, although it is not sufficiently effective due to clients segment features.

Company mission and strategy outlined in the marketing policy are certainly identical with those listed in an industrial company strategic development plan. Company marketing strategy and marketing instruments must be established based on that. According to that, industrial company marketing policy has the structure shown in table 6.2.

«Company marketing policy» document is a kind of company resume. It is used as the basis for the business entity promotion campaign, basis for goods, prices, selling and communication company policies.

One of the important directions of industrial company strategic planning is its social role actualized in accordance with the world trends. Company social development is needed for creation proper work conditions in it. It is especially important during the increasing of industrial products which must be competitive. Social development of industrial company is based on the results of its production and commercial activities. That is why the company social development is closely related to its marketing activity. Business conditions, external and internal, play an important role for the company. Industrial company is an open social and economic system actively cooperating with external environment and has economic and social subsystems. Economic subsystem is the material basis for social subsystem creating conditions for achievement of the company goals. Social subsystem must furnish personnel with all

necessary means for their professional activities directed to qualitative final result. Social and economic marketing techniques are especially important (table 6.3).

Table 6.2. Basic content of an industrial company marketing policy

Topics	Characteristic
Company identification	Full name of a company (regional representative office)
Basic market and business characteristics	State all types of company business, license, basic consumers characteristics (regional-specific)
Competitive advantage and competition basis	Company competitive advantage, the main unique factors of competitive ability at regional market, the main slogan (used in image promotion) of a bank
Company mission	Create mission
Company strategy (based on local market requirements)	Outline general company strategy detailed for certain regions
Marketing strategy	Marketing strategy at regional market, positioning factors
Marketing instruments	Marketing type in target market selection Give characteristics of marketing elements: goods, prices, selling, and communication company policies

In addition to the above, social and economic technologies leading to increasing the company social capital with external stakeholders are: charity, social reporting, social audit, tracing systems and socially responsible approaches to business. Short description of social and economic marketing techniques functioning is shown in the table. All listed techniques are differentiated by the form of carrying out and implementation by the company, but finally, they all lead to mandatory increasing of the company social capital.

Implementation by the company of social and economic marketing techniques will promote trust of external stakeholders which may be converted into social and economic development of the company.

Socially responsible logistic system of companies needs systems of raw materials «tracing» that includes control of social responsibility throughout the supply chain of incoming resources to the company and external social audit of suppliers. So, «tracing» system in social responsibility mechanism is assessment by independent, qualified and certified expert, with written confirmation of recording and flow of raw materials used by a company for «tracing» of social aspects of technological and logistic movement by raw materials from initial source to reprocessor in

accordance with social and economic standards established by such re-processor. Such measures facilitate social marketing process and confirming integral image of companies that in their turn, increase the company social capital. Recently, the most popular examples of supply chains control include product certification and social responsibility, where the said technologies ensure raw materials origin from certified social and economic responsible sources. Moreover, such systems may be used also for another purposes, including: confirming legal raw materials origin; improving supply chains management to minimize losses and expenses, ensuring provision of reproprocessors with «legal» and safe raw materials; ensuring relation between the quality of the end product and raw materials source. So, when selecting suppliers and the system of cooperation with them, must be guided not only economical, but also social criteria or demand social audit and include that into agreements.

Table 6.3. Classification of social and economic marketing technologies of the company [14,15,16]

Types of social and economic technologies	Content of social and economic technology	Forms of implementation by the company	End beneficiaries of social and economic technology
1. social idea promotion	promotion awareness and attention of society to certain social problems by spreading materials and PR measures by «tying» them with the main company business spheres	<ul style="list-style-type: none"> - rendering non-monetary resources; - promotional sponsorship; - voluntary activities of a company personnel; - PR-events; placement information in a company website 	outside the company
2. charity marketing	a company makes monetary contributions or transfers interest of sales to charity	<ul style="list-style-type: none"> - certain sum from each sold product; - percentage from the total sales; - goods price percent; income percent 	outside the company
3. ethical marketing	features of products manufactured by the company must comply with humanitarian social values and manufactured in line with ethical principles at all manufacturing steps	<ul style="list-style-type: none"> - control of society values; - control of business principles throughout the supply chain; - principles control of partners and intermediate consumers 	end customers

Table 6.3 continuation

Types of social and economic technologies	Content of social and economic technology	Forms of implementation by the company	End beneficiaries of social and economic technology
4. ecological marketing	the set of production and sale activities aimed to gaining profit subject to compliance with ecological interests of society.	<ul style="list-style-type: none"> - compliance with ecological standards of manufacture technology; - compliance with goods ecological standards; - promotion of ecological goods consuming; - - creating ecological needs in consumers 	end customers and society in whole
5. personnel marketing	type of managerial activity aimed to long-term provision of human resources	<ul style="list-style-type: none"> - marketing research of labor market; - stimulation employment; - creating external and internal company image as responsible employer 	company personnel and local communities
6. corporate social marketing	measures taken by the company in the scope of campaign aimed to change people's behaviour resulting improvement of public health, environment protection or public wealth	<ul style="list-style-type: none"> - rendering monetary resources; - promotion of certain behaviour; - voluntary activities of a company personnel; - PR-events; - placement information in a company website; - placement information on certain behavior on a product package 	both in and outside the company.
7. service marketing of social sphere	using commercial marketing measures to implement social sphere services and achieve social effect	<ul style="list-style-type: none"> - marketing research of certain social sphere service; - marketing measures for social service promotion 	both in and outside the company.
8. marketing of non-commercial organizations	marketing activity of non-commercial organizations aimed to achievement of social effect and simultaneous company economic stability	<ul style="list-style-type: none"> - using the set of commercial marketing measures to achieve social effect and economic stability by non-commercial organization 	outside the company

To sum those up, we must admit that marketing strategic planning of an industrial company is an objective prerequisite for initiating forecasting of events and processes determined as top-priority in marketing research. We must also add that forecasting methods may be used directly in the company strategic business planning which creates research interest to their implementation within the scope of this paper.

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6.3. The differences between the marketing approaches of large, medium and small light industry enterprises

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Through a series of historical, economic and natural reasons in economically developed countries, marketing has undergone extensive development and recognition in the business. According to the Munich center «Vocatus», an orientation of the enterprises activity on customers' requirements and improving the relationship with them is considered a prerequisite for successful economic activity at only 63% of enterprises. In the USA, the orientation of the enterprises activity on marketing communication with consumers is a prerequisite for profitable economic activity in 71% of enterprises. UK firms marketing as a leading factor in the commercial success has been identified by 65% of enterprises [1].

In Ukraine, the light industry enterprises partially use marketing principles in management. Management have to solve the problems of supply, production, distribution and etc. At the same time, there is a rigid competition through the creation of new businesses, mostly with the low productivity and a small number of staff. All of this is reflected in the statistics. In particular, as on 01 March 2015 the light industry of

Ukraine includes more than 2,500 companies, of which only 31,3% are economically active, 53,4% – bankrupt, 15,3% – economically inactive [2].

Gradually through changes in the external environment (reduction in the number of consumers, deterioration of their creditworthiness, the supply of cheap imported products, reduction of quantity and deterioration of quality of raw materials, changing requirements of traditional users), almost all enterprises of the light industry has intensified the need for new principles of economic management. Practical examples show that the intensity of use of marketing is enhanced when various economic problems such as lower sales volume, reduced revenue, deterioration of the image appear at the enterprise. In Ukraine the gradual loss of domestic producers in many segments of the domestic market goods continues, which is not only due to the military action, but with significant structural deformations in the economy and low competitiveness of enterprises in conditions of economic openness. The negative is added on the mental level formed by the cult of imports, which until today is that Ukrainians prefer foreign goods manufacturers, and which largely prevents the full development of the domestic fashion industry and clothing manufacturers. But another trend that has recently emerged in the light industry began its focus on «goods of ethnic fashion» and promotion of buying locally produced goods. Taking into account the specificity of the fashion industry, the use of such marketing of the light industry should focus on the application of the concept of the «7 Ps» that searches four marketing sub-mixes: product, price, distribution channels and marketing communications, and contains additional components, such as: staff, provision of services and material arguments.

However, the relative stability of enterprises staff, rare change of team management and senior specialists on them, getting the knowledge of basics marketing is on their own, often by trials and errors, and marketing decisions are made intuitively and solely by management, or in the process of meetings among the narrow circle of specialists. Rarely used modern scientific invention and marketing use is only its opportunities and is aimed at the solution of current economic problems. Such application of marketing in the industry is ineffective and discredits marketing potential, because marketing on the enterprise is a technology with its life cycle that requires investments, a significant portion of which is converted into financial profit in the long term.

Considering light industry as an integral part of the Ukrainian industrial complex, it should be noted that the marketing of light industry has on the one hand common features with industrial marketing, but on the other – has its own specific features. Despite the fact that there are differences in the activities of industrial enterprises that are focused

on high-tech market and the consumer market, it should be said that the same differences will be found in the application of marketing on these markets. The more complete understanding of the light industry marketing specific can be obtained if we use the approach regarding specification of light industry products in the following groups:

- the industrial goods;
- the goods, which later turn into tangible components of the consumer goods;
- consumer goods.

The industrial goods must satisfy exclusively the needs of production, the consumer goods – consumer needs. The important role of marketing for the entrepreneurial activities in the light industry is determined by the fact that the vast majority of products of this industry belongs to the goods of the wide consumption, or consumer goods. These are goods and services directly satisfying the human being needs and family or personal consumption [3].

The review of the status of use of marketing has been carried out on the example of enterprises of light industry producing consumer goods. This is because the branch of the light industry, is focused on the high-quality satisfaction the consumers individual needs, is a significant and essential segment of the industrial complex of Ukraine, is one of the indicators of the population well-being and can provide the significant revenues. The light industry is also one of the main branches of the industrialization of many countries, making it the main reserve to strengthen the economy of Ukraine.

The level of interest in marketing as a tool for improving competitiveness at the level of individual enterprises has significantly increased. Marketing in the enterprise is used as the management philosophy and as the management function. However, the feature that has received little attention has been identified, is the extent of a significant difference existence between the marketing approaches of large, medium and small enterprises of light industry. Data are based on author's sociological survey of 47 enterprises of light industry, 29 of which provided responses (N), including such famous enterprises as «Trembita», sewing factory «Nadtochii» sewing factory «Voronin», «Volodarka», «Uzhgorod clothing factory», «Khmelnysklegprom», «Melitopol MTSE «Elegant», «Ivano-Frankivsk MTSE «Galychna»; which was conducted among the employees of department on eight blocks of questions. Among the respondents, there were ten large and nine small businesses specializing in the mass production of clothing.

Respondents were asked what role marketing plays in planning overall activities of the enterprise. The data in the table 1 indicate that a

larger share of large enterprises (70%) indicates that marketing plays a leading role in the overall planning process.

Among the respondents, 40% of medium businesses believe that marketing plays the supporting role in the planning, only 10% say that it either has a minor role or has not at all. 11% small enterprises notes the leading role of marketing, is mainly a job for local markets and the lack of need for marketing efforts. While the marketing department or the sales department exists at all large and medium-sized enterprises.

Table 6.4. The block of questions «the Role of marketing in the overall planning process»

Questions	Enterprises					
	Large N = 10		Medium-sized N = 10		Small N = 9	
	f	%	f	%	f	%
The leading role	7	70	2	20	1	11
Combined leading role	1	10	3	30	2	22
Support role	1	10	4	40	2	22
Plays a minor role, or does not play at all	1	10	1	10	4	45

According to the attitudes of senior management to marketing, respondents were asked to choose between the three alternative descriptions, reflecting the role of marketing as an essential, or as cross-functional in the General philosophy of the company. The data in table 6.4 indicate that for three groups the difference is significant, that is, the majority of the top managers of large and medium industrial enterprises take marketing as a business philosophy in contrast to the management of small businesses. Among small businesses, 45% perceive marketing as just selling.

Table 6.5. The block of questions «the Attitude of top management to marketing»

Questions	Enterprises					
	Large N = 10		Medium-sized N = 10		Small N = 9	
	f	%	f	%	f	%
Marketing should be done only by professionals	2	20	1	10	2	22
Actually marketing is selling	2	20	3	30	4	45
Marketing needs to manage all operations	7	70	6	60	3	33

The data in table 6.6 show that there are no significant differences between marketing approaches of small, medium and large industrial enterprises in the sample. In General, it is clear that all industries do what they can and sell to whoever can buy.

Large and medium-sized enterprises are more likely to use advertisements than the small industrial enterprises (30% vs. 22%) and are more likely to planned advertising budget.

Table 6.6. The block of questions «Marketing approach»

Questions	Enterprises					
	Large N = 10		Medium N = 10		Small N = 9	
	f	%	f	%	f	%
To do what they can do, to sell to who can buy	4	40	4	40	5	56
To focus on advertising to ensure sales	3	30	3	30	2	22
To focus on the preliminary analysis of market needs	3	30	3	30	2	22

Regarding the level of formal marketing planning in the enterprises (table. 6.7), the majority of enterprises (from 50% to 55% in groups) has responded that they have little marketing planning, or have not it at all. Among large and medium-sized enterprises (by 30%) have stated the annual planning within their organizations and only one large company has indicated that is implementing long-term marketing planning.

Table 6.7. The block of questions «Formal marketing planning»

Questions	Enterprises					
	Large N = 10		Medium-sized N = 10		Small N = 9	
	f	%	f	%	f	%
Minor or there is no	5	50	5	50	5	55
The annual budget	3	30	3	30	-	-
A separate annual marketing planning	1	10	2	20	4	45
Annual or longer term planning	1	10	-	-	-	-

None of the studied small enterprises has implemented annual marketing planning. One of the small and medium enterprises are not engaged in a long-term marketing planning. Separate annual planning is in scheduling the advertising and events sponsorship and in the annual budget the costs are reduced to these marketing activities.

The comparison of the responses to the question «to make primary emphasis on prior analysis of market needs» with the answers to the questions in the tables 5 and 6 show more the intention to conduct a preliminary analysis of market needs than about the fact of its satisfaction. Based on this, we can conclude that there is a need for solving the problem of formation of marketing capabilities in the enterprises, based on the maximum orientation of the whole enterprise on the market and making management decisions based on the needs of the market, giving the opportunity to grasp a competitive advantage in this field.

Regarding the objectives of marketing planning, respondents were asked to draw a differentiation between those tendencies which are set by them and those that come from the external agencies (table 6.8).

Table 6.8. The block of questions «Marketing research while planning marketing»

Questions	Industrial enterprises	Often		Sometimes		Never	
		f	%	f	%	f	%
The frequency of use of the private marketing research	Large $N = 10$	5	50	3	30	2	20
	Medium-sized $N = 10$	2	20	2	20	6	60
	Small $N = 9$	1	11	2	22	6	67
The frequency of use of the external marketing research	Large $N = 10$	2	20	3	30	5	50
	Medium-sized $N = 10$	6	60	2	20	2	20
	Small $N = 9$	5	55	4	55	–	–

Data suggest that though most large enterprises (50%) at least often conduct their own research, small industrial enterprises use more external information (researches carried out by other organizations). Only on one of the surveyed large enterprises their own procedural marketing research had carried out.

The frequency of use of marketing research for control purposes is examined in the table 6.9. The general use of marketing research for three groups of enterprises is considered «consumer complaints» (from 70% in large and medium-sized enterprises to 67% in small enterprises). Businesses are interested less in moving market share. Missed opportunities should interest more in the management of enterprises, because the growth of the potential is contained in them. The studies on customer complaints to control 10% of large and medium-sized enterprises and 11% of small businesses are not conducted.

Enterprises save resources on conducting marketing research, as it requires financial and labor costs (table 6.7-6.8).

In the table 6.10 there are grouped answers on the use of the elements of the marketing monitoring regarding competitors, customers, technologies and business directions. About half of the studied enterprises use at least sometimes the elements of the marketing monitoring, and large industrial enterprises make more than small.

Table 6.9. The block of questions «Marketing research for the purpose of control»

Description	Industrial enterprises	Often		Sometimes		Never	
		f	%	f	%	f	%
For the purpose to plan research regarding consumer satisfaction	Large N = 10	2	20	5	50	3	30
	Medium-sized N = 10	2	20	4	40	4	40
	Small N = 9	2	22	4	44	3	33
For the purpose of control – investigation of customer complaints	Large N = 10	7	70	2	20	1	10
	Medium-sized N = 10	7	70	2	20	1	10
	Small N = 9	6	67	2	22	1	11
For the purpose to analyse of missed opportunities	Large N = 10	1	10	7	70	2	20
	Medium-sized N = 10	-	-	4	40	6	60
	Small N = 9	7	78	1	11	1	11
For the purpose to study the movements of market share	Large N = 10	1	10	-	-	9	90
	Medium-sized N = 10	-	-	1	10	9	90
	Small N = 9	-	-	-	-	9	100

Table 6.10. The block of questions «Marketing monitoring»

Questions	Industrial enterprises	Often		Sometimes		Never	
		f	%	f	%	f	%
Changes in the competitor behavior	Large N = 10	2	20	5	50	3	30
	Medium-sized N = 10	2	20	5	50	3	30
	Small N = 9	3	33	4	45	2	22
Changes in consumer behavior	Large N = 10	4	40	4	40	2	20
	Medium-sized N = 10	5	50	4	40	1	10
	Small N = 9	3	33	5	56	1	11
Changing technologies	Large N = 10	8	80	1	10	1	10
	Medium-sized N = 10	7	70	2	20	1	10
	Small N = 9	3	33	2	22	4	45
Changes in business directions	Large N = 10	3	30	3	30	4	40
	Medium-sized N = 10	5	50	3	30	2	20
	Small N = 9	7	78	1	11	1	11

The control of marketing efficiency at the surveyed industrial enterprises was implemented in three factors (table 6.11).

Table 6.11. The block of questions «Control of marketing effectiveness»

Questions	Industrial enterprises	Often		Sometimes		Never	
		f	%	f	%	f	%
Analysis of effectiveness of the goals (the ratio of planned to actual volumes of sales)	Large N = 10	7	70	2	20	1	10
	Medium-sized N = 10	6	60	2	20	2	20
	Small N = 9	6	66	2	22	1	11
Analysis of effectiveness relative to product quality (the ratio of actual and advertised products)	Large N = 10	5	50	4	40	1	10
	Medium-sized N = 10	5	50	4	40	1	10
	Small N = 9	5	56	3	33	1	11
Analysis of effectiveness in relation to marketing costs (ratio of sales and marketing costs)	Large N = 10	4	40	5	50	1	10
	Medium-sized N = 10	4	40	4	40	2	20
	Small N = 9	2	22	3	33	4	45

Analysis of effectiveness relative to the objectives in the approximate equality is carried out at large and small enterprises of light industry (90% and 88%), a similar situation is observed regarding the analysis of efficiency in relation to marketing expenditures. Analysis of effectiveness relative to the quality of the products is made equally at large and medium-sized enterprises (90%).

So, on a philosophical level between the three groups of industrial enterprises, there are significant differences, as large and medium-sized industrial enterprises have increasingly adopted marketing as a management philosophy, in contrast to small enterprises. In all groups the top management to marketing and their marketing approaches are very different. Regarding to the use of marketing as a management function, those minor differences that exist, in fact, can be explained by the scale of the enterprise. For example, large enterprises are more inclined to study changes in technology than small businesses.

On the basis of the survey, we have concluded that when developing the overall strategy of the light industry enterprises marketing should help in the selection of strategic priorities of development, or contribute to the enterprise invention. Given that the majority of Ukrainians have a positive attitude to the participation in surveys and other studies we can assume that it will continue to facilitate the exchange of information between producers and consumers. In our opinion the most effective channel for the exchange of such information is the analysis of customer

feedback while selling through the online store. This will provide an opportunity to monitor not only the implementation process but also the quality of the product and its technological excellence.

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Section 7

Innovative development management of market opportunities of industrial enterprises

7.1. Conceptual framework of innovation management in industrial plants

Shipulina Yu.S., Savchenko O.Yu.

Updating innovation processes in all sectors of the economy is becoming increasingly popular. One of the main factors of competitiveness of enterprises is the innovative business orientation.

The transition to an innovative model of development needs to create optimal conditions for innovation. More and more economic development leads to the actualization of innovation management in all areas. Particular updating this direction gets in management industry as the key link in the global economy. There has been increase in the number of publications devoted to the issue of innovation management in enterprises. The successful experience of foreign companies dictates conditions of transition to innovation-oriented business principle. Currently there is a problem of a clear definition of «innovation management». To find out the essence of the term, it is necessary to analyze the components of innovation management and approaches to the definition of «innovation» and «control».

One of the founders of the term «innovation» is Schumpeter, who in his work «The Theory of Economic Development» gave a complete assessment of the «new combinations» nature. Later this concept was changed to a modern approach «innovation» which provided an explanation: «... changes to the introduction and use of new types of consumer goods, and new production vehicles, markets and types of organizations» [1].

There are many approaches to the definition of the concept, but the foundations of his plan are laid in the twentieth century. One of the key concepts is P. Drucker's approach that studies this concept from the economic point of view: «special means of businessmen by which they explore changes taking place in the economy and society, in order to use them in business or in different areas of service» [10].

A special approach to the concept of «innovation» makes Ukrainian scholar Yu. Bazhal who emphasizes that «Innovation as an economic category, is not just a concept, which means any innovation, but a new

function of production. That is – to change the production technology that has historical significance and is necessary. Innovation means a jump from the old production function to the new one, but not every innovation, new production is innovation» [2].

This interpretation raises the problem of distinguishing these approaches to the definition of innovation as «significant changes in the product» and «minor changes in the product».

Along with the basic concept of «innovation» they distinguish a variety of approaches to the interpreting the concept of «innovation».

A number of scientists consider innovation from the point of technological processes, namely as «a range of activities aimed at the development and introduction of technologically new or significantly technologically improved product (innovation) and industrial processes (process innovation)» [11].

Analyzing the various approaches to the definition of these concepts, it should be noted that they are considered from different points of view, namely:

- innovation as a system (N.I. Lapin, J. Schumpeter) [1, 5];
- innovation as a change (z.f. valens) [9];
- innovation as a process (S. Pokropyvnyy, Yu.Morozov) [8, 9];
- innovation as a result (S.M. Ilyashenko, V.V. Stadnyk) [3, 5].

Analyzing the concept of «control», it should be noted that it is often equated with the concept of «management». The concept of «governance» is a general concept that has its origin from the word manus, which is translated from Latin as «hand».

Considering the notion of «governance» it should be taken into account the components that are part of it: wildlife, inanimate nature and human society. This last component is directly related to the meaning of «control».

Basic approaches to definition of «innovation» and «innovation activity» are presented in table 7.1.

In the table 7.1 you can see a comparative analysis of different approaches of scientists to the definitions of «innovation» and «innovation activities». Most scientists based on interpretation of the concept of «innovation» have developed approaches to the definition of «innovation».

The analysis of the definitions of these concepts enables to express their position on the interpretation of the concept of «innovation». Innovation activity is an activity that involves the creation of new or the emergence of innovative solutions to improve the production process, improve the quality of services, and increase profitability of the entity.

Table 7.1. Approaches to the definition of «innovation» and «innovation activity»

Author	Approaches to the definitions	
	Innovation	Innovative activities
I. Schumpeter	changes to the introduction and use of new types of consumer goods, and new production vehicles, markets and types of organizations	targeted capacity for innovation on the market [1]
S. Illyashenko	the final result of the activity on creating and using the innovations embodied in the form of improved or new products (goods or services), production technologies, management practices at all stages of production and marketing the products that contribute to the development and improvement of the enterprises [4]	this type of business entities, aimed at the emergence of new or improved solutions designed to innovation [3]
N.I Lapin	the objective that changes the routine components of reproductive activities [5]	set of capabilities in enterprise innovation [5]
V.V.Stadnik	the final result of creative activity, embodied in the output to market a new or improved products, processes used in practice or a new approach to providing consumer services [6]	activities aimed at using and commercializing the results of research and development, placing competitive products and services on the market [6]
The Law of Ukraine «On innovation activity»	newly formed (applied) and (or) improved competitive technologies, products or services as well as organizational and technical solutions for industrial, administrative, commercial or otherwise, which significantly improve the structure and quality of production and (or) social areas [7]	activity aimed at using and commercializing the results of scientific studies and development that causes the release of new competitive goods and services [7]

Especially relevant is this problem for Ukraine economic sectors with traditionally high intellectual and industrial potential. However, they cannot ascertain notable success in innovation, especially in terms of innovation in practice, leading to continual backlog of technical and technological level of industrialized countries. In this context it is necessary to allocate such negative phenomena of existing innovation policy of the country:

- low rate of radical, economically significant innovations;
- high duration of the innovation development in production, which significantly reduces the duration of it life cycle;
- a small number of developments that are in high demand in domestic and overseas markets.

Innovation activity of industrial enterprises characterized by increased sales volumes of innovative products (table 1.2).

Table 7.2. Dynamics of the main indicators of innovative development of industry in Ukraine

Year	Proportion of completed scientific and research activities in GDP, %	The share of enterprises engaged in innovation, %	Share of enterprises that implemented innovations, %	Proportion of sales of innovative products, %
2008	0,9	13,0	10,8	5,9
2009	0,95	12,8	10,7	4,8
2010	0,9	13,8	11,5	3,8
2011	0,79	16,2	12,8	3,8
2012	0,8	17,4	13,6	3,3
2013	0,81	16,8	13,6	3,3
2014	0,7	16,1	12,1	2,5
2015	0,68	15,8	11,8	2,3

Investing innovation in Ukraine is very low, but in our country it can be an important lever for the elimination of many crises:

- stimulating the development of fundamental science;
- resisting the scientific potential loss due to traveling scholars abroad;
- solving environmental problems, assistance to accelerate the conversion of military production with maximum effect for the transformation of technological foundations of civil production.

The backlog of Ukraine in the number of innovations is a serious threat to economic independence and hence security.

Industrial enterprises of Ukraine more than ever require innovative solutions. The main obstacles to the implementation of effective policy to their management are: obsolete equipment, old technology, production of uncompetitive products.

Currently companies do not have enough qualified personnel that ensure satisfactory growth rate of innovation. The main problem in terms of human resources is the motivational component of leadership. It becomes relevant the question of lack interest among management's personal in implementing innovation. Remuneration of senior management units usually does not meet their duties. This fact causes the lack of their interest in ensuring the competitiveness of enterprises.

Effective management of the innovation process is the basis for success of any enterprise. A necessary condition for the implementation of this process is the interaction of key compliance levels – national, regional and production. Creating appropriate control structures of innovation, providing them with appropriate status and providing them with logistical component will ensure the implementation of the innovation process at all levels of the industry.

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7.2. The import substitution strategy implementation at the industrial enterprises amidst stiff competition at international sales markets

Shipulina Yu.S., Vashchenko T.V.

In recent years native producers step by step lose segments of the internal commodity market, caused by great structural deformations in national economy and low competitiveness of many enterprises. Low rates of the internal market increase threaten national security in Ukraine in economic sphere, limiting economic growing perspectives over a long period and forming great risks for economy competitiveness. Considering foreign trade tendencies, which appeared, and nature of impact factors on the economic processes of the native producers, one can prognosticate that interconnection with CIS countries will be complicates. Thus, in order to keep the existing positions and their economic efficiency developing at the industrial enterprises, it is necessary to provide reorientation for potential partners both in the east and west. It will minimize the negative trade surplus. Import substitution production setting will allow to solve problems and will assist the enterprise development in the strategic plan.

The most popular researchers of the strategic management in organization are I. Ansoff [1], D. Aaker, M. Albert, M. Meskon, F. Hedouri [2]. The problems of the native enterprises development perspectives, their crisis recovery are shown in works of the following scientists: Yu.M. Bartashevska [3], Ya.A. Zhalilo [4], D.Yu. Kramsky [5], A.A. Mazaraki [6], T.M. Melnyk [4], L.I. Mykhaylova [8], L.I. Fedulova [9], M.M. Yakubovsky [10] and others.

Although there are many investigations in the strategic management sphere of enterprise, the problem concerning import substitution is not greatly studied. Scientists examine import substitution policy from the viewpoint of the ready production realization. It concerns medical sphere, the sphere of chemical industry, appliances, every day products. However the problem on imported accessories and resources substitution,

towards which national producers of machine building complex are tied, has not been practically observed.

Nowadays the strategic management of the enterprise development has an individual nature, which depends on functioning peculiarities of the economic activity subject. That's why strategic steps selection in the organizational and managerial scheme of the industrial enterprise activity becomes more innovative. The system of industrial enterprise regulation on the bases of import substitution foresees a complex of elements, coordination of which cause enterprise main objective performing, particularly profit increase. Producing powers of modern industrial enterprises are not totally used owing to main production sales limitation. This factor impacts the production expenses and price. Under such conditions machine building enterprises need to find new beneficial areas for its activity diversification.

Firstly, the industrial enterprise activity diversification gives an ability to form closed cycle of production and production and accessories competitiveness increase, produced by the enterprise, through ability to variation and control of quality and prime cost. Such strategy is interconnecting, i.e. it lets to reduce price for production and to increase incomes.

Innovative strategies of the production diversification are tools for capital moving between branches within one state, import substitution providing, creation of economic processes demonopolization conditions, new working places appearing, development of the production and optimization of industrial value sectors, creation of the closed cycles in production within native economy, economic and political misbalance risks reducing in the world, involving of investments, which are necessary to create industrial groups and technological complexes. One of the significant impact factors on the introduction of the producing diversification strategies is to decrease dependence on supply of centers, details and accessories from other countries and to improve trade balance of the native economy [11].

Modern production of the machine building enterprises is characterized by strict requirements to quality, both on the part of consumers and international normative demands. Today's realities consist in the fact that it is practically impossible to achieve production correspondence to the strict standards while using old equipment, or it will lead to high prime cost of the production. So, in order to achieve competitive parity index with import products, native enterprises have to modernize producing capacities, which will provide reduce of working expenses, increase of quality, production terms decrease and will lead to production prime cost decrease.

Thus, the productive and technical base has to be corresponded to the production level, which is produced on it. So, native enterprises must produce the proper product in order to achieve competitive position at

the global market. It requires that they must have proper productive equipping. Under such conditions innovative balance term of the enterprise development is performed. The enterprise will receive small effect if the innovative development strategies are introduced at the industrial enterprise with old productive and technical equipping.

The organization, producing the industrial goods, depends on many factors, especially on suppliers of raw materials and complements. Enterprises with incomplete working cycle are located in the area of dependence on other machine building enterprises, that's why decision making to introduce innovative development strategies has to be grounded and fundamental, considering risk factors and events course scenario considering all micro- and macrofactors. That's why there are rational motives to introduce innovative strategy of development at the machine building enterprises – import substitution strategy.

The enterprise as an economic system has main objective in its activity – to get profit for the long run, achieving of which is possible provided that competitive goods will be produced and realized, and that these goods will be able to satisfy consumers' needs and wishes. Besides, it should be noted, that machine building enterprises activity is a base to pump up the budget both in separate regions and state in whole. Therefore the most gigantic and mid-ranking enterprises which produce industrial goods are interconnected. So, it is profitable for state to assist these participants of the market relations in national good production and realization with purpose to concentrate productive capacities, working places and finances in Ukraine, and money turnover must work in favor of native enterprises, their modernization and development.

Import substitution strategy is based on production modernization, increase of the produced good quality, enterprise technologies, innovations introduction. It is especially important for the state, the productive capacities degree of which falls behind countries degree, with which it cooperates. Stage-by-stage realization of the import substitution strategy leads to positive changes in the country. Main changes are represented in the fig 7.1.

Today modernization of production is very urgent topic in the economic and political sectors. Financial crisis in 2008 caused that interest increase, because it was clear that most part of raw materials in export turns our country into raw materials supplier for the developed European countries; high dependence on the world conjuncture, prices for oil and gas punctured native producer. It is necessary to underline the fact that all countries are involved greatly into the global economy in the process of globalization. So, one has to concentrate efforts on the innovations development in producing processes at the major budget revenue generating sectors.

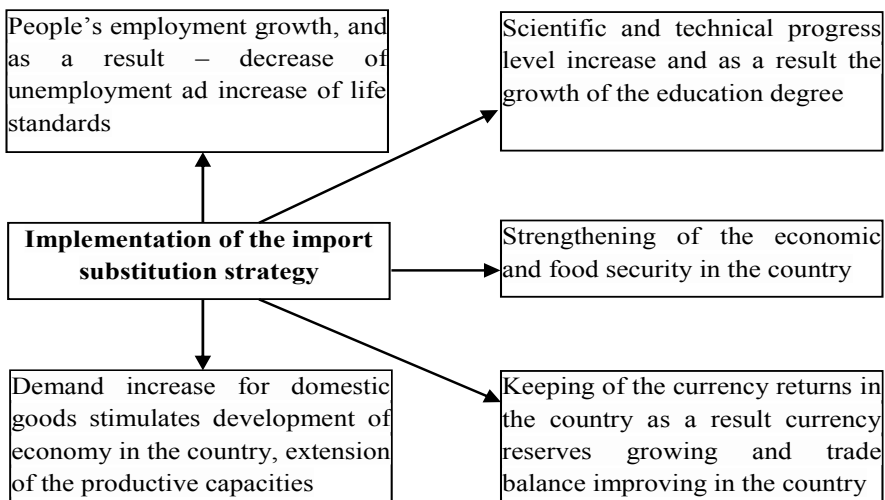


Figure 7.1. Results of the import substitution strategy realization [12]

One of the main elements to develop industrial sectors in country is investments involvement. Involving the capital directly, or through proper conditions creation to run business, the state stimulates development of those branches in industry, to which costs are directed. Besides, it is important to point out that investors are interested in those sectors, which provide high incomes and fast return of capital outlays; and knowledge-intensive and high technological production will hardly possess these parameters. That's why state has to work over positive investment climate and attractive conditions creation for investors (tax benefits, exemption from customs dues, etc.).

One of the significant tasks at the state level is export development. The import substitution may be an intermediate stage to the export orientation, so, it must be subordinated to the long-term objective. The main aim must be maximal integration of those goods, which are the most competitive.

Export amounts ramp-up and GDP increase lead to import growth, because the final production structure has high part of the import components. That's why the activity on production import impacts decrease is important and updated, because ignoring of this task will cause the situation when macroeconomic problems are complicated under economic growing conditions in the country macroeconomic problems will be just complicated. One of the import substitution tasks is to reduce GDP import impact and export.

The rapid development of machine building industry, which gluts productive processes by new technical means and technologies, is the main source of the innovative development and further economic growth in the country, social work efficiency and citizens' wealth increase. However, nowadays practically all branches of native production endure the stagnation period. Moreover, there is no practically investigated and clearly expressed state industrial policy, absence of which doesn't allow to involve main tools and mechanisms of the innovative development.

One has also to admit, that initial and main cause of such state is absence of only one grounded state policy, based on science and technique achievements, the one state strategy of transformation and machine building native producer' rapid development.

Besides, Ukraine has all necessary conditions for machine building rapid development. They include own raw material base, sufficient scientific, intellectual, personnel, productive and other potentials. But, there is clear understanding of situation from the viewpoint of state and political will to its change for the better. Nowadays we need to reorient the native machine building sector to the intensive, advance development, which foresees necessity to solve interconnected and interdependent problems in technological, technical, legislative, regulatory, financial and economic, educational, staff and other areas.

Unfortunately, the most important branches in the modern native machine building sector have the general problem – global dependence of not only main constituent elements, but also goods on whole, on import, and the problem concerning counterfeiting of the accessories, used in real production. Under such situation import substitution will start the struggle with dependence on imports. In the long-term perspective reducing of the dependence on import is possible owing to innovations, investments stimulation and creation of new innovative productions.

The import substitution is a famous type of the economic strategy and industrial policy in any state, oriented to native producer's protection through substitution of the imported industrial goods by production of the national output. Therefore the result of the import substitution policy must consist in native production competitiveness increase owing to production technological modernization stimulation, its efficiency increase and mastering of the new competitive products with relatively high added value.

The key moment in this problem consists in product release with high added value. Therefore main criteria of the import substitution process include the economic, social and strategic suitability and the problem concerning foreign trade balance provision. The problem of foreign trade

balance stability is to provide the native economy resource stability, particularly the most important questions of the economic security.

The industrial production added value increase is possible only when native production competitiveness is growing. Accordingly, it is necessary to modernize production and to use leading mechanisms on goods promotion. The import substitution strategy has to consider the whole production development, the produced good quality increase, technologies, used at the enterprises, innovations development. It is relevant for the country, where industries level is lagging from those states, with which it cooperates. The stable economic development of the major budget revenue generating sectors is possible first of all in case of industrial self-sufficiency level growth, i.e. increase of own production release in country. The focus on self-sufficiency is caused also by unstable processes in the global economy, alert attitude towards foreign capital and limitations, made by the state, which mostly concern the innovative technologies and innovative goods.

Therefore it should be noted that while executing the import substitution the main source of money for growing impulse in economy for a long perspective includes incomes of the export sector. For Ukraine it is a raw material export first of all. At the same time, a product, created at the import substituting enterprises, must be oriented not only to the native market, but also to foreign market, because only in this case the production competitiveness level will be growing.

One has also to imagine that import substitution is not only the catching-up development strategy, which must lead to some production establishment and this production development at higher level than competitors have. Only development of the high technological and knowledge intensive enterprises in the branch will let to enter the international market and to reduce dependence on raw material markets. The protection of native producer must not lead to industrial stagnation, because competition limitation by the foreign producers can decrease enterprise wish to develop innovations, to increase the produced goods competitiveness and to make organization dependent on the state subsidies. It is impossible only to copy necessary organizations, it is important to investigate own technologies.

Taking into account the import substitution strategy, one has to understand that clearly expressed form of the «unprotecting», which is against principals of the free international trade. Nowadays national economy, which is dynamically being changed, requires that import substitution will become the most significant element in economic policy and tool to achieve the main objective for state – to get positive balance of the foreign trade by goods and service.

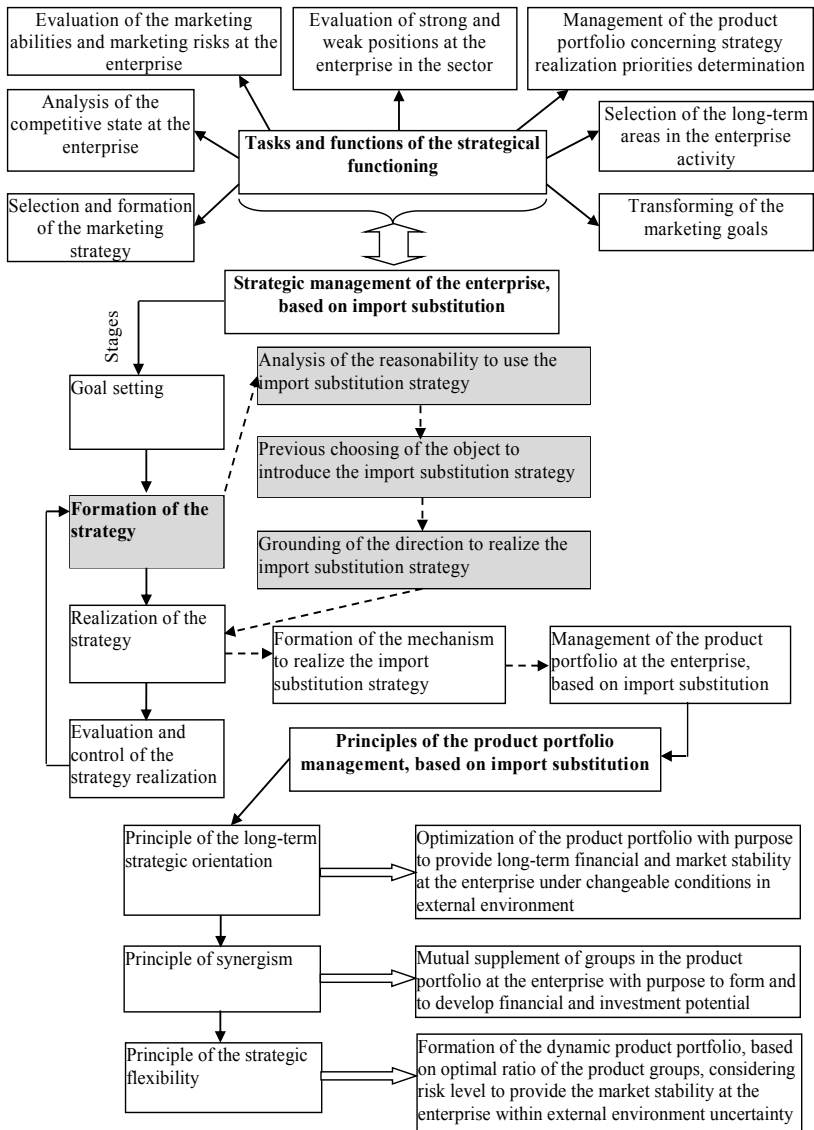


Fig. 7.2. Scheme of the strategic management process by the industrial enterprise, based on import substitution (added on the bases of [13; 14])

The strategic plan of enterprise development points the terms of activity at all levels of the organizational and administrative apparatus. In order to improve the process of strategic management by industrial enterprise, based on import substitution, the structural and logical scheme of the classical approach to the proper process is improved (fig. 7.2).

Implementation of the import substitution strategy at the industrial enterprise as intermediate stage in main goal achieving (organization of the export-oriented production) requires to analyze product policy, to define goods for which just this strategy use would be more reasonable and economically beneficial. It is especially urgent, when state has selected vector of the European markets entering. Introduction of the import substitution strategy is a complicated process. National producer has to achieve the proper level in activity for new stage in development.

On the bases of final products complements transformation, the fig. 7.3 distinguishes several perspective directions in the industrial enterprise development, which are recommended to be used in case, when the enterprise considers import substitution as a strategic vector in development.

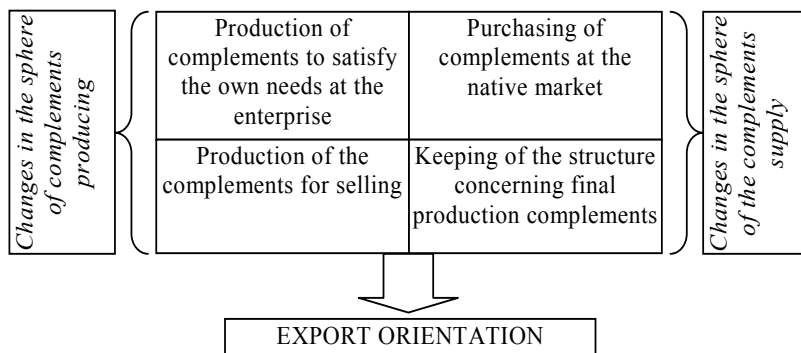


Fig. 7.3. Directions to realize the import substitution strategy of the industrial enterprise

In order to choose the object for import substitution strategy introduction, it is necessary to use the approach, which is based on combining of product portfolio analysis, based on modified matrix BCG and hierarchies analysis method (method of Saati) [15; 16]. The effective investment of money into the selected area development is provided by perspective and profitable groups of the product portfolio. Obviously modern approaches to the production of the competitive goods will allow the

industrial enterprises to adapt to the changeable conditions in macro environment and in future enter the international sales markets.

In conclusion, the main feature of import substitution policy is economy industrialization through import limitation and discrimination. The import substitution policy is based on the favorable environment to increase national industry. In other words, import substitution policy performing provides creation of the artificial stimulus (foreign trade, currency, technical, administrative etc.) to develop separate branches in native industry with purpose to increase their competitiveness at the domestic market. Activity concerning native production import capacity reducing is important and valid, under modern market conditions actions of the enterprise have to be oriented to find balance between the export and import operations. The investigation of the given model requires detailed study.

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7.3. Research of concentration of production in the food industry in Ukraine

Kravets K.P.

Specific features of the food industry are: large variety of industries and products produced (range of more than 4 million items); seasonal production; significant dependence on the resource base; rapid turnover range of products according to the requirements of consumers and the high requirements to product quality; stability of supply hampered the decline in growth of the industry crisis in 2008-2009. (-6%) compared with other industries. Industry is characterized by slow post-crisis recovery of production due to the negative impact of external financial factors and the accumulation of internal problems in the domestic food industry.

Reducing the production of food products in 2015 amounted to 11,2%, resulting from the lack of available funds for modernization of equipment, introduction of new innovative technologies, the procurement of raw materials. Decline in its economic performance, including profitability (in 1992 – 25,3%, in 2015 – 2,9%). Despite the growth dynamics of foreign direct investment in the sector (in 2005-2015. Almost three times), their share in total investment and investment in the industry is steadily declining, indicating a slowdown in investment in the food industry and limited finance companies efficient update fixed assets and to develop innovative manner. It inhibits the development of enterprises accumulation of obsolete technology and equipment, which reduces the efficiency of use and increases the cost of maintenance and operation and increases the share of cost per unit of output.

The simplest measure of the concentration of production is the number of companies operating in the market: the smaller it is, the respectively higher level of concentration in terms of its monopolization [1; 2; 3; P.23 4, 5]. We believe that this figure is one of the important preconditions concentration processes. However, these indicators do not reflect the important processes for the assessment of the concentration distribution of shares of market participants on their size (table 7.3).

Data analysis revealed a downward trend in the number of food businesses. A slight increase was observed in 2009 (there was an increase of 4.95% compared to the number in 2008). From 2005 to 2013 the total number of enterprises declined by 3 272 enterprises. The number of large and medium enterprises decreased by 1,159 enterprises, small businesses – by 2113 enterprises.

Table 7.3. Dynamics of the food industry in 2005-2015 (Source: author constructed according to [5; 6])

Indexes	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Number of enterprises, units.	8230	8171	7706	6943	7286	6551	6559	5786	5521	5521	5019
Large and medium-sized enterprises, units. *	2360	2297	2031	1756	1580	1402	1370	1367	1360	1360	1269
Share in total, %	28,7	28,1	26,4	25,3	21,7	21,4	20,9	23,6	24,6	24,6	25,3
Small businesses units. *	5870	5874	5675	5187	5706	5149	5189	4419	4161	4161	3 750
Share in total, %	71,3	71,9	73,6	74,7	78,3	78,6	79,1	76,4	75,4	75,4	74,7

Note: * – In terms of implementation of the enterprise from 2003 to 2011 criterion of volume of sales companies in accordance with the Commercial Code of Ukraine ch.7 63 from 2012 – Article 55 of the Commercial Code.

Despite the fact that the number of small businesses significant number of large and medium-sized enterprises in terms of implementation in large and medium accounts for over 90% of total sales (table. 7.4).

As sales rose steadily in 2005-2015. Average of 17%, we can assume that over the years rapidly changing state of concentration of production. As for small and medium and large enterprises, measures were taken with the consolidation of production.

In 2015, despite the relatively small number of large and medium-sized enterprises (1269 of 5019), their sales amounted to 95.9% (274.5 billion USD) of the total sales of food products, small 4.1% respectively (16.1 billion USD). Thus, according to the data table. 7.3 and table. 7.4 in the food industry Ukraine has created favorable conditions for the concentration of production in large enterprises.

Table 7.4. The dynamics of sales of food products between enterprises, 2005-2015

Indexes	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total sales of food industry billion	76,3	85,8	112,8	145,9	161,3	193,1	222,4	254,5	261,8	302,4	390,6
Sales of large and medium enterprises billion	72,0	82,3	108,0	137,5	149,0	183,6	209,3	240,2	248,9	289,3	374,5
Share in total, %	94,3	95,9	95,7	94,2	92,4	95,1	94,1	94,4	95,1	95,7	95,9
Sales of small enterprises billion	4,4	3,5	4,9	8,5	12,3	9,5	13,1	14,3	12,8	13,1	16,1
Share in total, %	5,7	4,1	4,3	5,8	7,6	4,9	5,9	5,6	4,9	4,3	4,1

Assess the level of concentration of production in the food industry need for such parameters as the number of companies that operate on economic activity, concentration ratio (CR); Herfindahl-Hirschman Index (HHI). CR ratio calculated for the three companies, and the index of the Institute – for all investigated food industry. Provided that $CR3 < 25$ and $HHI < 500$ enterprises by economic activity have a low level of concentration of production. If $25 \leq CR3 \leq 50$ and $500 \leq HHI \leq 1000$, the level of production concentration is moderate. $50 < CR3 < 70$ and $1000 < HHI < 2000$ indicates the average level of concentration of production enterprises. By highly related enterprises by economic activity provided that $70 \leq CR3 \leq 100$ and $2000 \leq HHI \leq 10,000$ (table 7.5).

Table 7.5. Level of concentration of production in the food industry Ukraine as of 01.01.2015 p. [Source: author constructed according to [5; 6]

Economic activity, the production:	Number of the investigated enterprises	Indexes		Level of concentration of production
		HHI	CR3	
milk, butter and cheese production	430	100	12,1	moderate ($CR3 < 25$; $HHI < 500$)
products of the milling industry	749	161,8	13,8	
Bread and bakery products	1020	189	15,1	
meat	357	213,3	16,4	
sugar	63	308,4	18,9	
meat products	516	358,8	22,2	
fish, crustaceans and molluscs	264	506,4	29,8	low ($25 \leq CR3 \leq 50$; $500 \leq HHI \leq 1000$)
fruits and vegetables	279	589,8	34,6	
wines	96	607,2	34,8	
crackers and biscuits	319	820,7	37,4	
alcoholic beverages	89	998,6	45,1	
tea and coffee	68	1486,1	56,8	medium ($50 < CR3 < 70$; $1000 < HHI < 2000$)
prepared animal feeds	230	1546,7	57,5	
ice cream	42	1863,4	57,7	
soft drinks	178	2145,6	59,1	
cocoa, chocolate and sugar confectionery	137	1650,4	61,8	
spices and seasonings	92	1601,5	63,1	
oils and animal fats	437	1989,3	69,3	
pasta	108	2411,1	71,9	
starches and starch products	23	2126,8	72,0	high ($70 \leq CR3 \leq 100$; $2000 \leq HHI \leq 10000$)
fruit and vegetable juices	58	2481,8	72,2	
poultrymeat	37	3121,9	75,9	
malt	13	2800,2	85,7	
baby food	48	4863,0	87,7	
beer	71	2269,7	89,4	
Margarine and similar edible fats	29	3474,4	89,5	
finished pet food	26	8145,2	96,5	
of potatoes	15	5340,2	96,6	

Analysis of the level of concentration of production food industry Ukraine for consolidation stage showed that in the initial stage are such economic activities as processing and preserving of potatoes ready pet food, baby food and dietary foods. At the stage of growth are: production of spices and seasonings, prepared feeds for animals kept on farms, tea and coffee and other food products not elsewhere groups, crackers and biscuits, wines and other types of processing and preserving fruits and vegetables, processing and preserving of fish, products of the milling industry, distillation, rectification and mixing of alcoholic beverages. Processing of milk, production of butter and cheese, bread and bakery products, meat, sugar, meat products, ice cream, soft drinks, cocoa, chocolate and sugar confectionery products, vegetable oils and animal fats, pasta and similar bakery products, starches and starch products are in the process of specialization. Production of fruit and vegetable juices, meat, poultry, beer, malt, margarine and similar edible fats are under equilibrium and alliances. With the change in consolidation phases of the curve increases the profitability of implementation and return on assets. However, at the stage of equilibrium alliances and an increase in profitability of costs associated with the processes of vertical mergers at this stage, which help to reduce the cost by saving on operating costs.

Indicators of fixed assets, non-current assets, total assets, equity and net financial result also increases during the transition from one stage to another. Shares cost and material costs in total sales decreased at each stage by increasing the technical and organizational level of production.

Thanks to intensive use of fixed assets to make further progress value index of capital is the largest in the growth stage, and the maximum capital-labor ratio is achieved at the stage of equilibrium and alliances, because the highest level of availability of fixed assets in the consolidated companies compared to other stages, which helps maximize productivity at the last stage. Based on the data and using the method of grouping spread the food industry for the concentration index CR3 and HHI to high ($ESI < 1000$; $CR3 \leq 50$), moderately high ($1000 < ESI < 2000$; $50 \geq CR3 \leq 70$) and moderately low ($2000 < ESI < 7000$; $70 \geq CR3 < 100$), which will allow us to identify the level of competition for certain types of economic activities of the food industry (table 7.6).

Arrange food industries by value of the coefficient of concentration of the three largest producers and index value has enabled the Institute to acknowledge the low concentration of production in major food markets of Ukraine and, given the relationship between concentration and competition in the market, high competition for them. table. 7.6 field are in order of increasing concentration levels and profitability. Entry barriers in the industry are changing proportionally the same horizontally.

Table 7.6. Grouping food industries Ukraine by the level of competition (Source: author constructed according to [5; 6])

The level of competition		
High HHI < 1000 CR ₃ ≤ 50	Moderately high 1000 < HHI < 2000 50 ≥ CR ₃ ≤ 70	Moderately Low 2000 < HHI < 7000 70 ≥ CR ₃ < 100
Production and preserving of meat. Processing and canning fruits and vegetables. Milk processing and cheese production. Production products from meat, poultry and rabbits. Production milling industry. Processing and canning of fish and fish products. Bread and bakery products. Manufacture of rusks and biscuits and more. Production of ethanol. Production of sugar. Production of wine	Production of crude oil and fat. Production ice cream. Production of cocoa, chocolate. Production of pasta. Processing of tea and coffee. Manufacture of condiments and seasonings. Production of mineral water and soft drinks	Production of malt. Production of beer. Production and preserving of meat and poultry. Production of juices from fruits and vegetables. Production of margarine and other fats table

Note: the sample results taken into account all of the food industry in Ukraine in 2015

According to empirical evidence highly concentrated industries, high concentration ratio for the industry may be a signal margin between price and cost. As for Ukraine low concentrated industries, it should be noted that this situation is a cause of low production efficiency of food products. The coefficients of capacity, assets, the cost of one hryvnia output, return on assets decreased during the transition from high to low concentrated industries. Thus, the increase in concentration low concentrated areas can be considered as the direction of their effective development. One of the growth factors such efficiency is economies of scale, defined as the fraction of market output necessary to ensure that the company has reached a minimum long-term average costs. An important source of economies of scale is the specialization of labor and equipment, which is provided by increasing the scale of the enterprise. As for the negative effects of economies of scale, it is currently the only one, which is that of scale enterprise senior management is becoming increasingly difficult to control the whole enterprise.

Data table. 7.7 show that the concentration of production has a greater level of HHI and CR3 in areas where there is a small number of enterprises. In the field of conservation of potatoes are 26 productions (HHI – 5 340.20 and CR3 – 96,62), and in milk processing and cheese are 430 companies (HHI – 100,00 and CR3 – 12,11). Based on the results of concentration of production food industry Ukraine (table 7,5) determine the stage of consolidation [7, p. 34] by economic activity (table 7.7).

Table 7.7. Level of concentration of production of food industry of Ukraine according to the stage of consolidation in 2015 [Source: Calculated according to the author [6]]

Economic activity, the production:	HHI	CR3	The number of enterprises	Stage consolidation	Characteristics stages
of potatoes	5340,2	96,6	15	Elementary	A small number of companies. The high level of concentration. Begin first mergers and acquisitions. The increase is mainly due to domestic production concentration. Low barriers to entry to the industry
finished pet food	8145,2	96,5	26		
baby food and dietary food	4863,0	87,7	48		
spices and seasonings	1601,5	63,1	92	Growth	A significant number of enterprises. Forming key players. The increase is mainly due to the concentration of foreign production. For this stage characterized by a large number of mergers and acquisitions. A significant role is played by the size of the company
prepared animal feeds	1546,7	57,5	230		
tea and coffee	1486,1	56,8	68		
alcoholic beverages	1021,6	45,1	89		
other food products	770,4	39,1	268		
wines	607,2	34,8	96		
fruits and vegetables	589,8	34,6	279		
fish, crustaceans and molluscs	506,4	29,8	264		
Milling	161,8	13,8	749	Specializations	A significant number of enterprises. Successful players are expanding their core businesses, exchanging or eliminating secondary units, and continue to pursue an aggressive policy on ahead of the competition. Identify industry leaders. Opportunities for outdoor concentration of production reduced
milk, butter and cheese production	100,0	12,1	430		
Bread and bakery products *	189,0	15,1	1020		
meat	213,3	16,4	357		
sugar	308,4	18,9	258		
meat products	358,8	22,2	516		
ice cream	1863,4	57,7	42		
soft drinks	2145,6	59,1	474		
cocoa, chocolate and sugar confectionery	1650,4	61,8	137		
oils and animal fats	2057,3	69,3	437		
pasta	2411,1	71,9	108		
starches and starch products	2126,8	72,0	23		
fruit and vegetable juices	2481,8	72,0	58	Equilibria and alliances	A small number of companies, Level of concentration of production is more than 70%. Large companies can form alliances with other giants, as growth at this stage is becoming increasingly problematic. There is an active diversification
poultrymeat	3121,9	75,9	37		
beer	2269,7	89,4	71		
malt	2800,2	85,7	13		
Margarine and similar edible fats	3474,4	89,5	29		

Note: the sample results taken into account all of the food industry Ukraine

According to calculations carried out in the food industry correlation coefficient between the level of concentration and the number of enterprises is (-0,79), indicating a significant inverse relationship between these indices, i.e. decreasing number of companies increased level of concentration.

Analysis of the concentration of production of food industry of Ukraine according to the stages of consolidation showed that the initial particular include: processing and preserving of potatoes, production of the finished pet food, baby food and dietary foods. At the stage of growth are: production of spices and seasonings, Manufacture of prepared feeds for animals kept on farms, the production of tea and coffee, distillation, rectification and mixing of alcoholic beverages, production of other food products, manufacture of rusks and biscuits, manufacture of wine production other kinds of processing and preserving fruits and vegetables processing and preserving of fish, production of milling industry. Stage specialization represented, milk processing, production of butter and cheese, bread and bakery products, meat, sugar, meat products, the production of ice cream, soft drinks production, production of cocoa, chocolate and sugar confectionery, oil production and animal fats, production of pasta and flour products such. Other industries, including manufacturing, production of fruit and vegetable juices, meat of poultry, the production of beer, malt production, the production of margarine and similar edible fats – are under equilibrium and alliances.

Research of concentration of production by economic activity shows the food industry, which is currently used approaches makes it difficult to objectively analyze it. Comprehensive, systematic evaluation of concentration of production provides application concentration factor (CR) and Herfindahl-Hirschman Index (HHI). Calculations concentration factor (CR3) for three of the food industry and the Herfindahl-Hirschman Index (HHI) for all operating companies for each economic activity estimated the level of concentration of production and classify the economic activities of the food industry as low concentrated moderately concentrated, and highly concentrated moderate concentrated and according to the initial stages of consolidation, growth, specialization, balance and alliances. An objective assessment of the level of concentration of production serves as an indicator for determining economic activity belonging to a certain stage of consolidation and accounted for substantiation priority areas of concentration of production.

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7.4. The stages of internal communications diagnostics at the industrial enterprise

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The market economy and highly competitive environment of modern enterprises require optimizing not only production and marketing processes, but also management component. Efficiency of industrial enterprise management largely dependent on the quality and timeliness of information exchange between all links of the management system. It requires formation of an effective system of internal communications that will provide the availability of necessary information, the possibility of its application in the required time, the ability to implement new solutions quickly, willingness to change, etc. In this regard, the goal is the evaluation of the internal communications systems current state at the industrial enterprises and improvement of the results of the evaluation.

Initially, one has to mention that internal communications (IC) are suggested to be process of information exchange between separate persons and/or groups of persons at various levels in the organization management owing to traditional and modern tools and means, considering peculiarities of the enterprise communicational activity organization, provides participants' accurate determination in the process and regulation of their interconnections and allows to evaluate IC from business-processes position.

In general, owing the differing character of approaches to estimate internal communications state, study of their separate constituents and necessity to form the only approach to diagnose internal communicational processes (ICP) at the enterprise, considering its all constituents, IC diagnostics procedure at the enterprise is suggested to conduct by the investigated diagnostics algorithm (fig. 7.4). It provides consequent stages passing and allows to structure this process.

Thus, one of the first stages is to determine diagnostics directions, including object, subject and tasks of analysis and to estimate efficiency by the enterprise communicational processes.

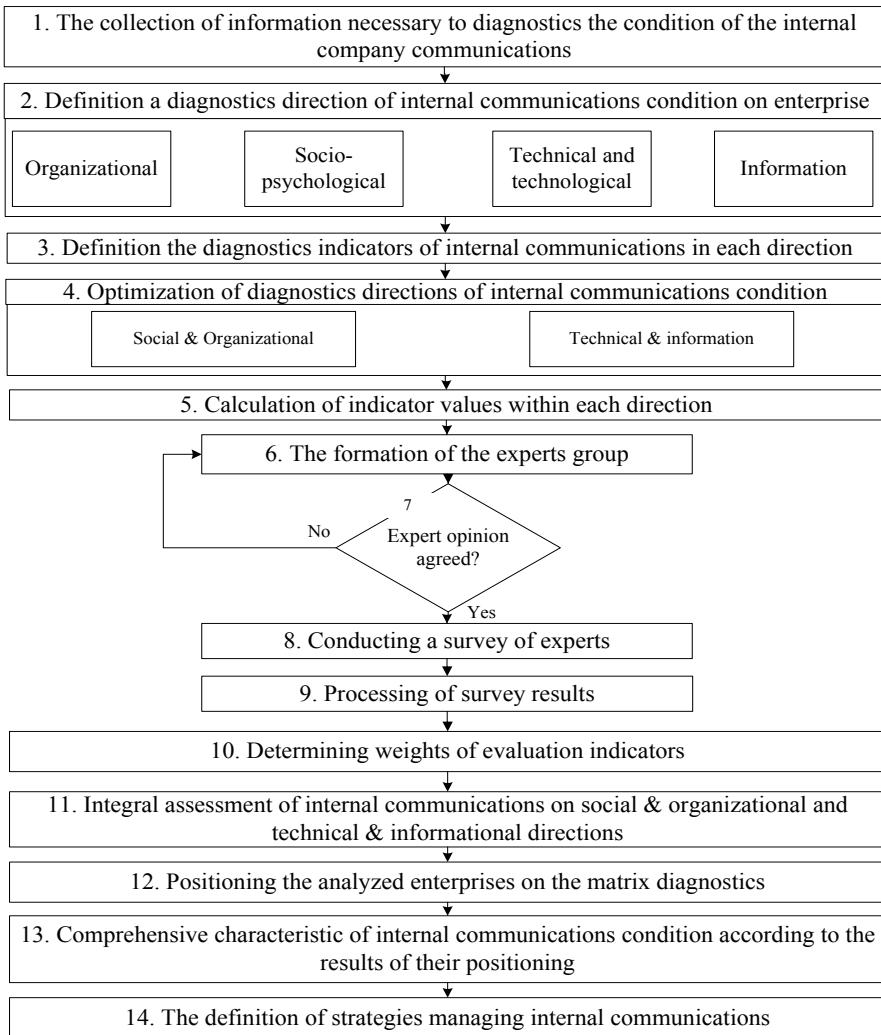


Figure 7.4. Diagnostics algorithm of internal communications condition on industrial enterprises

Correspondingly the object of diagnostics is ICP system with the following components: organizational subsystem, informational, technical and technological, social and psychological subsystem.

The subject of diagnostics within organizational subsystem comprises the following elements: managerial technologies, organizational structure of management, personnel.

In this case tasks are:

- to evaluate the achieved results;
- to define personnel work efficiency;
- to determine real level of the workers' competence;
- to reveal necessities to advance qualification;
- to estimate managerial decisions at their development stage;
- to estimate intermediately the conduct of made managerial decisions etc.

Informational subsystem has such elements as communication lines and nets. Therefore the process of communications estimation has the following tasks:

- to analyze feedback existence;
- to analyze communicative breaks existence;
- to find information reliability;
- to estimate information sufficiency;
- to determine communicative connections duration etc.

Within technical and technological subsystem the following subjects of estimation are foreseen: software, hardware, information processing system. In this case diagnostics tasks include:

- analysis of the necessary technologies sufficiency;
- determination of the software availability;
- determination of the informational security level;
- analysis of the users' workload with computers etc.

Thus, the social and psychological subsystem has such components which are subjects of the interior communications diagnostics, as: social interconnection, roles in the management system, psychological peculiarities.

The interior communications diagnostics tasks include:

- analysis of the personnel social adaptiveness;
- finding of the workers' psychological portrait;
- receiving of information about social and psychological climate in team;
- analysis of the workers' interconnection levels;
- estimation of devotion degree, workers' motivating etc.

It's necessary to set criteria for every diagnostics object element to estimate them. Having analyzed various approaches [1; 3-8; 10-13] one suggests classification of factors according to the mentioned subjects of the communication estimation in the following directions (fig. 7.5): organizational, technological, social and psychological, informational.

One has to point out that there are quantitative and qualitative factors among given ones to diagnose the ICP state (the last are based on the experts' estimation). Thus experts' estimations are based particularly on

workers', managers of different levels, production lines and control questioning.

The next phase is formalised assessment, which provides calculation of the three most common ratios in accordance with selections of components (one for each subject of evaluation) for each direction.

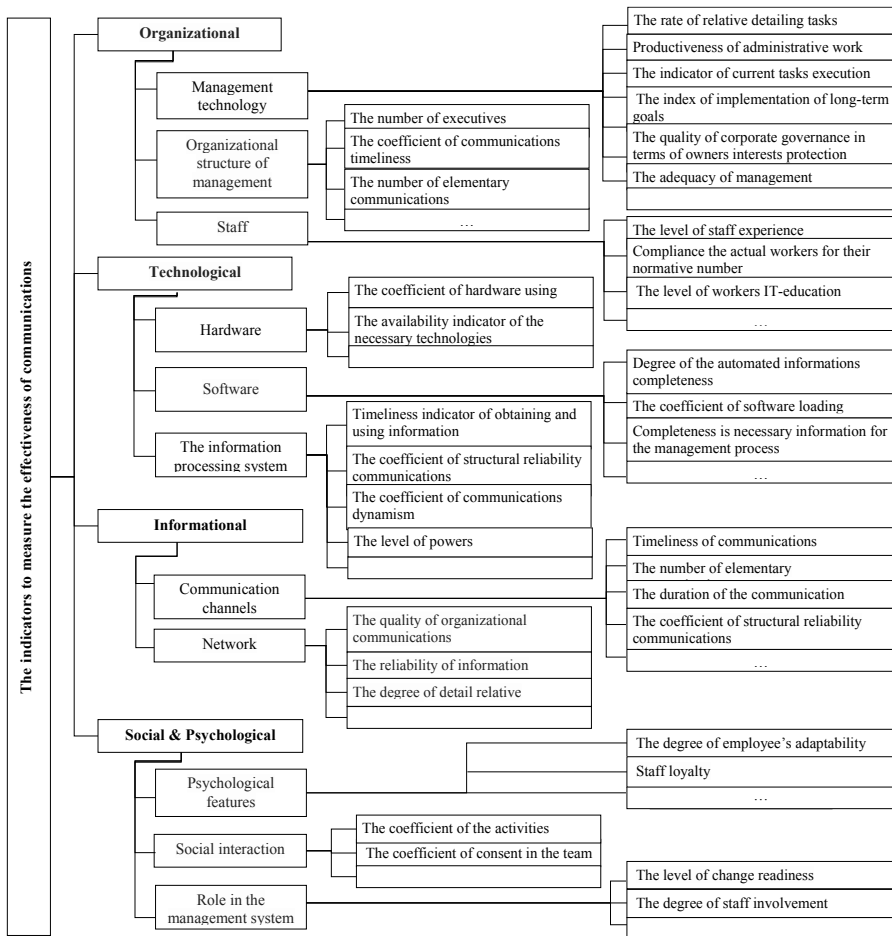


Figure 7.5. Classification of indicators to measure the communications effectiveness by the constituents elements of the internal communications system on the industrial enterprises (fragment)

Selection coefficients based on the company's specific and primary purpose, goals and objectives of the communication management

evaluation. Indicators for which will be made calculations are given in table 7.8.

Table 7.8. Indicators of the system of internal communications diagnostics

Approach	Indicator	Formula	The components essence	Reference value
Organizational	The factor of safety management system	$K_{saf.} = 1 - \frac{K_{unsold}}{K_{tot.des.}}$	K_{unsold} – the number of unsold solutions; $K_{tot.des.}$ – the total number of decisions taken in the division	1
	The coefficient of overlapping functions	$K_{dupl.} = 1 - \frac{K_{dup.works}}{K_{norm.works.}}$	$K_{dup.works}$ – the number of works that are duplicated within the division; $K_{norm.works}$ – normative number of works in division	1
	The level of staff experience	$K_{exp.} = \frac{K_{nes}}{K_{total}}$	$K_{nes.exp.}$ – the number of employees with the necessary knowledge and skills, people; $K_{tot.empl.}$ – the total number of employees, people	1
Social (psychological)	Staff loyalty	Calculate the concordance coefficient to determine the degree of concordance of experts' opinions on the types of questions		installed by experts
	Calculate the coefficient of consent in the team	$K_{Tc} = \frac{n \sum (E_{bi})^2 - (\sum E_{bi})^2}{n^2}$	n – the number of interviewed workers; E_e – employee assessment; i – the number of the employee	area of unity is in the range from 0 to 1
	The degree of staff involvement	Expert assessment of the criteria involvement in solving corporate tasks, the interest in work; initiatives and focus on improving the efficiency of their work and the work of the whole enterprise		installed by experts
Informational	The presence of communication gaps	Expert assessment, based on a finding any discrepancies between the quantity, quality and timeliness required and in fact the received information for the successful implementation of the labor process		installed by experts
	The coefficient of informations completeness	$K_{comp.inf} = \frac{I_p}{I_{neces.inf}}$	I_p – the amount of information available to the decision-makers, %; $I_{neces.inf}$ – the amount of information necessary to make an informed decision	1

Table 7.8. continuation

Approach	Indicator	Formula	The components essence	Reference value
Technical and technological	The coefficient of software loading	$K_{soft.load} = \frac{N_{us.}}{N_{sort}}$	$N_{us.}$ – the number of computer's potential users in enterprise; N_{soft} – the number of installed on the computer units of software products, units	1
	The coefficient of hardware using	$K_{hardw.us} = \frac{n}{N_{us.}}$	n – the number of computers in the information system	1
	Timeliness indicator of obtaining information	$K_{timeline} = \frac{I_{timeline}}{I_{neces}}$	$I_{obt.}$ – the volume of the information received in a timely manner, %; $I_{neces.}$ – the amount of information necessary to make an informed decision, %	1

At the same time qualitative indicators convert to relative using the following formula:

$$K_{qual.} = \frac{O_{ent}}{O_{max}} \quad (7.1)$$

O_{ent} – a quality score in points, which the company received in the i -th indicator;

O_{max} – the maximum possible score in points for the indicator.

Taking into account the presence in the classification quantitative and qualitative indicators is proposed to apply the relevant scale, allowing to represent values of between 0 to 1. In accordance, desired value indicators is in the range (0,66-1).

However, having regard to gravity of availability interrelated indicators and a high degree of probability of occurrence duplication settlement we propose narrow down the number of components to two diagnostic groups of indicators:

1) social and organizational (a combination of organizational, social and psychological components). Within this component provided for the calculation of indicators such as: coefficient of management reliability, staff loyalty, cohesion in the group, the index productivity growth.

2) technical and information: the information processing reliability, completeness of the information, software workload coefficient, coefficient of computer using.

The next stage of diagnosis is integral indicator calculation for each components taking into account the its importance:

$$K_{iHT} = \sum_{i=1}^n K_i \cdot V_{ai}, \quad (7.2)$$

- K_i – value of i -th diagnostic coefficient;
- V_{ai} – importance of i -th diagnostic coefficient;
- n – diagnostic coefficients numbers ($n=3$).

Importance determined by an expert for each particular company to reflect the specificities of an activity. Experts are leaders and experts analyzed the company and involved (if necessary) specialists. They are experts in the analyzed market segment. Sum of importance indicators for each component must be equal to the unit, sum of importance in each component of the system of internal communications should also be equal one To determine the reliability of the results and coherence of expert opinion will be calculated concordance coefficient and Pearson criterion [2]. The received values of the generalized integral factors by the social and organizational and technical and informational components concerning enterprise interior communications are put to the summery table. To estimate enterprise interior communications it is proposed to form matrix of their state diagnostics (fig. 7.6).

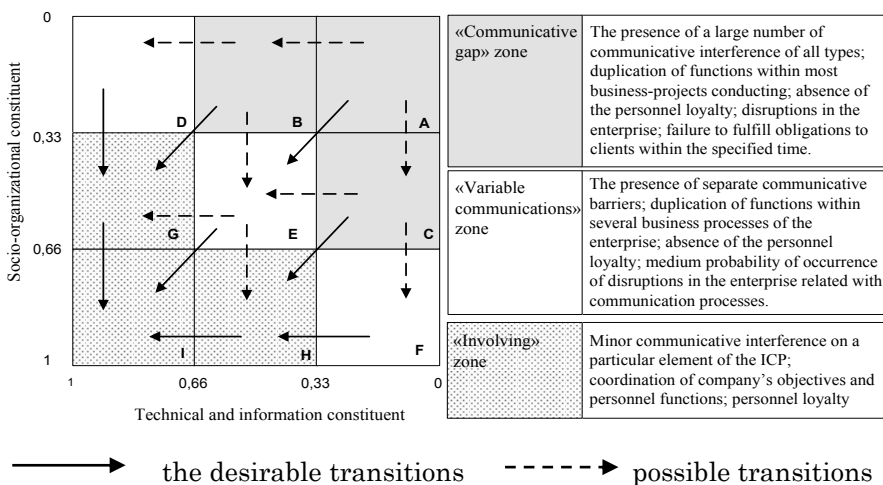


Figure 7.6. Matrix diagnostics of ICP condition with the choices of managerial actions

It has 9 quadrants, received after division of quadrant 1x1 into equal parts. The values of social and organizational component are put on the vertical axis, technical and informational ones – on the horizontal axis. The enterprise is positioned on the matrix depending on integral factors values in the mentioned components. Matrix has three zones: «involving» zone, «variable communications» zone, «communicative gap» zone. Due to the positioning enterprise appears in one of quadrants. It allows to imagine and evaluate interior communication state at the enterprise.

Characteristic of quadrants is presented in table 7.9.

The quadrant with coordinates Ksoc.-org. (1-0,66): Ktechn.-inf. (1-0,66) is the best location. It is the highest level of the both constituents development. In such situation enterprise has to keep the interior communicative processes existing state, avoiding the enterprise value decrease in general and particularly business-processes efficiency. Ideally all enterprises have to orient the interior communications management to be in this quadrant.

Table 7.9. Characteristics of ICP diagnostics matrix quadrants

Zone	ICP state characteristics	Quadrants characteristics		
		Coordinates/level		Essence
		Soc.-org. constituent	Technical-inf. constituent	
«Communicative gap» zone	Great number of all types communicative blocks; duplication of functions within all	[0,33-0) Low	[0,66-0,33) Average	Separate communicative barriers, informational flows breaks, duplicate channels of messages delivery; duplication of functions within most business-projects conducting; absence of the personnel loyalty, low level of readiness for changes, unfavourable social and psychological climate in team, low degree of the management reliability
	Business-process at the enterprise; absence of personnel loyalty; failures in enterprise work; nonfulfillment of duties for clients in the fixed term	[0,33-0) Low	[0,33-0) Low	Duplication of functions within most business-projects conducting; absence of the personnel loyalty, low level of readiness for changes, unfavourable social and psychological climate in team, low degree of the management reliability; low degree of the information reliability, great duration of the communicative processes, absence of the necessary software and hardware optimal quantity
		[0,66-0,33) Average	[0,33-0) Low	Duplication of separate functions, low level of readiness for changes, volatile social and psychological climate in team; low degree of the information reliability, great duration of the communicative processes, absence of the necessary software and hardware optimal quantity

Table 7.9. continuation

Zone	ICP state characteristics	Quadrants characteristics		
		Coordinates/level		Essence
		Soc.-org. constituent	Technical-inf. constituent	
«Variable communications» zone	Communicative breaks of separate types; duplication of functions within some business-projects conducting at the enterprise; absence of enterprise personnel loyalty; average degree of the errors probability in the enterprise work, connected with communicative processes	[0,33-0) Low	[1-0,66) High	Duplication of functions within most business-projects conducting; absence of the personnel loyalty, low level of readiness for changes, unfavourable social and psychological climate in team, low degree of the management reliability; optimal number of the necessary equipment and technologies, high degree of information reliability and information timeliness providing
		[0,66-0,33) Average	[0,66-0,33) Average	Separate communicative barriers, informational flows breaks, duplicate channels of messages delivery; duplication of some functions, low level of readiness for changes, volatile social and psychological climate in team
		[1-0,66) High	[0,33-0) Low	Loyal personnel existence, high degree of the management reliability, favourable social and psychological climate; low degree of the information reliability, great duration of the communicative processes, absence of the necessary software and hardware optimal number
«Involving» zone	Possible existence of little communicative barriers by the proper ICP element; coordination of enterprise targets and personnel functions; enterprise personnel loyalty	[1-0,66) High	[1-0,66) High	Loyal personnel existence, high degree of the management reliability, optimal number of the necessary equipment and technologies, high degree of information reliability and information timeliness providing
		[1-0,66) High	[0,66-0,33) Average	Favourable social and psychological climate, high degree of the management reliability, separate communicative barriers, informational flows breaks, duplicate channels of messages delivery
		[0,66-0,33) Average	[1-0,66) High	Optimal number of the necessary equipment and technologies, high degree of information reliability and information timeliness providing; duplication of separate functions, low level of readiness for changes, volatile social and psychological climate in team

Thus, if the enterprise gets in the «involving zone» (this zone can be characterized by relatively high level of enterprise internal communications) it is suggested to use strategy of internal modifying communications

or strategy of positions maintaining. Strategy of internal modifying communications provides active use of human, information and technological potential of the enterprise. Strategy of positions maintaining is aimed at enterprise IC strengthening. It allows to prevent decreasing of business processes efficiency.

«Variable communications» zone is characterised by a communicative interference of the individual types, functions duplication in the business processes, lack of staff loyalty to the enterprise, etc. If the enterprise gets in the «variable communications» zone it is proposed to use strategy of communications' developing diffusion and strategy of penetrating communications.

The strategy of penetrating communications is aimed at communication gaps bridging and business processes effectiveness strengthening (using all components of the enterprise potential – human, financial, research, information, technological, etc.).

The strategy of communications' developing diffusion involves active development of less developed components of internal communicational processes. It allows to move directly to «involving zone» with lower level of costs (using financial, human and administrative resources).

The worst location is quadrant of the «communicative gap» zone with coordinates $K_{soc.-org.} (0,33-0)$; $K_{rtechn.-inf.} (0,33-0)$. Such enterprise is characterized with real absence of the strong communicative links, absence or inefficiency to use hardware and software. It leads to often failures in the enterprise work, and thus to great decrease of the business-processes efficiency.

The last stage is to investigate proper recommendations to improve ICP management at the industrial enterprises.

In such case it is necessary to establish cooperation between personnel and administration, to build well-defined system of the communicative flows. Otherwise the enterprise can be liquidated owing to its inefficient activity. The resultant Table provides the analysis of concrete enterprise interior communications, further actions strategies investigation concerning their realization and development and grounding of the proper recommendations. Principles and methodic to form improving acts for interior communications system management will be observed in the next sections.

Thus, the existing approaches to estimate and diagnose enterprise IC state are analyzed. It makes possible to determine advantages and disadvantages of the existing methodic. The conducted analysis provides system of interior communications estimation factors, which consider author's approach to distinguish in enterprise ICP a few constituents. Separate factors (quantitative and qualitative) are suggested to use for

every structural element. Quantitative factors are indexes, measured from 0 to 1. Qualitative factors are transferred into relative estimations, through division of concrete enterprise factor by maximal value of the factor. It makes possible to calculate integral factors for every constituent element in the interior communications system (interior communications subsystems). Integral factors take into account factors weight, defined by expert method, considering calculation of the experts' thoughts agreement degree. The expert method helps to consider enterprise branch specifics, and concrete enterprise features. The suggested system of factors proposes to build enterprise positioning matrix depending on enterprise interior communications state. It takes into account socio-organizational and technical and informational constituents state. The proposed matrix helps visually to evaluate interior communications at the enterprise, to distinguish and to estimate variants crossing between quadrants with purpose to increase interior communications level. In future it gives chance to develop further strategic actions to improve interior communications system management and to calculate prognosticated value of the business-process economic effect, considering interior communications processes state at the enterprise.

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7.5. Formation of relations between the enterprise and consumers as the basis of the industrial enterprise development

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Nowadays life makes the companies think about their existence: for whom and for what they work, from whom and from what depends their well-being and what it is necessary to do to become competitive and profitable. In order to prevent the destruction of the enterprise in certain periods it is necessary to know the typical problems and mistakes of organizations in this section of road. It is necessary to understand the nature of changes that occur in the enterprise and around it, to watch closely the factors that ensure the success of the organization, and do not miss the moment of introduction of changes.

The study of the industrial enterprise development process is necessary to conceive clearly the development stage of the company at the current moment, what typical problems have enterprises to solve, what mistakes make enterprises in a similar situation and what is the most efficient way to overcome them. In other words, it is necessary to conduct such a study because it allows to consciously and effectively manage the development of industrial enterprise.

Under conditions of a constant increasing of competition and quality improving standards concerning production and services, companies focus their attention on choosing the right marketing strategy. The creation of a marketing strategy should be primarily aimed at establishing the relationship between the enterprise and consumers.

The works of such scientists as F. Raikheld [1], R. Kaplan, D. Norton [2], R. Oliver [3], J. Hitomer [4], D. Hremler, S. Braun [5], J. Griffin [6], F. Kotler [7] and others are devoted to the problems of feedback. These scientists investigated the problems concerning the studying of customer satisfaction and loyalty. However, some aspects remained unexplored. Among them are the formation of an effective interaction and feedback between the company and consumers with the aim of forming customer loyalty at all stages of the product life cycle of the company.

Summarizing these concepts [1-10], we can say that feedback means the flow of information from the consumer to the enterprise, which somehow affects the future activity of the company. This information can be sent by means of questionnaires, surveys, guestbooks, call-centers, mail and so on.

In this study it is proposed in the definition of the term to take into consideration the other side of feedback, namely, from the enterprise to the consumer that is the formation of an effective cooperation between

the enterprise and consumers concerning the feedback at all stages of the product life cycle of the company that influences the nature of the future activities of the company (fig. 7.7).

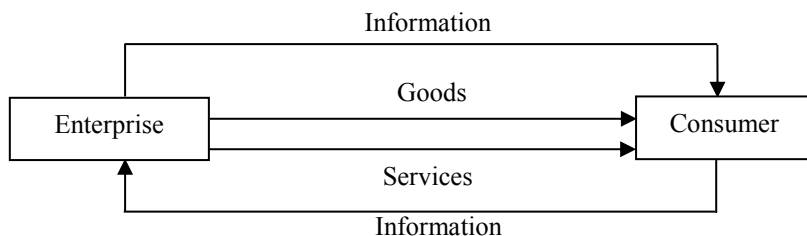


Figure 7.7. Formation of an effective cooperation between the enterprise and the consumer concerning the feedback

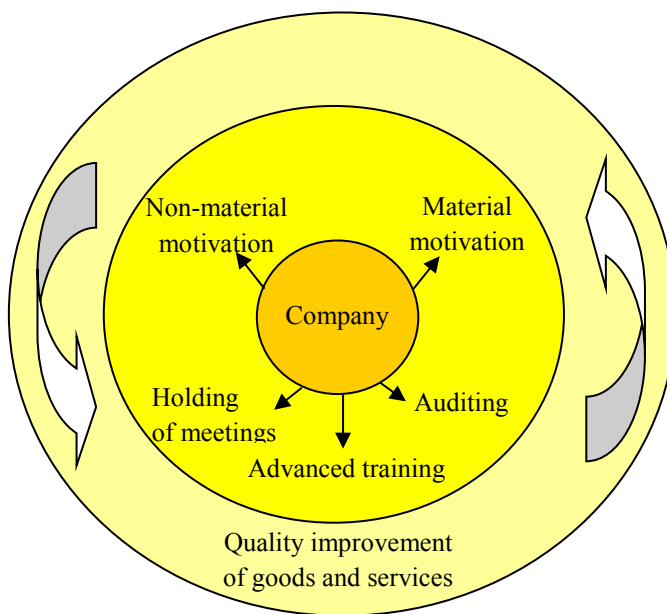


Figure 7.8. The interaction of external and internal feedback concerning the formation of an effective cooperation between the enterprise and the consumer

The main purpose of establishing the system of feedback and analysis of received information is the desire of the enterprise to operate successfully in the future or to avoid previously committed mistakes.

Further it is examined kinds and types of feedback at every stage of the product life cycle and it is proposed to establish a decision making concerning the formation of an efficient interaction between the company and the customer as to the feedback.

Feedback is an important part of marketing, especially for external and internal marketing. External marketing describes an ordinary work of the enterprise concerning the development, distribution and offer of goods and services to consumers. Internal marketing is associated with learning and motivation of company employees, promotion of high quality service. External feedback is forming the interaction between the enterprise and the consumer, and internal feedback is forming the interaction between the company and its employees. The quality of internal feedback is closely connected with the quality of the external feedback. The quality level of goods and services depends on the level of employees' satisfaction. Every company tries to minimize the employee turnover, to train, prepare and keep valuable professionals. Figure 7.8 shows the interaction of internal and external feedback.

The functions of feedback are: the support and encouraging to actions that lead to success and give the desired result; change of an ineffective behavior; motivation (material and non-material); teaching to use the experience of previous mistakes and failures. Under positive external feedback in this paper should be understood the objective data in the form of suggestions, proposals, ideas that have a friendly nature and mostly indicate a good attitude of the consumer to products.

It is proposed to interpret a negative external feedback as the objective data in the form of complaints or even refusal to consume goods or services as a result of dissatisfaction with the characteristics of the goods. Let us consider the types of feedback at various stages of the product life cycle (table 7.10).

Positive internal feedback serves to evaluate an effective employee's behavior and thus to strengthen this line of human behavior in similar situations. In case of positive feedback, it serves to state things that were done well, why were they good and what actions of the employee led to positive results. Positive feedback is a powerful tool for employees motivation. It is particularly effective when it contains a reference to a specific behavior, although generalized praises also encourage their staff and increase the confidence in their own abilities.

Negative feedback is used to transfer the valuation of an inefficient behavior and aimed at changing of employee's actions. In this case, it is pointed out things that were done wrongly, what are alternatives of behavior in this situation and why their outcome could be better than as a result of the taken measures.

Table 7.10. Types of feedback at various stages of the product life cycle

Types of feedback	Stages of the product life cycle
At the stage of product development a positive information can be used as an additional source for ideas search. The basis of the goods characteristics will be wishes of consumers, and the company can focus their attention on them. Negative information can be obtained from the experience of competitors in the market	1) Product development
At this stage, analyzing all the information the company can understand whether the correct marketing policy was chosen. The company can improve it or choose another one. Negative feedback will help to identify product weaknesses and eliminate them	2) Product introduction into the market
During the increase stage the company has to pay more attention to the information coming from consumers, it will help to extend this stage of the product life cycle. In such a way, it is possible to supplement a service or modify the product, including complaints and suggestions	3) Increase
At the stage of maturity competitors mostly produce analogues of the goods, so the company has to stimulate the loyalty of its customers. The company has to emphasize that their opinion and attitude are appreciated above all	4) Maturity
Marketing department has to analyze customer feedbacks (both positive and negative ones) at all stages of the product life cycle, and to rethink the idea of the product	5) Decline

Let us consider in detail the feedback and methods at each stage of the product life cycle (PLC). There is the following algorithm at the first stage (product development) (fig. 7.9).

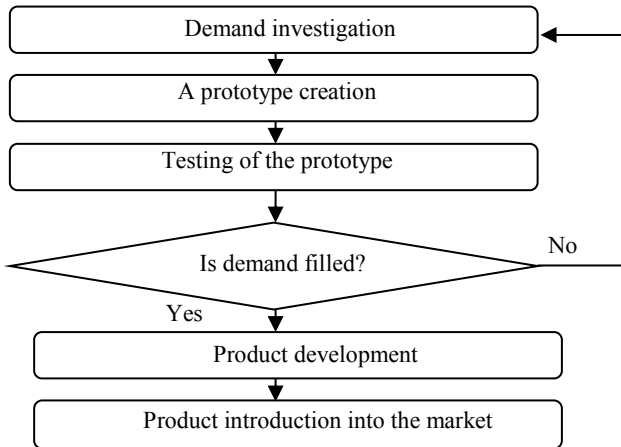


Figure 7.9. The formation of an effective interaction between the company and the customer concerning feedback at the I stage of the PLC

Before creation the concept of the product, marketing specialists have to identify and examine existing needs in the target market. The most rational and effective methods of feedback are the following: questionnaires and surveys that can be conducted both with random people and specially formed focus groups. After analyzing the collected information a prototype product is created. It is tested in the same focus group or most similar to it. Potential consumers of the product have to answer the main question: are they satisfied with the product. In the case of a positive answer the marketing department proceeds to the next stage of the process that is product development. If consumers are not satisfied with the product it is necessary to reexamine the wishes and demands and to identify what they do not like in the developed product.

At this stage the company must also promote internal feedback development. Employees have to be imbued with an idea of creating this product in the form of «brainstorming» or continuous survey, offering to supplement the product or service with the features at one's pleasure.

The second stage of the product life cycle is its introduction into the market (fig. 7.10).

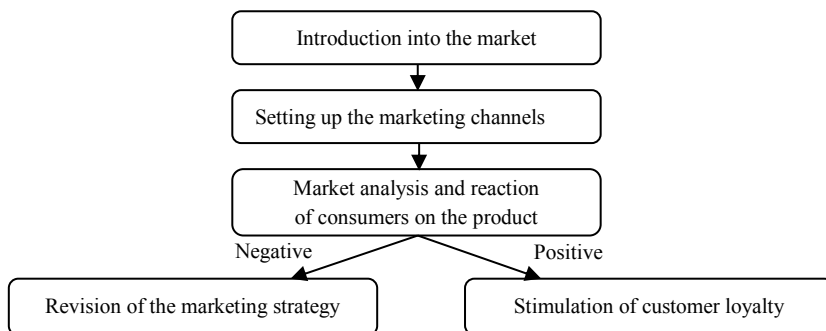


Figure 7.10. The formation of an effective interaction between the company and the customer concerning feedback at the II stage of the PLC

At this stage it becomes evident whether a correct marketing strategy was chosen. The product is taken on trial, marketing channels are setting up. The first demand is forming. Analysis of the consumers' reaction on the product enables to choose the future way of product development. In case of negative reaction the marketing policy should be revised or chosen another one. In case of positive reaction it must be consolidated and it is necessary to stimulate the customer loyalty. It is also necessary to note merits of the collective in case of a positive market reaction. This may be premia, certificates or other corporate celebrations of the first

success. The last method of non-material stimulation integrates the collective in an informal setting and allows management to mention the most active employees. At this stage, it begins to form «the corporate spirit» of the enterprise collective.

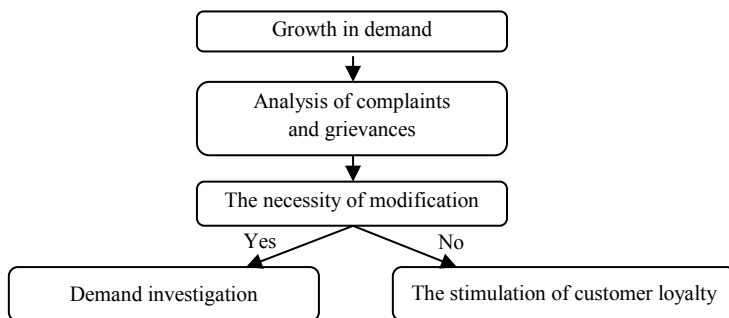


Figure 7.11. The formation of an effective interaction between the company and the customer concerning feedback at the III stage of the PLC

The stage of increase is characterized by an increased demand for the product or service and by the increase of profits of the company (fig. 7.11).

At this stage begins the increase of competition. The enterprise has to monitor the emergence of product analogues or service in the market. In order to maintain the leading positions it is necessary to analyze constantly customers' complaints and suggestions. This will allow to monitor the change of trends and tastes and to react very quickly. The results of this analysis will help to understand the necessity to carry out modification of the product at this stage. In case of making such a decision the company needs to conduct the investigation of new demands of consumers. If consumers are completely satisfied with the product, the company is sufficient to extend measures to stimulate the customer loyalty. The enterprise should pay attention to the service and level of service. Because in time, while creating product analogues by competitors, a good service at all stages of customer servicing will stimulate their loyalty. That's why at this stage support staff, its qualifications and experience are of great importance.

Feedback at the IV stage of PLC is represented by the feedback at the I stage of PLC (fig. 7.9). In order for as long as possible to earn a regular income from sales, at the stage of maturity of PLC enterprises implement the following marketing strategies: product modification; market modification; marketing mix modification.

Feedback at the V stage of PLC. The stage of decline is characterized by a great recession in demand and profits from the sale of goods. The enterprise has to review all the information received from the feedback with consumers and to rethink the idea of the product, that is, to form an effective interaction between the company and the customer concerning feedback at every stage of PLC (fig. 7.12).

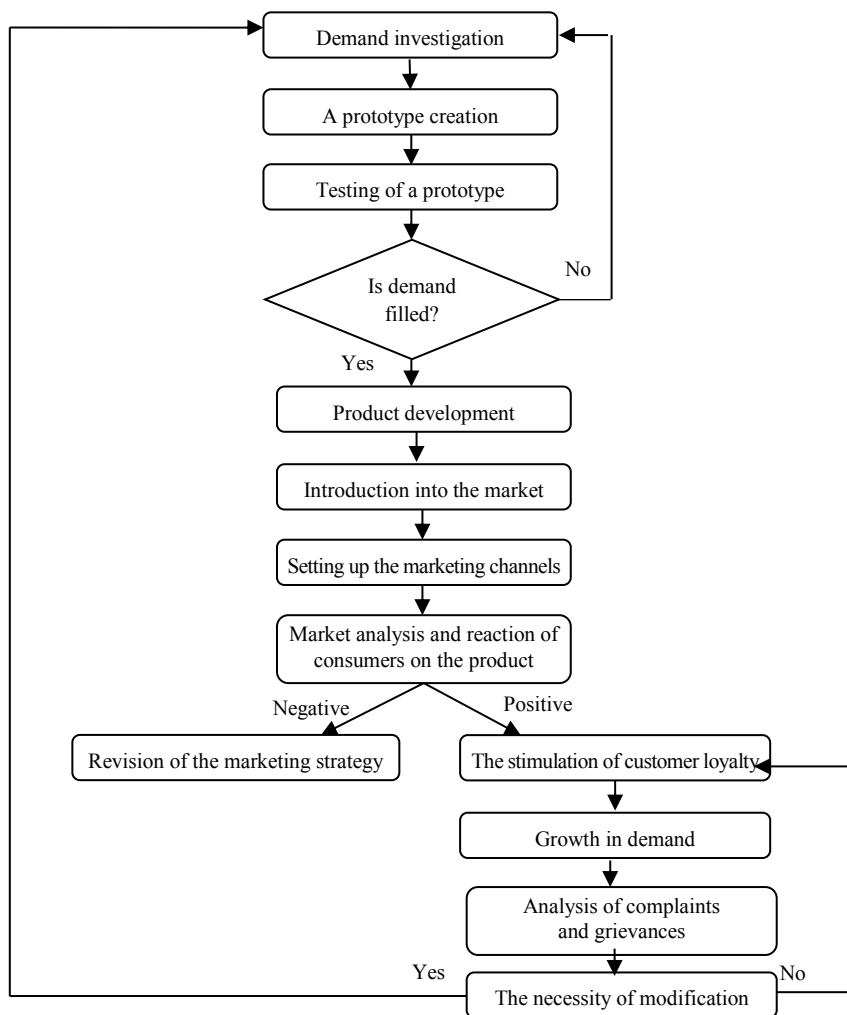


Figure 7.12. The process of decision-making concerning the formation of an effective interaction and feedback between the company and the consumer at every stage of PLC

The usage of this feedback will help the company to establish effectively the communication channel at all stages of the product life cycle. This will reduce risks and react more quickly to changes of market trends. The usage of different feedback methods will help to increase the amount of information coming both from consumers and the personnel of the enterprise. At the stage of decline the company should encourage staff to further work at new product. The company's policy must be clear and every employee has to understand what strategy will be selected by the company. Therefore, only a combination of internal and external feedback will give an opportunity to the company to work efficiently in the target market.

Marketing is the foundation of the development. An industrial enterprise is an open socio-economic system, as there occurs both a constant interaction of the system with the outdoor environment (the influence of macro- and microenvironment factors) and a constant interaction and change of elements within the system (adaptation of the internal environment to the outdoor) with the benefits of transparency for customers, partners and staff. Modern enterprise development is possible only on the basis of marketing because the company is effective only in case if its usefulness to consumers, the connection with which is precisely one of the main functions of marketing.

Marketing provides an exchange between socio-economic system, its internal and external environment of matter, energy and, mainly, information, and, importantly, this is a two-way exchange, and in the absence of the exchange the development process is impossible because of absence of the necessary connections between the source and object of development. The difference in definition of marketing activity development is focusing on: the relationship among the subjects that provide the effectiveness of the enterprise vital activity, communicatory interaction based on resolving existing contradictions that arise in the process of the company interaction with the most influential subjects of internal environment, namely partners and consumers.

The issue of company development was investigated in works of such scientists as L. Melnyk [11], A. Pushkar [12], O. Raievnieva [13], O. Trydid [14], N. Lepa [15]. But despite a large number of investigations in this area, the problem of the relationship between the enterprise and consumers and the enterprise development in modern conditions remains relevant and determines the necessity to conduct an in-depth research. On the basis of literature searches [11-15] it is improved the definition of marketing activities in the following way. Development is a purposeful process of quantitative and qualitative changes in the internal environment of the enterprise that helps to transform its external

environment on the basis of solving the existing contradictions among the interests of market participants, its partners and consumers based on their informational cooperation [16].

On the basis of the conducted literature analysis [11-16] and investigation of existing classifications of the company development, we offer a model of the industrial enterprise life cycle (fig. 7.13).

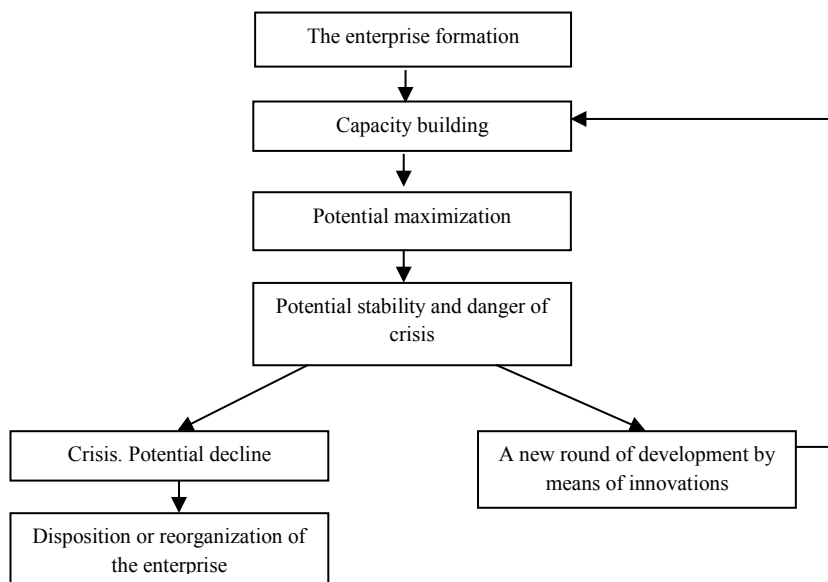


Figure 7.13. Model of the industrial enterprise life cycle on the basis of classification of enterprise development types

Description of the developed model.

1) The enterprise formation. This stage of the life cycle of the proposed model according to the content corresponds to R. Fatkhutdinov’s stage «projection» [62, 56]. It is necessary to agree with his opinion that strategic marketing, carried out at this stage, determine the features and parameters, as well as the cost-effectiveness of all subsequent stages of company development. However, this does not mean that strategic marketing accompanies only the stage of the company formation. All further stages are also based on the results of strategic marketing.

The enterprise formation (describing it in terms of types and forms of development) is a stage of revolutionary development, as it is an unexpected and even a sudden change in the environment. On the other hand, it is a stage of intensive development, because it is accompanied

by a new, previously non-existent object. In addition, it is a stage of a progressive development that is a forward development.

2) Capacity building (in the names of this and subsequent stages in the proposed model it is used the concept of potential, according to the definition of G. Kleiner [1]). This stage is characterized by a gradual increase in the quantitative and qualitative characteristics of the industrial enterprise. Using current terminology, it is the stage (as well as all subsequent ones) of an extensive and evolutionary development. It is the stage of the evolutionary development because changes of the object happen quite gradually. And it is the stage of the extensive development, as it occurs the development of already existing, previously created object. This stage, as well as the previous one, is characterized by progressive development.

3) Potential maximization. This stage reflects the highest point of the industrial enterprise. It is determined according to parameters developed during the company formation. Here are already used all opportunities given at an early stage and revealed at further stages of the enterprise life cycle by the strategic marketing. At this stage the potential of the industrial enterprise reaches its maximization and its further development under existing parameters is impossible. This is the last stage of progressive development.

4) Potential stability and danger of crisis. This stage can be of long or short duration, depending on various factors that influence the development of the company. At the same time this stage is a kind of turning point, the bifurcation point of the industrial enterprise development. Depending on the interaction of strategic marketing and management activity it can begin decline of potential or its further increase due to the finding new parameters or possibilities. This stage is reasonable to describe in terms of new elaborated types of development.

a) A new round of development by means of innovations. Further development by means of identifying new parameters or possibilities means the usage of different innovations to prevent possible potential decline. The repeatedness of life cycle is based on periodic introduction of new products, technologies or management techniques. Thus, the point is about the cyclic character of innovations application: the superposition of the process of certain innovations introduction on the maturity stage of the other ones, allows to obtain a constant progressive orientation of the industrial enterprise development.

b) Crisis. Potential decline. Crisis is the result of necessary strategic actions absence at the previous stage. It is characterized by potential decline of the industrial enterprise, that is decreasing the function of capacity to a minimum. According to the definition, this stage is also

considered as a stage of development, but this is a regressive development, that is a back development. The result of the potential decline is impossibility of further enterprise functioning and, consequently, its disposition or reorganization.

5) Disposition or reorganization. This is the last stage of the life cycle of the industrial enterprise, it is stipulated by the regressive direction of development. Thus, the object of development either changes the form and begins a new cycle in a new form, or ceases to exist at all.

It should be noted that all stages of the enterprise life cycle are characterized by a endogenous development, the source of this development is a strategic marketing as strategic management of industrial enterprise is based on the results of strategic marketing activity, and this means that marketing is the fundamental basis of modern industrial enterprise development (table 7.11). Moreover, in our opinion, there is a close relationship not only among the stages of the company life cycle and the development type at each stage, but also among the stages and the most appropriate strategy for them: stages of progressive development strategies conform to business growth; stability stage conforms to retention strategy and protecting existing market position or strategy of the business change; regressive stages of development conform to strategy of business reduction.

Table 7.11. Improving and proposals concerning the development of the industrial enterprise

Stage of the enterprise life cycle	Characteristic of the stage	Characteristic of the stage by means of existing development types	Characteristic of the stage by means of proposed development types
The enterprise formation	From nothing it is forming the structure of a new socio-economic system	Revolutionary intensive development that has progressive direction	The development is aimed at changing the structure of external environment as a result of emergence in it a new object and new connections. It is mostly characterized by social transformations. An explicit development
Capacity building	The gradual increase of quantitative and qualitative characteristics of already earlier formed system	Evolutionary, extensive development that has progressive direction	The development is aimed at changing the structure of internal environment of the system according to unregulated changes of external environment. It is characterized both by economic and social transformations. An explicit development

Table 7.11. continuation

Stage of the enterprise life cycle	Characteristic of the stage	Characteristic of the stage by means of existing development types	Characteristic of the stage by means of proposed development types
Potential maximization	The peak point in the system of development under existing parameters and possibilities	Evolutionary, extensive development that has progressive direction	The development is aimed at the most possible change of the internal environment structure of the system according to unregulated environment changes of external environment. It is characterized both by economic and social transformations. An explicit development
Potential stability and danger of crisis	The point of bifurcation in the system of development, is characterized by a possibility to choose the further direction of development	—	There are no obvious economic and social changes, no obvious direction of development. However, there is a hidden, latent development of the system
A new round of development by means of innovations	The continuation of development of the system by means of new parameters formation and identifying new possibilities. Returning to the stage of capacity building	Evolutionary, extensive development that has progressive direction	The development is aimed at changing the structure of the internal environment of the system according to unregulated changes of external environment. It is characterized both by economic and social transformations. An explicit development
Crisis. Potential decline	It is characterized by the inability of further functioning of the system under available parameters and possibilities. The absence of necessary changes leads to the degradation of the system	Evolutionary, extensive development, that has a regressive direction	There is a change in the structure of internal environment of the system under the pressure of unregulated changes of external environment. It is characterized both by economic and social transformations. An explicit development
Disposition or reorganization	As a result of the impossibility of further system functioning in its present form, the system changes its form and begins its life cycle from the beginning or ceases to exist at all	Evolutionary, extensive development, that has a regressive direction	There is a change in the structure of internal environment of the system under the pressure of unregulated changes of external environment. It is mainly characterized by social transformations. An explicit development

An example of approbation is the proposed system «consumer – company – partner», which is the core of the refined conception of strategic management of enterprise marketing activity development, the main stated positions of which differ significantly from existing ones. The differences are revealed in enrichment of the content of the structural characteristics, their addition, improvement of stages content, the expansion of the domain, the foundation of which has three components, they are the competitiveness of the enterprise, business attractiveness of partners concerning collaboration with it and the readiness of customers to the consume the products of the enterprise, and which consists in determining the integrated assessment for each of three components of marketing strategies forming. The differences are also revealed in application of the theory of fuzzy sets theory for their qualitative differentiation and positioning of enterprises according to the proposed components with the definition of appropriate marketing strategies (fig. 7.14-7.16).

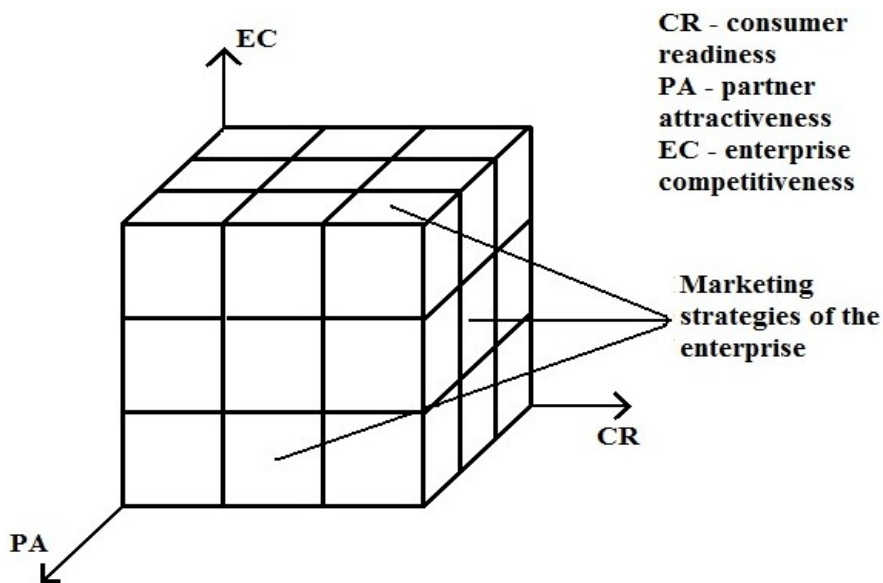


Figure 7.14. Representation of enterprises marketing strategies in tridimensional space

Distribution of marketing strategies by quadrants of marketing strategies cube according to three components of enterprise marketing strategies forming is presented in table 7.12.

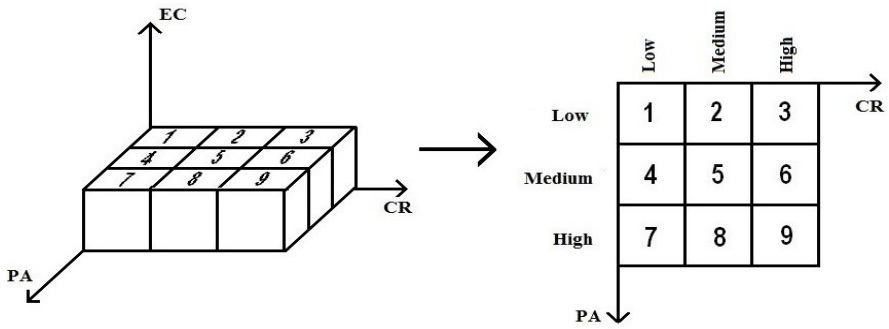


Figure 7.15. A generalized matrix of company positioning according to the consumers readiness and attractiveness of the partner that is the basis of the set of proposed marketing strategies

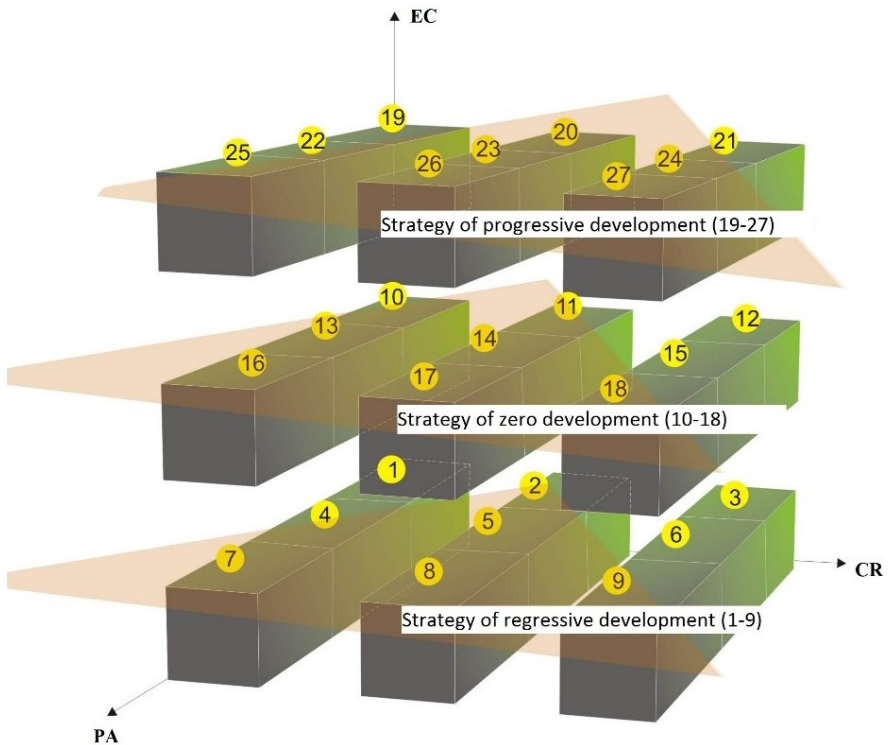


Figure 7.16. Distribution of marketing strategies development by quadrants

Table 7.12. Distribution of marketing strategies by quadrants of their sets

Characteristics of the enterprise state	Type of marketing strategy	Advantages	Disadvantages
<i>The Low level of competitiveness of the enterprise</i>			
1, 2, 4 Numbers of the quadrant			
Crisis great dangers of liquidation	Corporative strategy of regressive development, reasonable communications with the consumer, one-time relations with the partner; economic strategy; Competition – the survival; Functional – an imitating one	The danger of liquidation can be overcome	Requires concentration of all enterprise resources to achieve a common goal, moreover, debt financing is possible
3, 5, 7 Numbers of the quadrant			
The same or reorganization	Corporative strategy that is a regressive development, moderate or active communications with the consumer, one-time relations or cooperation with the partner; economic; Competitive – the survival; Functional – an imitating or innovative one	The same	The danger of reorganization can be insurmountable. It requires concentration of all enterprise resources to achieve a common goal
6, 8, 9 Numbers of the quadrant			
The same under the real danger of reorganization	Corporative strategy that is a regressive development, active or intensive communications with the consumer, cooperation mainly with the partner; economic; Competitive – the survival; Functional – mainly innovative	The danger of reorganization can be overcome, it is possible to reach the state of stability	Requires concentration of all enterprise resources to achieve a common goal
<i>The Medium level of competitiveness of the enterprise</i>			
1, 2, 4 Numbers of the quadrant			
The state of the enterprise is stable, the further development is possible	Corporative strategy that is a zero growth, reasonable communications with the customer, one-time relations with the partner, economic or social strategy; Competitive – the strategy of parity; Functional – an imitative or innovative one	Transformation into the capacity building	Pressure from competitors. Heavy expenses for the development of marketing activity, involvement of highly professional specialists, testing new marketing methods

Table 7.12. continuation

<i>The Medium level of competitiveness of the enterprise</i>			
3, 5, 7 Numbers of the quadrant			
The state of the enterprise is stable, the tendency of further development is explicit	Corporative strategy that is a zero growth, reasonable or active communications with the consumer, point relations or cooperation with the partner, economic or social; Competitive – the strategy of parity; Functional – mainly innovative	A rapid transition to capacity building	Pressure from competitors. A constant even increasing expenditures for the development of marketing activity: constant testing of new marketing methods
6, 8, 9 Numbers of the quadrant			
The state of the enterprise is stable, the maximum level of enterprise development outside the system consumer – company – partner	Corporative strategy that is a zero growth, an active or intense relations with the consumer, cooperation mainly with the partner; economic or social; Competitive – the strategy of parity; Functional – an innovative one	A rapid transition to the use of maximum potential and achieving market leadership is possible	The same as with the progressive. Increasing expenditures for the development of marketing activity: a constant testing of new marketing methods
<i>The High level of competitiveness of the enterprise</i>			
1, 2, 4 Numbers of the quadrant			
Market leader, the prospects for building a system user –company – partner	Corporative strategy that is a progressive development, reasonable communications with the customer, one-time relations with the partner; social; Competitive – the strategy of leadership; Functional – mainly innovative	The possibility of transition to the first stage of forming a system user –company – partner: integration with the customer or partner	Heavy expenses for the development of marketing activity, social responsibility for the results of the company activity
3, 5, 7 Numbers of the quadrant			
Market leader, the first stage of formation of the system user – company – partner	Corporative strategy that is a progressive development, moderate or active communications with the consumer, one-time relations or cooperation with the partner; social; Competitive – the strategy of leadership; Functional – an innovative one	The possibility of transition to the second stage of the formation of the system: addition of the consumer or the partner that is not a part of the system	The constant even heavy expenses for the development of marketing activity and increase of social responsibility

Table 7.12. continuation

<i>The High level of competitiveness of the enterprise</i>			
6, 8, 9 Numbers of the quadrant			
Market leader, the formation of the system user – company – partner is completed	Corporative strategy that is a progressive development, active or intense relations with the consumer, cooperation mainly with the partner; social; Competitive – the strategy of leadership; Functional – an innovative one		The constant progressive heavy expenses for the development of marketing activity and a constant increase of social responsibility

Table 7.13. Strategies according to the results of distribution of industrial enterprises machine-building complex by quadrants of the cube of states space (fragment)

Quadrant	Pec	Ppa	Pcr	Year of investigation	Name of the enterprise	Characteristics of the enterprise state	Marketing strategies
2	1	1	m	2013		The state of crisis, a great danger of liquidation, there is a significant need in the increasing product competitiveness, stability of company's position, it is required the activation of cooperation with partners and customers. The danger of liquidation can be overcome	Corporative marketing strategies: regressive development, economic strategy; competitive marketing strategy of survival; functional marketing strategy – an imitating one
				2014	-		
				2015			
14	m	m	m	2015		The state of the enterprise is stable, an explicit tendency of further development, the possibility of quick capacity building, increase of stability position and activation of cooperation with other participants of creating of consumer value, that are customers and partners	Corporative marketing strategies: a zero growth, economic or social strategy; competitive marketing strategy of parity; functional marketing strategy, mostly innovative

To develop proposals for the formation of relations between the enterprise and consumers on the development of industrial enterprises,

including marketing activities as the basis for enterprise development, specific branch of machinery construction, it is reasonable to analyze the peculiarities of functioning of Ukrainian machine-building enterprises. During the investigation, it was analyzed 40 industrial enterprises of Ukraine, which operate in different regions of Ukraine. Enterprises represent various directions of activities, most of them are specialized in energy, transport, agriculture, electrical machinery construction and instrument engineering.

Using developed methodical support, the totality of 40 investigated industrial enterprises was distributed beyond the offered cube of strategies (tables 7.13-7.14), where appropriately, is a sequence number of the entity and the specific gravity of the group of enterprises that got into a certain space of the cube in the total volume of investigated industrial enterprises. Spaces are marked by a number in the circle. As a result of distribution of industrial enterprises in the cube of space it was defined characteristics of the enterprise stages and appropriate marketing strategies that are corporate, competitive and functional in retrospective during 2013-2015. Most investigated industrial enterprises as of 2015 can be described as partners with a medium level of business attractiveness (75%).

Table 7.14. Definition of management strategies of the company marketing activity development

Axes of coordinates	Quantitative meanings of qualitative attribute limits		
	Low class	Medium class	High class
Competitiveness of the enterprise	0–0,31	0,32–0,49	0,50–1
Business attractiveness of partners	0–0,31	0,32–0,50	0,51–1
Customer readiness to consumption	0–0,42	0,43–0,66	0,67–1

The limits of integrated assessments classes of competitiveness, partner business attractiveness and customer readiness according to formed membership functions.

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Part III

INNOVATIVE GROWTH AND CORPORATE SOCIAL RESPONSIBILITY

Section 8

Socio-ethical marketing in the innovative activity: practical aspects

8.1. Major factors of increase of business entities social responsibility and their marketing

Orlov P.A.

Nowadays in the process of marketing activities, the business entities widely use technology information achievements, the global Internet, and mobile. In almost all spheres of the national economy, use of digital marketing tools is progressing intensively. On one hand, it provides benefits to all market participants. The advertisement cost is reduced; distribution costs and goods prices are reduced. On the other hand, in some cases, the marketing development increases the issues as of its social responsibility as business entities. For example, neuromarketing and aroma marketing are the innovation that is created socially irresponsible, according to the author's point of view.

The aim of the work is theoretical generalization and further development of scientific-methodical approaches and practical recommendations of improvement of business entities social responsibility and their marketing activities due to the global economic crisis.

The works of R. Reidenbach, P. Robin, F. Kotler, K.L. Keller, J.J. Lamben, R.A. Fatkhutdinova, V.P. Bulaeva, senior V. Rudelius, A.F. Pavlenko, E.N. Azarian, P.V. Pylypchuk, M.A. Oklander, P.G. Perervy, M.I. Beliavtseva and many other famous domestic and foreign scientists are devoted to the actual problem of business entities' social responsibility and marketing. However, some aspects of this multifaceted problem require further research.

From the first days of the crisis in most industrialized countries, governments were forced to abandon the concept of neoliberalism and have dramatically increased state economy regulation. This allowed to show enterprises practicing social irresponsibility. Especially banks have noted. The US banking system has been developing on the basis of neoliberalism concept for many years before the crisis and has provoked the global financial crisis which grew into the economic one. This resulted in the massive damage to the world economy. Banks were profiting at the social irresponsibility expense and were paying huge bonuses

(premiums) to their superiors, and their rescue from bankruptcy during the crisis was being carried out at the state budget expense, in other words tax payers'. Also England's and other countries' banking systems negative role was turned out.

According to the author's point of view, business entities' social responsibility, including banks, is in comfortable, safe working conditions and decent payment for their staff, social infrastructure development, tax evasion prevention, ensuring adequate environmental protection and also using socially responsible marketing (SRM). In Ukraine the proportion of socially irresponsible «shadow» economy, enterprises which do not pay taxes and fees, according to some estimates, are 30-50 % or more. The elimination or reduction at least 8 to 10% would significantly increase revenues to the state budget and reduce taxes on all businesses entities, accelerate the country socio-economic development and improve the population life quality.

The EU fights quite actively against tax evasion. The crisis has forced the EU to fight the evil that was created by them. It is known that the world's largest offshore zones were created by the European countries for their advantage. European champion of tax evasion through offshore companies is considered the Switzerland banking system. Until 2014, it used, the banking secret introduced in 1932. It was canceled in 2014. In the course of global forum of transparency in tax policy being held in Berlin, more than 90 countries committed to the automatic information exchange. It is noted that there are still countries, including Panama, which has not signed the treaty [1]. France, for example, for tax evasion, including the offshore zones use includes not only large fines, but also imprisonment. In the crisis years the fines have been increased 10 times, and the maximum term of imprisonment – from 5 to 7 years (more details in [3]). In Ukraine legislation the strict financial and criminal liability for similar crimes has not appeared yet.

In 2016 on the basis of the investigation which has been conducted by journalists from 76 countries, the Panama offshore scandal information has appeared. The Prime Ministers of Iceland, England, about 20 Ukraine senior citizens and businesspersons, and many other countries' businesspersons were involved in it. But there are no or a few France and other countries' high-ranking citizens, where the strict liability for evasion from taxes is provided. Similar problems with other Ukrainian businessmen and «tax havens» have been appearing before. In 2013 a lot of our businessmen have been using similar services in the Cypriot banks. And statistical reporting, as the author has noted, a large investment in the EU (Cyprus) and in Ukraine from Cyprus was recorded. On

1.04.2013 the foreign direct investments from Cyprus were the largest: 17692,2 million dollars or 31,8 %.

The journalist's information about the Panama offshore scandal has periodically been increasing, respectively, and the number of Ukraine senior citizens and businesspersons, implicated in this, has increased to several hundreds.

Important role in the business entities social responsibility belongs to SOM use. The SOM goals are quite rightly determined in the works of F. Kotler and K. Keller, and J.-J. Lamben [4-5]. These authors were among the first who started to research this highly relevant but ignored in favor of business problem in 1970. Kotler F. and Keller K. have grounded SOM targets, which aimed at improving both consumers' and society wealth in general. But there are not basic SOM criteria in their definition and in the examples of SOM practice is reduced only to business voluntary social initiatives. The more grounded approach to the SOM concept is contained in the works of V. Rudelius and the textbook «Marketing», prepared by him in KNEU named after Vadym Hetman [6-7]. Then a large number of scientific papers has appeared. According to the author's point of view, SOM entities, are the strict compliance of the state normative acts requirements in the sphere of social responsibility in the domestic country territory and countries where their goods and services are exported; the inadmissibility participation in corruption schemes; the inadmissibility to carry the fraud for personal gain; the inadmissibility of the production and products sales hazardous to the property, morality, health, lives, environment and society in general, and deceptive advertising and methods of psychological influence on consumers in order to impose a favorable solution or any purchase; the manifestation of socially-oriented initiatives. It should be counted that, unfortunately, socially oriented initiatives are used by some companies as a cover for their social irresponsibility. The business entities that do not meet at least one of these SOM criteria, are socially irresponsible.

In any country the business entities social responsibility wide establishment and their marketing activities, according to the author's point of view, can provide only the highest quality of the country economic system and appropriate state regulation. It provides: 1) separation of power and business; 2) corruption eradication; 3) the presence of well developed laws and regulations on the business entities social responsibility and SOM; 4) effective mechanisms development for the implementation of laws and regulations on the basis of strict liability, including financial and criminal; 5) regular funding from the state budget of the product quality laboratory investigations; 6) public organizations development

for consumer rights protection with the state support; 7) promote business entities social initiatives.

The author has changed the definition of the country economic system. The country economic system is a combination of three major subsystems:

1) the productive forces; 2) economic relations; 3) method of public authorities participation in coordination and management of economic activities, social product distribution and redistribution and business entities social responsibility. In the description of the third subsystem functioning the need for the state participation is not only in the economic activities coordination and management, the social product distribution and redistribution, but also is in business entities social responsibility. The business entities social irresponsibility does not only distort the social product distribution and redistribution, but in many cases, it causes huge damage to the property, morals, health, lives, environment and society in general. The third subsystem quality determines the effectiveness of the country socio-economic development, the business entities social responsibility and marketing and, consequently, the quality of consumed products and services (hereinafter – products), as well as the country life. Improving the country economic system quality is possible only on the basis of the democracy development. In the public administration all segments of the population should be adequately represented. This provides the high economy social orientation and high social standards.

Proper, effective state regulation does not require maximum extension of the state bodies interference into business entities activities, and the choice to regulate only the most significant areas and develop a quality control system over them with uninterrupted funding from the state budget. Along with effective, there are known the inefficient state regulation methods, aimed at, for example, the corruption increase. They should not be allowed.

The countries with the models of mixed economic systems, which have a fairly high level state regulation and social economy orientation, such as Sweden, Norway, Japan, Australia, South Korea, Germany, England, France, China, Finland, cope with the crisis better than others capitalist countries. In modern conditions in most of the capitalist countries it should be stressed that, on one hand, there is the growing number of socially responsible enterprises. On the other hand, the number of enterprises whose owners exploit low quality products consumers, its staff, refuse to pay taxes, is growing very rapidly.

The global financial crisis created by the banking system and some other US financial market subjects, since 2008 turned into a global

economic crisis and caused enormous damage to most of the world countries. Nobel laureate Joseph Stiglitz, who analyzed the causes of the crisis, which he called the great recession, said: «the Economy needs a balance of market and government roles, the achievement of which is largely due to the non-market and non-governmental institutions activities. Over the past 25 years, America has not only lost this balance, but also contributed to the creation of this unbalanced state of affairs in many countries throughout the world» [14, p. 3]. He rightly believed that the US created and exported a real recession [14, p. 27]. The big US and EU banks have irresponsibly profited from the rate of interbank loan LIBOR manipulation and the same pan-European rates Euribor. British Bank Barclays was fined by the British and American financial regulators in 2012 to 452 million dollars. Among his associates were such major banks as Citigroup, Royal Bank of Scotland, UBS, JP Morgan, HSBC, Deutsche Bank. The total damage interest rates manipulation was estimated at 1 trillion. \$. During the crisis, the financial pyramids in the USA, France, Japan, Russia, Ukraine and other countries were exposed. And the hugest Bernard Madoff and Allen Stanford financial pyramids were made in the USA, causing damage to its customers from different countries respectively, at 65 and 7 billion dollars. According to media reports in Ukraine for the period from 2014 to November 2016 there have been eliminated about 80 commercial banks. These banks depositors suffered heavy losses and have been picketing the national Bank for a long time. In 2011, the dioxin scandal in Germany broke out, the feeding fat manufacture – the firm Harles & Jentzsch while profit persuiting has caused tremendous damage to many livestock products producers and consumers in the result of natural supplements additives change for production of biological fuel wastes.

It could cause irreparable harm to the health of millions of German and other countries inhabitants – importers of this production, if it was not rather quickly identified by the German state supervisors. The scandal of poor female prostheses for breast augmentation has got the international fame, produced by the French company Poly Implant Prothese and exported to many countries. In profit persuit medical silicone mass was replaced by the cheaper construction. This has caused severe disease among a huge number of women in France, England, USA and other countries, who had undergone surgery for breast enlargement. The large British pharmaceutical company Glaxo Smith Kline was pleaded guilty for the fraud and concealing information about the drug safety, which caused many of the patients' serious health problems, and paid a record in the history of the United States fine of \$ 3 billion. In 2013, a scandal with beef meat received widespread in the EU, it contained horsemeat

with harmful to humans medicine (see [9]). In 2016 France Consumers' Association after studying of 245 meat products labels of thirteen national brands and seven supermarkets has published the results of the investigation. The main conclusion is that there is still no transparency about the origin of meat used in the ongoing food products. Though meat is in the center of many food scandals that shook France and the EU for the period 1980-ies. Here are the most notorious of them. In 1986 there was a scandal associated with the disease «mad cow disease» in England. The disease leads to irreversible fatal changes in the animals brain. Researchers estimate shows that over ten years around 200 000 cows will be infected with this disease. The infection spreads by inclusion in animal feed: meat and bone meal prepared from infected animals carcasses. In 1996 in England the first cases of transmission to people were discovered. In 2003 in Asia, the avian flu broke out.

It was gradually spreading in the middle East and then into Europe and Africa. This epidemic is particularly dangerous because the disease can be transmitted to humans. At the end of 2015 avian flu has caused considerable damage to waterfowl producers in South-Western France. According to farmers' estimate, the crisis will cost up to 270 million euros, including 140 million euros for producers. The government has already announced assistance in the amount of 130 million euros for the victims of the hatcheries and waterfowl producers. Additional compensation for companies will be determined later. The avian flu breaking out in Scotland has forced the government to cut almost 40 thousand livestock chickens in early January [20].

In Ukraine, the low business entities' social responsibility and their marketing is a consequence of the country economic system insufficient quality, insufficient social economy orientation, high corruption, insufficient state regulation. It is especially manifested on a large scale: by commercial banks; pharmacies that sell drugs without prescriptions and counterfeit medicines; in a large number of sold counterfeit goods (meat, dairy, alcoholic drinks, medicines, diesel fuel, gasoline, perfume), and also unfair advertising. In November 2012, pharmacies in Lviv region has withdrawn from circulation about three tons of counterfeit drugs, among them 30% of children's medications. In addition, such goods quality laboratory researches repeatedly allowed the reduction in funding, that is equivalent to the temporary control cessation. This article of the state Budget should be protected (more details in [9]).

For example, 3.04.2014 Verkhovna Rada amended the Law of Ukraine «On Ukraine State budget for 2014». As a result, from August until the end of 2014 funding for state control has significantly been reduced. Besides, the article 31 has appeared in the law: «to establish that

inspections of enterprises, institutions and organizations, individual-entrepreneurs by controlling authorities (except Ukraine State fiscal service) may be carried out during August – December 2014 only with the Cabinet of Ministers of Ukraine permission or by the enterprise verification request» [10]. According to media reports, after this article publication, the state control of goods and services quality virtually ceased. Unfortunately, this deregulation has still been continuing in 2016, according to media reports, for the period between 2014 and 2016, the number of sold counterfeit goods has doubled. Everything is counterfeiting from poisons against pests to cement. The forgeries range has increased significantly: fake shampoos, perfumes, mineral water [15]. Huge damages with very slow crime investigation have been done by the group of companies «BRSM», which was composed of: company «BRSM-Oil», LLC «BRSM», LLC «Ukrtransoil-2009», «RusUkrEnergo holding», LLC «Biotechnologies 2000», LLC «Element oil», LLC «Bel oil», LLC «Neftesbyt», LLC «AZS-oil», LLC «Oil Sintez», LLC «Ukrnaftatrans». The Ministry of Interior of Ukraine found that in the period 2014-2015, abusing its position and acting on a prior agreement, the group of companies officials «BRSM» organized the illegal acquisition of oil products manufacturing and marketing. The press service of the Ministry of Interior of Ukraine reported the first results of the investigation: «the complex of facilities for storage, handling and supply of oil and oil products, owned by the company «BRSM-Oil», was built without permit documents, and was not commissioned properly, which might indicate illegal production and storage adulterated excisable oil products, particularly gasoline for a long time». [16]. It is possible to assume that such huge violations were able to be admitted only under high corruption conditions. Pre-trial investigation is being carried very slowly. During the meeting in the Cabinet of Ministers the Minister of Internal Affairs Arsen Avakov said: «We opened against the company BRSM a huge production of payments to the state budget in the amount of 1.2 billion UAH through the creation of counterfeit gasoline, mixed with toxic additives, surrogate mixtures, gasoline, condensate. This item was issued for 92-, 95-octane gasoline and sold at gas stations» [17].

Counterfeit gasoline production and sale is a huge manifestation of the BRSM social irresponsibility and its marketing. The massive fire occurred at the oil depot during production of counterfeit gasoline, according to the journalistic investigations, has been lasting for a very long time. The firefighters from Kiev region, Zhytomyr, Rivne and other regional centers were involved in its fighting. Some people were killed during the fire. The fire caused huge damage to the environment and many settlements inhabitants health, including some areas of Kiev.

Moreover, the counterfeit contained a toxic gasoline additive. Huge damage to the country environment and residents incurred during the counterfeit gasoline vehicles consumption process. It should take into account the damage caused to the vehicle owners, due to the counterfeit gasoline forced use and necessary repairs. The total damage caused to the state, the environment and society in general while complex evaluation overpasses 1, 2 billion UAH according to the Ministry of Internal Affairs of Ukraine estimates in the process of pre-trial investigation.

The counterfeit gasoline production and sale have been done by a lot of companies. The President of the Association «The Ukrainian Union of Oil Products Market Operators» Leonid Kosyanchuk gives such estimates to the counterfeit gasoline (counterfeit), and the scale of its production in the country: «What is counterfeit? It's not just we have refueled, and after some time have come to overhaul the engine. It also means – the taxes of it have not been paid. What is the gasoline tax? It 171,5 euros per 1000 litres forgers get from 6 to 8 UAH per liter. I'm willing to say that every third liter – is a criminal liter. That is, the taxes of it are not paid, and it is not what you pay money for, that is, not gasoline. It's just a fuel mixture including gasoline, which can be 40-50% gasoline, all the rest coke components». [19]. The abominable crime stopping is possible only in the result of operative crime detection and harsh punishment.

The above information confirms the correctness made by the author in 2009 of a figurative comparison of private entrepreneurship with the fire. As you know, wealth is only properly managed fire and uncontrolled fire is the fire that brings massive multi-faceted damage to people and society as a whole. And poorly or uncontrolled government private enterprise in the profit pursuit does not stop even before the most serious crimes against their own fellow citizens.

In mass media there was information that many pharmacies irresponsibly were giving children and young people drugs containing narcotic substances without prescription. Their responsibility for these crimes is restricted by a small fine. The Internet market isn't practically controlled. In Cherkasy region the police detained drug dealers who were selling drugs amphetamine and marijuana. Communication with customers was via the Internet. It is estimated that the number of drug addicts in Ukraine has been increasing annually by 8% – a trend one of the highest in the world. About 70% of drug addicts are young people under 25 years. The percentage of women drug addicts is the highest in Europe. The total number of addicts in the country is 1,5-2 million people [11]. In 2016 on the TV channel «112 Ukraine» social advertising against drug abuse was transmitted by Ilya Kyva, the Head of the Department

of Ministry of Internal Affairs of Ukraine. He rightly emphasized that the pharmacy and all drug dealers started with the most vulnerable – our children. Using the criminal responsibility absence for these grave crimes and the presence of only very low material one, they are releasing children medicines containing drugs without prescription. Children become addicted to drugs very quickly, become their regular customers and very quickly degrade physically and mentally. It is definitely a useful social advertising against drug abuse. But the question arises, why it has started so late. The Ministry in its current content has been already being in its third year. Unfortunately, the social promotion did not last long because of I. Kyva's dismissal from the Ministry of Interior in 2016.

Producers and importers of alcohol, tobacco, and counterfeit products in Ukraine for many years have profited at the expense of social irresponsibility and caused huge harm to the society, according to the author's point of view, should be required to pay quarterly 3-5% of net profit on social advertising carrying out. The beer, because of the powerful lobbying, has related to alcoholic beverages only in 2015. Our country should also use the foreign budget addition experience not through cuts in social programs. In France, for instance, in 2011 the additional tax on drinks such as Coca-Cola was imposed and was based 0,036 euros per liter of beverage. This ensured the budget completion for 120 million euros per year. In response, the leadership of the European Coca-Cola branch threatened to stop investing in France, but quickly abandoned it. Apparently, because of scientists' large claims about the drink quality and its harm for the consumers.

In the work [12], published in 2009 the author proposed the priority exit directions from the crisis:

- strengthening the social protection of the nation lower layers;
- the organization of effective fight against corruption, instead of the earlier practiced sight to the struggle, as the corruption extent in the country was steadily developing and the record dimensions of the revealed bribes has been recorded in 2008-2009;
- the implementation of the complex legal and economic measures aimed at the progressive elimination of the shadow economy, which would significantly reduce the tax burden on enterprises by up to 40% with increase in receipts in all budgets levels;
- the introduction of a ban and strict liability for capital withdrawal to offshore zones with the purpose of tax evasion;
- improving the efficiency of state economy regulation, especially in the banking sector, within the legal field, as it was done in 2008, when the NBU imposed a moratorium on early deposit withdrawals contrary to the law.

It was emphasized that these problems are closely linked. The adoption of economic measures is not enough for solving them. If the corruption exists, it is impossible to eliminate shadow economy and block the capital export channels to offshore zones with the tax evasion purpose. With regret we have to acknowledge that significant improvements in these areas have not happened and for a lot of them the situation has worsened. Social standards have not been updated and the nation lower layers poverty has been increasing. Current legislation in the last 25 years allows numerous enterprises to use freely millions of Ukrainian citizens units that were allocated in the division of state property during the transition to a market economy. Some state leaders and politicians promised to solve this problem, but then the case was stopped. This is an example of not only enterprises social irresponsibility, and mostly government's one.

In countries with much smaller income gap between rich and poor there has been made more for the social protection of the nation lower layers than in Ukraine. In this regard, according to the author's point view, it is advisable to increase minimum wages and pensions, but state-owned enterprises and enterprises with domestic capital, to regulate the maximum and minimum wage by setting allowable gap between them. This will make quantities interrelated and will contribute to the income gap reduction between rich and poor. Now the gap in some areas is 250 or more.

Germany, France, USA and other countries government in crisis, do the policy of raising taxes on wealthy citizens with the purpose of helping the poor. In Ukraine, with much higher rich and poor income gap in 2011 the tax rates on income from 0 to 15 % were applied. This approach was consistent with the recommendations of Milton Friedman about the move from progressive income tax to a «flat». With the introduction in 2011 of the Ukraine Tax code there was a slight differentiation 0; 15 and 17%. In 2015, the rates were 0; 15 and 20%, and from the 1.04.2016 they were even reduced 0; 15 and 18%. For comparison, in France in 2008, the rates of income tax were 0; 5,5; 14; 30 and 40%. Later the rate of 75% was introduced for a short period. Besides, in 2011 the tax on dividends increased for more than 100 thousand euros per year from 19% to 41%. Income dividends are taxed in Ukraine constantly at the rate of 5% regardless of their size. The information suggests that in the past 25 years the tax laws were made in favor of wealthy citizens due to the excessively high representation and their interests lobbying in Verkhovna Rada.

There were signs that the EU lobby of commercial banks has achieved a significant easing of their state activities regulation. So, the newspaper «Les Echos» on the basis of data published by banks BNP Paribas,

Societe Generale and Natixis, found that in 2014 they had 71% of employees who were the millionaires than all the French banks had in 2011. In England and Germany, the situation was even worse. In 2014, Deutsche Bank had the largest number – 816 employees – millionaires. And 14 of them received from 6 to 9 million euros per month [13]. And this in a period when the second great depression came to the United States and several other countries. For example, in France – one of the most developed EU countries, in 2014 the overall unemployment rate was 10,4%, and among young people aged 15 to 24 years is 23,4%, versus, respectively, 10,2% and 9,8% in 2013.

In the EU banks the New economy innovations have again been practicing, including deregulation like in the United States. Joseph Stiglitz gave the following example of the bankers blatant gluttony. Nine of the largest creditor organizations suffered losses of \$ 100 billion. Received from the government under a special program of salvation 175 billion. 33 billion of these were spent on the bonuses payment. Nearly 5,000 employees received \$ 1 million and more. And the remaining money was spent on the shareholders' dividends payment. Dividends are a form of profit distribution among the shareholders. However, in this case there was no profit, and money allocated by the government was distributed [14, p. 65].

Since 2009, the author reiterates the conclusion that in countries whose economies are not able to provide the appropriate level of state economy regulation and its social orientation, the population is doomed to be operated by socially irresponsible businesses subjects, moral and physical degradation and even extinction. Ukraine and most other countries with a market economy, according to the author's point of view, should as soon as possible substantially improve the quality of economic systems and state regulation to encourage the formation of business entities social responsibility and their marketing activities. In the system of state economy regulation, special attention should be given to commercial banks and other subjects of financial market. There are signs that these entities billionaires' and millionaires' who are blinded by unrestrained profit pursuit and self-enrichment, have already begun preparation for the third great depression. Although it is still unknown when and what the outcome of the second one is.

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8.2. Using the potential of social marketing in the process of social and economic integration and adaptation of migrants

Chuprina E.O., Balueva O.V.

Ukraine has an advantageous geopolitical location that offers great potential for its development, creating additional conditions for attracting international migration. The findings suggest that the majority of foreigners in Ukraine come from the Commonwealth of Independent States (CIS). There are many citizens of China, Iran, and Syria among the migrants.

The strategic position of Ukraine has turned it into an important transit zone for migrants who seek entering the EU and often become «forced immigrants» because of the tough border control procedures.

Activation of migration processes in the modern world, and in Ukraine in particular, the emergence of immigrant communities increases the relevance of immigrant adaptation and requires the necessity of development and implementation of a modern, integrated and balanced integration and adaptation policy as a part of migration management. To be effective, the policy of migrants' integration is to be based on reliable information and conceptual framework. In recent years, marketing has proved to be an effective tool in the work of enterprises. Unfortunately, the marketing application for overcoming social problems turned to be quite rare. In our opinion, this situation requires an adjustment, as marketing tools have become a powerful lever for the solution of certain problems in the field of migration management.

Russian researchers made significant contribution to the study of the development of immigration processes. Among them are E. Libanova [1], I. Maydanik [2], O. Malinovsky [3]. However, in the necessity of forming an effective migration policy, the integration and adaptation of migrants require more in-depth scientific study.

The paper objective is to identify opportunities for the use social marketing potential in the formation of a comprehensive policy of integration and adaptation of migrants as a part of migration management. The results of the analysis of migration indicate that the total volume of inter-regional and external migration of the population of Ukraine in 2015 increased and amounted to 553,3 thousand people (1,3% of Ukraine's population) (table 8.1).

Researchers pay attention to the fact that since 2006, Ukraine registered the increase in population due to migration exchange, in the coming years this trend is fixed. Although the size of the migratory influx of people from abroad is small, this fact marks a turning point in the

migration situation in Ukraine and the transformation of the country of origin of immigrants into the country of destination for immigrants both from CIS and non-CIS [2, p.41].

Table 8.1. Comparative Analysis of Migrants Distribution Flows in Ukraine in 2011-2015 [4; 5], thousand people

	2011	2012	2013	2014*	2015*
All the migration flows					
Total of arrivals	669,4	726,4	675,9	542,5	553,3
Total of departures	652,3	664,4	644,0	519,9	519,1
Migration gain (reduction)	17,1	61,8	31,9	22,6	14,2
Internal migration					
Total of arrivals	637,7	649,9	621,8	499,8	522,6
Total of departures	637,7	649,9	621,8	499,8	522,6
Migration gain (reduction)	x	x	x	x	x
External migration					
Total of arrivals	31,7	76,5	54,1	52,7	30,7
Total of departures	14,6	14,5	22,2	21,6	21,4
Migration gain (reduction)	17,1	61,8	31	21,1	9,3

* excluding the temporarily occupied territory of the Autonomous Republic of Crimea and Sevastopol

Distribution of migrants flows leads to the conclusion that Ukraine is dominated by internal migration (intra-regional and inter-regional) – 522,6 thousand people, or 94%, which is caused mainly by economic factors. Internal migration processes in Ukraine are characterized by natural migration of the population, as well as migrations caused by man-made disasters, natural disasters, adverse ecological environment (Chernobyl accident, flooding, harmful industrial production), as well as those which are caused by the rearrangement of internal labor markets.

We highlight the fact that the result of the annexation of the Crimea and the military conflict in the Donbas became the emergence of internal and external forced migration and the formation of new to Ukraine type of migration – «internally displaced persons» (IDP). This event has led to a redistribution of population between regions and considerable migration losses in the Donbas.

According to the Office of the UN High Commissioner for Refugees (UNHCR), since March 2014, the number of malware increased significantly amounted to more than 1600000 individuals at the end of 2015 [6].

According to the results of the research, modern migrants face different obstacles in the form of legal and administrative requirements for entry and stay, and the lack of capacity to take advantage of their civil and social and economic rights in the complete way, preventing them from adapting to the host countries and integration into the societies of these countries.

We highlight the fact that adapting the model for the integration of immigrants requires the adoption of norms and values of the host society as a priority, and the company assumes the identity of those immigrants who want to keep it in the forms, which do not affect the rights of others. At the same time, as stated in the works of Max Weber, adaptation is crucial need-motivational sphere of regulation of the activities, meaningful behavior, actions that are «best suited to the interests of the participants ...» [7, p. 461, 462, 482].

It should be noted that the adaptation of migrants is referred to as complex features deeds, actions and behavior of migrants that have morphological and social and cultural origin, by which a person, group or entity provides the individual success in the competition with other ethnic groups, who live together on this or that territory of a certain state [8, p. 88].

At a new place of residence, an immigrant adapts to the natural and social environment, language environment, cultural environment, scientific and technological development, customs, rituals, and traditions. This process is influenced by a number of factors, including political, economic, and other conditions in the countries of emigration and immigration, especially of the moving process, the personal characteristics of the migrant, his age, education, qualification, degree of interest of the ethnic media, involvement in social networking community it takes [9, p.185].

Exploring immigrant adaptation process, one should pay attention to research done by J. Montgomery, who offers its split into three sub-adaptations – economic (which concerns mostly immigrant participation in the economy, especially at the labor market, society accepts and professional adaptation), social and cultural and subjective (which can be correlated with a one-way process of adaptation of an immigrant to a new environment) [10, p. 682-684].

Theoretically, considering the immigration society as a social whole, and the American community as a part of it, the social integration of immigrants is defined as the process of erosion and finally the disappearance of noticeable differences between migrants and the local population, when ethnicity is losing its significance, when it comes to the full participation of all members of society in its social, economic, political, and cultural life, the right to have the same legal status and equally enjoy the protection of the state [11, p. 167].

Undoubtedly, each immigrant goes through a certain adaptation process, which flows slowly, being regulated by the state. In addition, this process is not one-sided – the host society is also its active participant.

Integration is a two-way process which is based on mutual rights and corresponding obligations of third-country nationals legally residing in the country, foreigners, and the host community. On the one hand, this process involves the participation of immigrants in the economic, social and cultural life. On the other hand, it requires the immigrants' respect of the fundamental norms and values of the host country and their active participation without losing their own identity.

It should be noted that the migrants, who come to Ukraine for permanent residence, and temporary labor migrants are characterized by varying the depth of integration. Therefore, two stages of integration are to be distinguished, such as full integration, based on assimilation of migrants, and partial, including the processes of adaptation and assimilation of migrants' survival. Assimilation can be referred to as the process, when migrants, who have values, traditions, and culture different from the ones of a host country population, transform their identity, adapting to the surrounding society, up to the complete loss of the sense of identity [12, p.12].

Both in the case of integration, and in the case of assimilation, immigrants are adapting in different spheres of life – political, economic, social, and cultural. Moreover, they must accept the legal norms of behavior and political culture of the society. They are included in the country's economy by engaging in certain activities according to their potential and the needs of the territory – the recipient. Their social stratification depends on their economic integration space, including class, wealth, and prestige.

Social adaptation means the inclusion of immigrants in the social relations in the staff, neighborhood, companionship, and contacts.

It should be noted that the amplification of assimilation occurs in the period of a stable social life. Conversely, economic and social instability seriously impede the process of assimilation. Obstacles to the development of processes of assimilation are interethnic conflicts and anti-immigrant ideas that are spreading currently in the modern world.

Drawing attention to the partial integration of migrants, which is mostly characterized by temporary migrants, it is necessary to focus on concepts, such as adaptation and survival.

The process of integration begins with this adaptation that can be referred to as the process of human adaptation to the new conditions of life and work.

In its turn, the survival of migrants is the phenomenon consisting, on the one hand, of adaptation, and, on the other hand, suggesting adaptation

of living conditions to migrants' needs. Therefore, survival of migrants can be defined as an arrangement of migrants at the place of their new location. As a rule, the arrangement takes time, often longer than the one needs for adaptation, without which survival is as impossible as it is elusive without the arrangement.

It should be noted that Ukraine continues to work on the formation of the national policy on the integration of migrants. A significant step in this direction was the preparation and adoption of the «Strategy for development of public policy on the integration of migrants in Ukraine and the reintegration of Ukrainian migrants for 2011-2015» and the corresponding program. The documents were prepared by several ministries, in cooperation with the Council of Europe, which representatives provided comments and made some remarks to them.

It should be noted that the OSCE participating States have made a serious commitment to resolving migration and rights of migrants to integrate into the society. Major commitment on migrant integration include, in particular:

- adoption of measures to grant migrants the opportunity to participate in social life of the participating countries;
- assistance creating conditions for the development of harmonious relations between labor migrants and the rest of the society of the member states in which they are legally residing.

For this purpose, they will seek, among other things, to provide a better familiarization of migrant workers and their families with language and social life of the relevant Member State where they are staying legally, and give them the opportunity to be involved in the life of society in the host country,

- encouraging migrants to active integration;
- combat discrimination and violence in relation to migrant workers.

In addition, Decision № 5 OSCE Ministerial Council of 2 December, 2009 «On the issue of migration management» encourages States – participants to develop and implement effective self- public policy system in the field of migration. One of the components of such a system must be a reasonable strategy for the integration of migrants [13].

However, today's immigration policy in general and policy integration as its component, faces certain social and cultural constraints. The main of them are the following:

- resistance to the population of the host countries, who treat migrants in a negative way;
- insufficient involvement of migrants in everyday social and cultural life of the host countries; lack of awareness on the part of migrants existing in the host countries;

- specific historical experience and traditions of cross-cultural interactions with the host population;
- stereotypes and characteristics of social consciousness of the population in the host countries.

It should be noted that the social and political stability, continuous monitoring and control of relations between migrants and the population in the host countries, prevention of conflicts is a prerequisite of an effective immigration policy and its cornerstone- adaptation of migrants and their integration. We agree with the author of the research [14, p. 148] about challenges of coexistence with the indigenous and arrived population, claiming that the implementation of the relevant legislation today is still limited to the legalization of immigrants, refugees and asylum seekers. Without any hesitation, it corresponds their major need – to find shelter.

But the legalization of these people in Ukraine is only the first step and must be accompanied by structural measures of integration of migrants into Ukrainian society. Unfortunately, today there is no fruitful activity in this direction. The help in the integration of foreigners, who have found refuge in Ukraine, meets both their interests and the national interests. Ukraine would benefit from immigrants' transforming from the public burden into functional members of society.

Based on the realities of the present, the goal of managed immigration to Ukraine must be overcoming depopulation and decreasing rates. Particular attention should be paid to the integration of new immigrants into society. Focusing on internal migration, it should be noted that the forced displacement of citizens is due to a number of calls that are in increasing burden on local labor markets, the existence of problems of accommodation, employment, health care, access to education, cultural and social reintegration. Social and economic problems are accompanied by deteriorating psychological state population faces problems of internal displace. We highlight the potential marketing approach, or social marketing, to solving problems of social and economic integration and adaptation of migrants.

Social Marketing is a marketing activity undertaken by organizations or individuals acting in the public interest or in favor of any idea and that do not seek profit. It can generate goals, technology, marketing mechanisms that can be applied on various areas of public life.

Social marketing serving technology, which is used within social and technological approach, which aims to develop cooperation with the public as part of promoting factors of social integration of migrant workers in the host society. Key challenges are addressed in the process of implementation of social marketing tools. The main of them are the following:

- the research and analysis of public opinion about migrants;

- the formation of a strategy «to promote» social issues, attracting public attention to it;
- implementation of an integrated information support; the formation of effective channels of communication with target groups.

It is necessary to note that, within the framework of the formation of the communications system, the Ukrainian authorities should take active measures to better informing the public about the problems faced by migrants. The authorities should create opportunities for constructive cooperation between citizens and migrants. Attention should be paid to the problem of establishing an effective information and legal support of labor migration process.

Media activities play a significant role in this process, forming a positive image of the Migrant Workers and IDP in the community.

Media are the main source of information about the external and internal migrants and have objectively, correctly illuminate the main trends of modern migration processes. In addition, there is the need in the preparation, publication, and dissemination of information materials for migrants about their rights in the field of education, social welfare, and health care.

According to the results of the research, the media, which have influence on the formation of public opinion, ineffectively use the existing potential for building understanding between migrants, including malware, and residents of host communities. According to media monitoring data, there is a shortage of materials on the issues related to internal and external migration in general, and analysis, in particular.

The results of analysis of the published materials reveals that analytical materials on the problems of migrants are hardly used, that is not supported by the balance of opinion for comprehensive coverage of the current situation. There is a lack of systematic information campaigns at the national level, dealing with migrant issues and peculiarities of their integration into the host communities.

Therefore, there is the need for formation and implementation of the marketing strategy of integration and adaptation of migrants as part of a comprehensive policy of integration and adaptation of migrants that are based on social marketing tools. The main objectives of this marketing strategy should include the following:

- drawing public attention to the issues of integration of migrants, including malware in the host society, their needs and current problems;
- drawing public attention to the solution of problems of migrants;
- increasing the level of tolerance of host communities to them.

The strategy sets the direction for the implementation of social marketing tools for generating and conducting system of information

campaigns in the framework of a comprehensive policy of integration and adaptation of migrants, to develop information platforms that should provide for migrants, host communities and society as entire information. It is necessary to unite the efforts of government agencies, the media, civil society and international organizations in the fight against discrimination is the xenophobia in society, to focus international assistance on hold awareness-raising campaigns for journalists with a view to better understanding of the migrants' lives, relations between migrants and the host society, the daily cares and problems of migrant workers who are covered by the media.

There is the urgent necessity in the organization of events to promote various cultures of national minorities living in Ukraine. Therefore, formation and implementation of the strategy should be carried out in several ways, according to those complex measures originate (table 8.2).

Table 8.2. Components of Integration and Adaptation of Migrants Marketing Strategy

Components of the Marketing Strategy	Measures
Formation of a positive image of migrants, overcoming negative stereotypes, building understanding between the residents of host communities and migrants	awareness of the contribution of migrants, including malware in the host society; public awareness of host communities in the country and the general public about the migration process, including the situation of internal displacement; highlighting cultural traditions in the countries of origin; highlighting problems faced by migrants, focusing on the common problems of migrants and residents of host communities, promotion of the social dialogue in the communities with the participation of residents of host communities, migrants, and public associations
involving migrants into the social life of local communities	informing migrants about job opportunities, available employment support programs, opening their own business; encouraging participation in the public life of the community by informing about the possibilities of cooperation and partnership with civil society institutions, local authorities and residents of host communities, opportunities of volunteering, participation in community meetings, public meetings; involvement of migrants into social and cultural life of the community by informing about the social and cultural activities on arrangement of the territory, local festivals, and traditions
information interaction between migrants and public authorities	improvement mechanism for the dissemination of information on migrants, including malware, public authorities, a position statement on the interaction; inform migrants about their rights, opportunities of realization of these rights, power and resources for assistance; development of an information exchange mechanism between the Diaspora (IDP), the company, and the executive authorities

Implementation of this strategy aims the introduction of an integrated approach to policy integration and adaptation of migrants, ensuring the coherence of public authorities and local governments in this area. Activation of migration processes requires the development and implementation of a modern, integrated, and balanced policy of integration and adaptation of migrants as a part of migration management.

To provide the successful integration process, there is the necessity of both government agencies, and the society as a whole. This fact suggests the importance of cultivating tolerance, openness, and positive attitude towards migrant workers. Social marketing has significant potential in this process.

The implementation of social marketing technology is possible under the circumstances of organizing regular awareness campaign in the media, aimed at informing migrants of their rights in the field of education, social welfare and healthcare, as well as the creation of a tolerant public attitude towards migrant workers and members of their families, as well as the IDPs.

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8.3. Social media marketing (SMM)-tools using in publishing industry in Ukraine: descriptive analysis

Okhrimenko G.W.

In modern conditions of society development, the role and importance of the intellectual capital of the nation are increasing as well as the value of knowledge. The main source of accumulation of knowledge is book output. The book as a specific product requires special approaches to promote it in the market to fulfill the spiritual and information needs of consumers.

There are many ways of book output distribution, which occurred at different times under the influence of various factors. However, the changes in the world and the postsoviet information space, pushed the publishing industry representatives to talk about getting in a communication vacuum, which affects the positioning of publishing and promoting publishing products in the market. This, in turn, leads to constant loss

of communication with readers and buyers. This situation requires search of ways and methods of information disseminating, which should be effective, mass, and at the same time enjoy the high level of trust among people. One of the most effective and most popular of these tools allows you to combine great marketing opportunities and sales process of publishing products is social media. They meet the requirements, but have not found considerable popularity as a tool for doing business among publishers yet, and thus require careful study.

Nowadays, there are quite a few developments on specific aspects of the topic, but clear, systematic and analytical study of using social media as a way of book output promotion has not been made yet.

It is worth noting that marketing communication of publishing is a comprehensive impact on its internal and external environment, which aims to achieve the objectives of publishing, publishing policy optimization, creating a positive image of publishing, buyers' persuasion to purchase a product [10, p. 13].

The main means of marketing communications in book industry are: public relations (PR) publicity, advertising (radio advertising, television advertising, press advertising), sales promotion, direct marketing, sponsorship, exhibitions and fairs etc. In addition, various means of promoting books can be used together or separately. It depends on the publishing-house and market specific character.

Famous polish marketing specialist, J. Włodarczyk, in his book «Marketing in Publishing – fantasy or reality?» (2002) examines the concept of «public relations» as «the art of building trust and affection between the publishing house and its environment» [3, p.93]. Therefore, we can say that public relations includes creating a positive image of the company and establishing close relations between the publishing house and its contact audiences such as readers, authors, trade agents, media, service providers and others. As a result, publishing house image – is how customers see publishing house the and list of products and services, that are offered by it.

The most difficult marketing task that stands before publishing house is changing the acquired customers perceptions of it. That is why the careful image development of publishing house, which is made by consumers, is essential to the success of its work.

Besides that, an important role in promoting the book market plays the author. Some authors can write advertisements, come up with a name or speak on the radio better than publishers. Therefore, holding public meetings and interviews with the authors, a variety of press conferences, briefings, presentations promote books, demonstrate book output, present new projects, establish relations with the press.

Also, effective and cheap way for publishers in terms of popularizing books and sharing information with consumers is Internet. The scientist J. Fialko, considering different ways of promoting books on the Internet, divides them into two groups:

- 1) «natives of traditional media»;
- 2) «generated by network» [13, p. 175-179].

The first group includes various online-application, photo contests, reports, interviews with writers, book reviews, announcing events related to the release of new products. Among the most common forms of popularization of products belonging to the second group, are the following: online advertising, websites, forums, blogs, chat rooms, social networks etc. These methods of popularization by using the Internet help publishers to establish a direct relationship with consumers, obtain the necessary information concerning the request of readers. For example, the website can publish information about books, publishing house, as a whole, photos, texts and videotaping of interviews etc.

Marketing of Social Media or Social Media Marketing (SMM) is a new area of modern enterprises. SMM is the complex and multifaceted concept, that is, single definition does not currently exist. For example, an American researcher D. Nations defines «social media marketing» as the implementation process of marketing through social networks [9].

Broader definition of Social Media Marketing is represented in the work of Russian scientists E. Kuchin and V. Tinyakova. Researchers describe the SMM as a tool to attract visitors to corporate site through social networks, blogs and online-community [7].

According to Ukrainian scientist S. Ilyashenko, Social Media Marketing involves promotion of products and services, improving the image and announcing events on social media [5, p. 66].

In turn, the Ukrainian scientist M. Rudy considers SMM as a set of actions, aimed at increasing the popularity, promotion and advertising of goods and services through a variety of social resources [11, p. 175-179].

Summarizing the above discussed definitions, we can conclude that Social Media Marketing is one of the marketing tools that aims to promote the company's product or service (in this case the promotion of book output by publishers) by using social media.

Social Media Marketing uses a number of methods and tools to promote products. Analyzing in particular the works of such Ukrainian scientists as I. Bashynska [2] M. Rudy [11] A. Mryglod [8] and Russian practitioners of SMM-promotion D. Halilov [14], we can identify the following basic tools of promotion on social media:

- 1) Building groups and brand communities are the creation of companies' representatives (of publishers) on social media. This tool is mostly

used in social networks (Facebook, VKontakte). It allows you to combine real and potential consumers in one circle, quickly distribute information among them, invite customers to special events, and company events, to announce the yield of new products, to conduct target audience research? to identify their needs etc. For example, publishers post information in established communities about various literary news, events, contests, interviews with writers.

2) Reputation Management is a set of measures of forming reputation, audience loyalty support to the brand [8]. One of the main factors that make a company's reputation (of publishers) is customers feedback.

3) Working with the blogosphere includes tools such as corporate blogging and work with «opinion leaders». In particular, writers' blogs are important in the SMM-promoting book production that provide information about the works and, thus, help publishers boost sales.

4) Guerrilla marketing is to monitor and conduct discussions on forums about a brand or a product (in this case, the book production or publishers) [1, p. 175-179].

5) Internet advertising is one of the effective tools to promote products in the SM. In particular, the Ukrainian scientist S. Ilyashenko in his book «Modern trends in the use of Internet technologies in marketing» (2011) defines the types of Internet advertising: contextual (search) advertising, media (banner) advertising, video (digital) advertising, background advertising [5, p. 67-68].

In particular, these types of advertising like banner and booktrailer are often used to promote books. Book banner advertising is used more often, but booktrailer is more interesting. Booktrailer is a short video, which shows the content of the work [13, p. 264]. This tool of popularization of books is effective, especially for those users and visitors who do not like to read long reviews. It should also be noted that effective marketing communications on social media are social plugins. Social plugins are the so-called «likes» («Like» on Facebook, «I like» on VKontakte, «+1» On Google+, etc.) commenting blocks, navigational bar to the various sites with using accounts in social media.

In addition to the aforementioned SMM-promotion instruments, a Russian expert D. Khalilov highlights the next ones: e-commerce site creation; site optimization for social networking, online-organizing quizzes and contests on social media (particularly social networks); placement and promotion video and photo content; writing and distributing social releases, announcements of events; posting on the website unique, free content (such as e-books); surveys among the target audience, online-service visitors [14].

Making effective SMM is an important factor in successful product promotion or company in the market, so it is important to determine methods and technologies that will enable to analyze the operation of the company, utilization efficiency of communication activities, elected by its, in social media, etc.

Ukrainian scholar V. Sowa identifies the following key criteria for assessing the effectiveness of corporate pages of SMM:

- the amount of the audience – the number of supporters signed to update web-page users (e.g. number of «followers» on Twitter, the number of followers in the network VKontakte, etc.).
- the involvement of the audience is determined by the number of discussions, recommendations, comments («retweets» on Twitter, «likes» on Facebook and others).
- quality characteristics are measured according to audience filled profiles, some of them are opinion leaders [12].

It should be noted that Ukrainian publishers along with other modern foreign publishers use the possibility of social media not at the same level. The greatest interest in innovative promotion tool among Eastern European countries show the representatives of the publishing sphere of Poland and Russia. Ukrainian publishers use the lowest potential of SMM for the book promotions.

We know that the most popular SM among publishers of Poland is the social network Facebook and LinkedIn, microblog Twitter. Less popular are Pinterest, Google+, Nk miejsce spotkania and others. Also Polish publishers are constantly placing visuals and booktrailers on YouTube [4, p.33].

According to the study of information-analytical magazine «Univer-sytetska knyha» in Russia, among 12 analyzed SM, representatives of the publishing industry use Facebook (79,0%), Vkontakte (69,4%), Google+ (25,8 %), Odnoklassniki (21,0%), YouTube and blog Twitter (51,6%), Livejournal (48,4%), BlogPost (12,9%) [6].

SM has less demand among the Ukrainian publishers, which were noted above. In particular, the Ukrainian researcher C. Vodolazka in her work notes that 75% of leading Ukrainian publishing houses generally are not represented in any of the social media [4, p. 32-33].

In order to determine how Ukrainian publishers trust social media, we have analyzed the work of the ten most popular publishers of Ukraine per 2015 by criterion of priority reference in the search engine Google. The list includes the following publishers: publishers «Zeleny pes», «Folio» publishers «Osnovy», «Karavela», «Znannia», publishing house «Machaon-Ukraine», «A-BA-BA-HA-LA-MA-HA», «Kameniar», «The Old Lion Publishing House», publisher «Ranok».

Table 8.3. The characteristics of popular Ukrainian publishers SMM-tools implementation

SMM-tools	«Zeleny pes»	«Folio»	«Osnovy»	«Karavela»	«Znannia»	«A-BA-BA-HA-LA-MA-HA»	«Machaon-Ukraine»	«Kameniam»	«Ranok»	«The Old Lion Publishing House»
Communicative activity (0,1)	-	+	-	-	-	-	-	-	-	-
Site optimization for social networks (0,1)	-	-	+	-	-	+	-	+	+	+
Site optimization for e-commerce site (0,1)	-	+	+	-	+	+	+	+	+	+
Keeping a corporate blog (0,1)	-	+	-	-	-	-	-	-	-	+
Keeping microblogging (0,2): Twitter (0,1) Google+ (0,1)	- - -	+ - -	+ + -	- - -	- - -	- - -	- - -	+ + -	- - -	+ + -
The establishment of representative offices in social networks (0,3): VKontakte (0,1) Facebook (0,1) LinkedIn (0,1)	+ + -	- + -	+ + -	- - -	+ + -	+ + -	- + -	+ + -	+ + -	+ + -
Use of video service YouTube (0,	-	+	+	-	+	+	+	-	+	+

The analysis was carried out on such certain characteristics – basic tools SMM: 1) communicative activity (communication with the audience at the Forum) 2) site optimization for social networks; 3) site optimization for e-commerce site; 4) keeping a corporate blog; 5) keeping microblogging (Twitter, Google+); 6) the establishment of representative offices in social networks (VKontakte, Facebook, LinkedIn); 7) use of video service YouTube. Each indicator was given its share which is based on the specific implementation of publishing tools SMM (table 8.3). Maximum use of mentioned SMM-instruments by publisher is 100%.

According to the data (table 8.4) the standard of using tools by SMM Ukrainian publishers can be determined.

The average grade is 0.46. This suggests that considered publishers use only 46% capacity of SMM-tools.

Apparently, among the selected national publishers the top rating has «The Old Lion Publishing House» (80% of potential tools SMM) the lowest rating has publishing house «Karavela» (0% potential SMM tools), which do not use these SMM tools to promote books (fig. 8.1).

Table 8.4. The level of implementation SMM-tools by Ukrainian publishers

Title of publisher	Grade
«The Old Lion Publishing House»	0,8
«Osnovy»	0,7
«Folio»	0,6
«Kameniar»	0,6
«A-BA-BA-HA-LA-MA-HA»	0,5
«Ranok»	0,5
«Znannia»	0,4
«Machaon-Ukraine»	0,3
«Zeleny pes»	0,2
«Karavela»	0

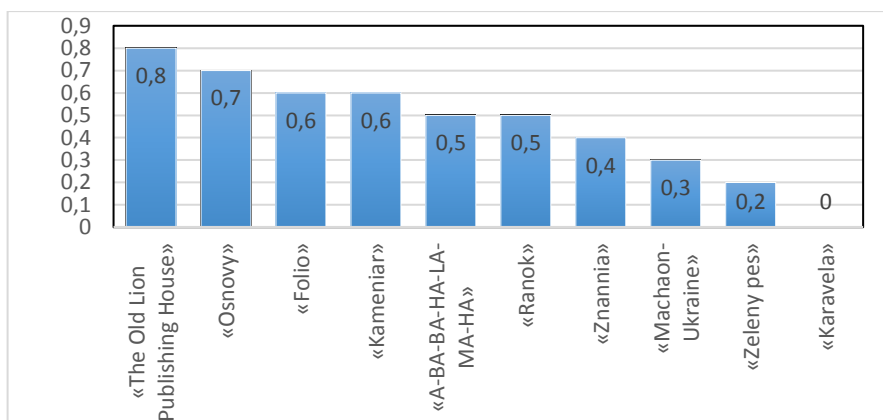


Figure 8.1. The rating evaluation of implementation SMM-tools by Ukrainian publishers

In addition, analyzing the ten most popular publishing house in the list, it should be noted that among the cast features (SMM-tools) the highest level of implementation has site optimization for online e-commerce, creation of representative offices (of publishing house) of using YouTube video service on social networks, a shade less is keeping microblogging. Specifically, nine out of ten publishers are represented on social network Facebook, seven out of ten on Vkontakte, seven out of ten publishers have a presentation videos on YouTube, only four publishers use Twitter and microblogging and three use Google+.

However, indicators such as communication with the audience at the forum and maintenance of corporate data blog publishers used the least.

Communication with the audience at the Forum uses only one edition of ten (publishing house «Folio»), corporate blog is used by two publishers («The Old Lion Publishing House» and «Folio»).

Thus, compared to US publishers, Poland and Russia, social media for Ukrainian publishers is something new and not widespread. Publishing houses of Ukraine, implementing its activities in SMM, prefer networks like Facebook and VKontakte, video service YouTube, much less microblog Twitter and Google+. The situation is quite unattractive, because social media is a powerful communication channel that has significant potential and reaches a wide audience both in territorial and age groups.

It is necessary to define such common problems of using social media for publishing Ukrainian market:

Incapacity of Ukrainian publishing houses to take full advantage of tools SMM. The problem is that significant part of the Ukrainian publishers does not use social media marketing tools or if they use, only some of them, which is inefficient to promote book production.

Irrational understanding of Ukrainian publishing houses segmentation of target audiences and their needs. Important in this regard is a clear ability to identify information needs and requests of users and target audience, at whom the publishing product is directed. In order to avoid this problem, the publisher should conduct various monitoring studies. Publishers need to know which online service the audience prefers, users age of the network, online-service features and then according to this, articulate key messages to them.

Poor establishment and operation of publishers' Internet services. Unfortunately, the Internet sites of many Ukrainian publishers are not functioning in full mode, they serve outdated information, not updates. In addition, a small number of so-called «likes» and comments under common records indicates a lack of interaction between publisher and users. Accordingly, there is another problem, that is slow feedback from publishers to readers. Publishers respond non-operationally to users' information requests. There are problems with the book orders and their purchase.

Uniformity of content. The problem is that many Ukrainian publishers on their pages on social networks submit monotonous information. For publishing, a great way of attracting consumers is placing on website free unique content, such as e-books or presentation of a key chapter. Considering that, the user is involved in reading and eventually buys the book.

So, after a detailed study of issues related to social media marketing in the field of book publishing is advisable to select the following key provisions:

1) Publishing occupies an important place in the system of information products and services. Books are one of the most common types of publishing products. However, the book publishing business is a complex system that aims to meet the information needs of both the individual and society, as a whole, in the book output. The components of the publishing business are publishing, manufacturing and distribution of publishing (book) products.

2) For the effective functioning of the market, publishing structure conducts communication policy, thus creating a positive publishing image and persuading buyer to purchase products. The main marketing tools of promoting publishing products in the market are: PR, sponsorship, publicity, exhibitions, fairs and internet marketing.

3) It is necessary to distinguish the following basic tools of promotion of books in social media: building groups (communities) interest, reputation management, working with the blogosphere (corporate blogging), using Internet advertising, covert or guerilla marketing, social plugins and others.

4) Ukrainian publishers along with other modern foreign publishers use the possibility of social media not at the same level. In particular, Ukrainian publishers, which implement their activities in social media marketing, prefer networks like Facebook and VKontakte, video service YouTube, much less microblog Twitter and Google+. The situation is quite unattractive because social media is a powerful communication channel that has significant potential and reach a wide audience both in territorial and age groups.

5) Based on international experience implementing and analyzing features of social media marketing in the activities of foreign and Ukrainian publishers can define such common problems using social media for Ukrainian publishing market: the inability of Ukrainian publishing houses to use all the advantages of tools SMM; inefficient use of Ukrainian publishing houses segmentation of target audiences and their needs; uniformity of content; poor establishment and operation of Internet publishing services; low feedback from publishers to readers.

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8.4. Emotional social innovation: shock advertising in social marketing for health campaigns

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Social marketing is widely used to influence health behaviors. Moreover, societies worldwide face an upsurge array of health challenges, emphasizing the importance of social change efforts [31]. Despite this growth, social marketing remains a mystery for many public health professionals. To advance the current knowledge, we provide a theoretical framework of understanding social marketing for health by discussing shock appeals embedded in the ad's message. Then we point out the main negative emotional appeals encountered in social marketing for public health campaigns in the shape of fear, guilt and shame. Since these appeals have lost their influence on the consumer behavior, we suggest other perspective, a postmodernist one, namely a positive emotional appeal in the form of humor. Lastly, we present a more practical and complex approach, which we strongly believe is more suitable to be employed in social marketing for health campaigns, that is, mixing appeals. The main objective of this chapter is to assess the most accurate social innovation perspective for behavioral change in social marketing for health using emotional appeals in shock advertising.

1. Defining Social Marketing for Health.

Since Zaltman and Kotler's [80] former term introduction, social marketing has become a controversial field, yet growing. Thus, conferences, dedicated journals and textbooks have emerged [19], along with university program courses for both Bachelor and Master degrees [42]. Moreover, several associations focusing on social change and social marketing were launched such as The National Social Marketing Centre, The Australian Association of Social Marketing. In addition, there are famous private organizations, as for example, UNICEF and the US Center for Disease Control and Prevention which apply social marketing techniques in their strategies. Consequently, in the literature, there is also a proliferation of Social Marketing research on the definition, scope, what is and is not Social Marketing, practical and theoretical frameworks as well as how to measure the effectiveness of Social Marketing campaigns [38, 47, 78].

Although a variety of definitions have been proposed by social marketers, and the subject is still under great debate [62], «social marketing is still a mystery to most, misunderstood by many, and increasingly confused with other terms such as behavioral economics and social media» [46, p. 2]. According to Andreasen [5] «social marketing is the application

of commercial marketing concepts and tools to influence the voluntary behavior of target audiences to improve their lives or the society of which they are part». Although, Donovan [24] describes social marketing as «the application of commercial marketing principles and tools in social change interventions where the primary goal is the public good». Lefebvre [48] believes Social Marketing «is a planned approach to social innovation». In other words, «social marketing is a process that involves carefully selecting which behaviors and segments to target, identifying the barriers and benefits to these behaviors, developing and pilot testing strategies to address these barriers and benefits, and, finally, broad scale implementation of successful programs» [51]. Indeed, Social Marketing focuses on «using the marketing principles and techniques to promote the adoption of behaviors that improve the health or well-being of the target audience or of society as a whole» [74]. After all, Social Marketing is about program-planning and determines the following outcomes [46]: influences behaviors, utilizes systematic planning process that applies marketing principles and techniques, focuses on priority target audience segments, and delivers a positive benefit for individuals and society. Often, social marketing is confused with other related disciplines such as Nonprofit marketing, Public sector marketing and Education; emerging behavior change theories and frameworks as the behavioral economics, nudge, social change, community-based social marketing, community-based prevention marketing and promotional tactics as, for example, social media, advertising and cause promotion [46]. However, the defining features of social marketing come from marketing's conceptual framework and include exchange theory, audience segmentation, competition, the marketing mix, consumer orientation and monitoring [31]. As such, social marketing's success is built upon the consumer's perception of self-interest, behavioral barriers to behavior and competitive forces which create attractive choices [46].

Worldwide societies face an upsurge of health challenges, emphasizing the importance of social change efforts and prevention. It is acknowledged that social marketing is widely used to address public health issues through public awareness campaigns (PACs). The vast majority of social marketing research has been meaningfully applied in health services, namely, in promoting healthy behaviors [22], starting from smoking prevention, disease control, physical activity up to alcohol prevention. In public health, practitioners address the disadvantaged populations and the populations who have greater chances to improve their behaviors [66]. Practitioners also faced difficulties in measuring the effectiveness of social marketing campaigns due to various external factors, as for instance, governmental regulation, media coverage and pricing [4].

As such, tailored messages are required as it is important to reach all audiences and diminish the inequality outcomes [65]. French and Blair-Stevens [28] state that a measure for social marketing campaign effectiveness should include the understanding of objectives on different time spans. On one hand, for the long-term impact of Social Marketing, should be taken into consideration the repeated behavior change of the targeted population in comparison to the initial behavior [4] and, on the other hand, short-term Social Marketing impact should focus on the performance indicators of predicting the behavioral change [60]. Although several Social Marketing models have been introduced [47, 69], experts should be aware of the side effects of the behavioral change campaigns, especially in promoting healthy lifestyles [61]. The relationship between social marketing and health promotion has been accepted by a number of specialists [32], still, one key factor which is still under debate is that behavior change requires more elements than information and education to assess the desired outcomes [37] such as emotional arousal using an element of surprise as in shockvertising [29]. To bring together health promotion and social marketing for health means integrating behavioral, environmental and community interventions and use the outcome on a whole background [32]. Thus, public health programs should systematically integrate the strengths of both health promotion and social marketing techniques. Although social marketing for health and health promotion have developed separately, they are closely linked, in some countries they are considered even similar [35].

A public awareness campaign (PAC) is a concept used to describe «a comprehensive effort that includes multiple components such as messaging, grassroots outreach, media relations, government affair and budget so as to help reaching a specific goal». [11] Nonetheless, the scope of PACs is to induce a desired behavioral change focusing on informing, sensitizing or drawing the attention to a specific outcome [20]. There are two types of PACs, classified after the expected goals, namely, the individual behavior change level and the public will change level [20].

Table 8.4 illustrates the characteristics of public awareness campaigns. As with any other marketing tool, PACs cannot solve every type of health or social problem. However, as mentioned earlier, social marketing may be successfully employed when sustaining healthful or socially beneficial behavior change, increasing program use or building customer satisfaction [75] through an element of surprise, which takes the form of shock advertising.

Nowadays, advertising may be encountered in every field, consumers becoming indifferent to it. As consequence, specialists are forced to cut through the clutter and uncover new methods to draw consumer attention.

Table 8.4. Individual behavior change campaign in comparison to public will behavior campaign in public health

Campaign Type/Goal	Individual Behavior	Public Will Behavior
Objectives	Influences beliefs and knowledge about a behavior and its consequences Affects attitudes in support of behavior and persuade Affects perceived social norms about the acceptability of a behavior among one's peers Affects intentions to perform the behavior Produces behavior change (if accompanied by supportive program components)	Increases visibility of an issue and its importance Affects perceptions of social issues and who is seen as responsible Increases knowledge about solutions based on who is seen as responsible Affects criteria used to judge policies and policymakers Helps determining what is possible for service introduction and public funding Engages and mobilizes constituencies to action
Target Audience	Segments of the population whose behavior needs to change	Segments of the general public to be mobilized and policymakers
Strategies	Social Marketing	Media advocacy, community organizing, and mobilization
Media Vehicles	Public service/affairs programming: print, television, radio, electronic advertising	News media: print, television, radio, electronic advertising
Examples	Antismoking, condom use, drunk driving, seat belt use, parenting	Support for quality child care, after school programming, health care policy, LGBT acceptance

A method of drawing consumer attention and keep their interest is embedding shock appeals in campaign messages. This type of advertising has many names in the scientific literature but it has the same meaning for both practitioners and academics who define the advertising which deliberately violates norms with the intention to raise awareness about a public issue, controversial advertising [25; 39], offensive advertising [3; 55; 72], irritating advertising [1; 30], provocative advertising [50; 56; 70], taboo advertising [54] and shock advertising [29]. We believe the terms «taboo» and «shock» should be used on complementary grounds as they basically have similar and interchangeable connotations. «Taboo» describes a variety of meanings such as prohibition, illegality, indecency, shock and unacceptability [29]. Moreover, based on the in-depth investigations of taboo meanings in anthropology, sociology and psycho-analysis, Ouidade [54] elaborated a taboo taxonomy (table 8.5). Further, Dahl et al [21] developed a classification of shock appeals as described in advertising:

a) disgusting images that depict pictures containing blood, body parts or secretions, orifices, especially urinary or fecal, gases, odors, disease, parasites, bodily harm, death and decay;

b) sexual references to masturbation, implied sexual acts, sexually suggestive nudity and partial nudity;

c) profanity/obscenity that makes use of swear words, obscene gestures or racial epithets;

d) vulgarity applies to images that are distasteful, crude and lack manners;

e) impropriety or indecency refers to the violence of social conventions, social decency and etiquette;

f) moral offensiveness depicts images which harm innocent people or animals, gratuitous violence or sex, alluding to people or objects that provoke violence (e.g. hitler), violating standards for fair behavior, putting children in provocative situations (e.g. sexual, violent), victim exploitation;

g) religious taboos which experts make use of religious or spiritual symbols in an inappropriate manner.

Hagenbuch [34] concluded that the desired outcomes in shock advertising are far from being assessed, as rather than triggering a positive expected outcome, some shock appeals produce negative outcomes, such as embarrassment [10].

Table 8.5. The Taboo taxonomy elaborated by Ouidade

	Accepted behavior	Tolerated behavior	Prohibited behavior
Mentionable	Ordinary topic or behavior	Acceptable topic or behavior	Behavioral taboo
	Divorce Use of contraceptives Use of condoms	Homosexuality	Racism Use of drugs Euthanasia
Unmentionable	Conversational taboo	Conversational and weakly behavior taboo	Conversational and behavioral taboo
	Death-related services Masturbation	Sadomasochism Zoophilia Suicide	Incest Pedophilia

Source: Ouidade, S.Z. Taboos in advertising: conceptualization, taxonomy and scale development, www.lalondeconference.org [54]

2. Social Marketing for health and emotional appeals.

Many case studies have been conducted on the influence of emotions in framing messages in the social marketing field [6; 18; 36; 59]. Social marketers often employ emotional appeals in their campaigns to encourage compliant behavior. Although a great body of scientific literature exists on the topic, the link between emotional appeals, attitude formation and behavioral compliance is debatable, with few connections made between

attitudes and intent as well as between intent and behavior per se [18]. As such, «an emotion is a mental state of readiness that arises from cognitive appraisals of events and thoughts, has a phenomenological tone; is accompanied by psychological processes; is often expressed physically; and may result in specific actions to affirm or cope with the emotion, depending on the nature and meaning for the person having it» [7, p. 184]. In other words, emotions are elicited in circumstances that have special meaning for a person's well-being, and once it has been elicited, the person is prepared to cope with the emotion in an adaptive manner [45]. From a marketing perspective, how consumers cope with emotions is an essential issue as the process of coping plays an important role in influencing consumer behaviors such as, in case of social marketing for health campaigns, consumers may reject, accept or comply with the advertised message [79].

a. Negative appeals in Social Marketing for Health.

In social marketing campaigns, negative emotional appeals are more regularly applied due to the fact that consumers need to comply with social norms [8]. It is presumed that negative emotions are known to cause physical discomfort and, thus, it is a safe starting point in triggering appeals [13]. In other words, negative appeals are employed to create an emotional imbalance which may be rectified by adopting a desired advertised behavior, namely, the compliant behavior. Past research has focused on the fear and threat appeals in social advertising campaigns, as well as on the impact of coping answers on the attitude formation and behavioral changes [23; 68; 77] but with different success outcomes [15; 58]. Fear is a negative emotional response to threats in the environment [43]. Moreover, according to the Merriam-Webster Dictionary [52], fear is «an unpleasant emotional state characterized by anticipation of pain or great distress and accompanied by heightened automatic activity especially involving the nervous system...the state or habit of feeling agitation or dismay...something that is the object of apprehension or alarm». Consequently, specialists have made a clear distinction between threat and fear [43]. While threat refers to the negative consequences of an action which the targeted population wants to avoid, fear is the emotional trigger that can change attitudes and behaviors [71]. Still, depending on the audience, topic and the context, the relationship between threat and fear may prove to become idiosyncratic, as the same threat stimulus can reflect different levels of fear [14]. Advertisers invoke fear by identifying the negative outcomes of engaging in unsafe behavior. However, fear appeals are effective in increasing ad interest, engagement, recall and persuasiveness [44]. In addition, fear appeals are most effective when they provide high levels of a meaningful threat or important problem and

high levels of efficacy that an individual's change of behavior will reduce the threat but, too much fear can trigger an avoidance or ignorance of an ad message by employing defensive mechanisms. Therefore, extreme fear appeals will lead to unsuccessful attitude changes [41; 58].

Due to ethical concerns, emotional alternative appeals are also recommended to be used instead of fear appeals [76]. Huhmann and Brotherton [40] stated that guilt appeals are as persuasive as fear appeals in social advertising. Guilt or regret is produced «when individuals evaluate their behavior as failure but focus on the specific features or actions of the self that led to the failure» [49]. Guilt lacks the negative intensity, so it is viewed more as a useful emotion in motivating specific and corrective actions. In advertising, many studies have investigated guilt as well as its self-persuasive effects [15; 40]. Bennett [9] revealed that guilt appeals are more likely to have positive outcomes to advertisements, but communications which are intended to trigger guilt may produce shameful responses. Moreover, the relationship between guilt and fear may be explored at the expense of other negative emotions such as shame [9]. Braithwaite [12] argued that shame occurs as a result of feeling guilt. Shame is a complex emotion, which relates to self-respect and to self-esteem. While a significant amount of research exists in the literature related to fear and guilt, theory of shame in advertising is underdeveloped [13].

The negative emotional appeals draw their power from their ability to engender strong negative emotions. Hence, appeals based on positive emotions such as love, excitement, hope and humor may have equally or even better effective outcomes [53].

b. Positive appeals in Social Marketing for Health.

The postmodernism advertising style characterized by humor, irony, relativism and hedonism proved to be more successful than using fear appeals in social advertising for health [33]. Humor in advertising help marketers overcome the tendency of consumers to avoid exposure to advertising [27]. Since shame is acknowledged to induce withdrawal and avoidance, especially in health care services, it becomes challenging for experts to uncover new methods such as humor, to provide uplifting feelings and increase self-efficacy. Although humor draws people's attention on the ad, there is evidence that they may pay more attention to the humorous text or picture rather than to the information provided [67]. Humor is an essential component in social communication [17]. The key characteristic of humor is that it first presents an incongruity of events, which are juxtaposed, even if they normally do not match [2; 63]. Spotts et al [64] identified five humors appeals which are reflected in comic wit, sentimental humor, satire, sentimental wit and full comedy. Further, Catanescu and Tom [16] have defined five types of humor in advertising: comparison

humor, personification humor, the exaggeration humor, the pun humor, the sarcasm humor, the silliness humor and the surprise humor.

Weinberger and Gulas [73] stated that humor is not a magical tool which assures more successful advertising, however, success is assured. Still, while the use of humor in advertising is high, the efficiency of humor as an emotional appeal, in some fields, remains uncertain. This is the case of social marketing for health campaigns. Gheorghe et al [29] revealed that using humor appeals in social shock appeals was not fortunate. Moreover, Fatt and Poon [26] argue that the effectiveness of humorous advertising has produced mixed results and more than 64% of advertising specialists concluded that humor has no effect on the consumer behavior. Having fun with social marketing campaigns is often as controversial as using fear-based appeals [46].

Fear has been frequently employed in Social Marketing for public health campaigns but past research indicated that high levels of fear appeals make consumers use defensive mechanisms and reduce the persuasive effect of the message. Mukherjee and Dube [53] pinpointed that humor can reduce the defensive responses and increase the persuasive effect of fear in advertising. In other words, using fear in social marketing public health campaigns increase the motivation to process the ad, while humor increases the ability to process the message in the ad. Thus, humor can work as a buffer against the negative effects of high fear appeals and improve the effectiveness of social marketing for health advertising [53].

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8.5. Social marketing in promotion of energy-efficient building

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Energy-efficient buildings are generally more expensive than conventional, so investors have some economic and psychological barriers in making their implementation decisions. Despite the increase in the number of this type of buildings there is need of active work with the potential investors showing benefits from the adoption of integrated energy-saving solutions in the design of a new building and also in modernized buildings. Unfortunately the decisions taken by investors have behavioural nature and are not effective and do not meet the expectations of the investors. You have to know that the energy-efficient building are designed on such a complex structures, not only at the design stage as well as further operation, that all sorts of explanatory work is necessary. Changing the energy standards of buildings is a result of the introduction of new building law, the use of various forms of financial support and also educational activity.

The prospect of a sharp worsening the construction standards for energy efficiency of buildings in future, requires activation of all sorts of actions and activities aimed at the preparation of all parts of the investment process for a new challenge.

Various types of advertising, clarifying and educational activities, increase the level of public knowledge of the population about the positive consequences of the construction and modernization of buildings, which should lead to significant improvements in energy efficiency construction. Today, in Poland there is gradually increasing interest in certification, confirming that the building is energy efficient and uses a minimal amount of energy or the media as opposed to traditional buildings. Promotion of energy-efficient construction consists of dissemination and promotion energy-saving ideas, which ultimately have a positive impact on the environment locally and globally, and show the advantages of not only energy, but also economic, environmental, including human health, and social areas.

1. *The impact of construction on air pollution in Poland.*

Production of energy and above all the heat in the construction sector in Poland is responsible for air pollution very dangerous dusts and chemical compounds i.e., PM10, PM2.5, B(a)P.

The biggest impact on the level of air pollution with PM10 is generally low emissions from sources associated with the combustion of solid fuels for heating and household. Emissions from this source category have the largest share in the national emission 49%. Similarly, the situation with the issuance of PM2.5 into the atmosphere in Poland is shaped. It is affected by fuel combustion processes outside the industry. Emissions from these processes is approx. 50% of the total emission of dust from the area of the country. This category has the largest share of emissions from the municipal sector, including primarily related to the heating of buildings.

The main source of emissions of B(a)P to the atmosphere in Poland is individual heating of buildings. Emissions from these processes is approx. 78% of the total national emissions of B(a)P.

To reduce low emission communal household appliances (category: fuel combustion processes outside the industry) may result in a range of educational activities, administrative, organizational, tax, etc., including:

- 1) raise the level of ecological knowledge of the population to promote ecological behavior;
- 2) promotion the replacement of furnaces and solid fuel boilers other heat sources less burdensome for the environment;
- 3) promotion the modernization of individual heating systems;
- 4) supporting the thermal insulation of buildings, among others, through financial support;
- 5) promoting energy-efficient construction and passive;
- 6) promoting the construction and use of renewable energy sources;
- 7) introduction of the ban on the use of solid fuels for heating buildings and water heating in selected areas with the simultaneous

implementation of the system of financial support the reconstruction of the heating system;

8) introduction to the rules of public order ban waste incineration plant leaves grass clippings and weeds;

9) enforcement of the ban on waste incineration in furnaces domestic boilers, stoves, fire pits;

10) conduction of appropriate tax policies to encourage the use of less harmful fuels [1].

The buildings in EU use approx. 42% of all energy. In turn, approx. 85% of the energy consumed by buildings is the energy associated with heating and hot water preparation. If we add to this electricity associated with cooling the air in buildings, this value reaches approximately 90% [2]. It is assumed that by 2050 energy consumption in residential buildings will decrease by 29% and the public buildings by 18%, compared with 2010 [3].

In Poland, the much higher proportion of the energy consumed by buildings and services is accounted for 49,1%, 24,4% in industry, 26,5% in transport [4]. The next planned change of technical regulations on energy efficiency of buildings, which will take effect on 1st January 2017 exacerbates the demand for energy efficiency – especially in the case of new single-family and public buildings. It must be emphasized that every year in Poland, there is introduced about 80-90 thousand buildings [5] that require a serious approach to the problem.

According to the latest changes requirements for determining the energy certificate of the building, except for the indicator of EP it is necessary to calculate the emissions CO₂ gas and the percentage of energy consumed from renewable sources. However, for the last two parameters of the building regulations do not specify limit values.

In the Directive EPBD and later in the construction regulations the definition of a building with almost zero energy consumption appears. This type of building should become the norm in beginning of 2021, and in the case of buildings occupied or owned by the state or local government should become norm in 2019. According to the Directive these are buildings with a very low or almost zero primary energy consumption. That energy must be generated to a large extent, from renewable energy sources. Based on this definition, a building with almost zero energy consumption-technically means 0 kWh/(m²a) rate of consumption of non-renewable primary energy EP [6].

In 2013, in Poland there was introduced the first program of subsidizing the construction of low energy houses in standard NF 40 and passive buildings in the standard NF 15. The symbols indicate the maximum level of final energy consumption for heating of 40 kWh/(m²a) and

15 kWh/(m²a). Investors can get a grant in the amount of 30 000 and 50 000 PLN for single-family houses or 11 000 and 16 000 PLN for the apartments. To get a grant there is a need to fulfil a number of requirements, including insulation of external barriers of the building [7].

There has also been developed the document in the form of a national plan to increase the number of buildings with low energy consumption [8], indicating big business existing conditions and opportunities to achieve economically viable energy efficiency of buildings. In addition, the plan represents the actions of the government in order to improve the design, construction and reconstruction of buildings to improve energy efficiency and increase the use of energy from renewable energy sources in new and existing buildings [8].

One of the characteristic trend of designing modern buildings called green buildings is the consideration of various environmental aspects. The energy efficient buildings which are close to green buildings with minimal consumption of energy generate a very low emission of fuel combustion products. According to a recent report [9] that represents the results of the analysis of the status and forecast of development of green building in 69 countries, over the next 2-3 years there will be a double increase in the number of buildings which are characterized by a minimal negative impact on the environment. Experts predict that in 2018 in more than 60% of building projects the green building features will be applied. It mainly concerns the new and modernized office and public buildings for which the investor tries to obtain a certain environmental certificate.

In the Polish construction there are mainly two systems of multi-criteria environmental certification used: the British Breeam and American Leed. As follows from the report [10], in Poland there were 249 certified office buildings in BREEAM or LEED. That's 60% more than in 2014. Most objects with an environmental certificate is located in Warsaw (126), Krakow (26) and Poznan (17).

2. The results of a survey of public opinion in the field of energy efficient construction.

The results of surveys conducted in recent years on energy issues of buildings are very interesting. Most of Poles have rather low level of knowledge as far as energy is concerned. It mainly concerns the use of energy for the building in period of exploitation of the building and the influence of these processes on the state of the natural environment. Many people cannot properly assess how much of the energy is used for heating. From the public opinion survey «Poles about energy savings» in 2007, [11], we know that 71% of respondents indicated that most energy is consummated by industry and by buildings only 18%.

To the question, what percentage in consumption energy is the energy for heating the apartment/house, most of the respondents, 35% gave the answer that it's up to 20% of all energy consumed by the building. 23% of respondents did not answer this question. Approx. only 16% of respondents were close to the truth [12].

To the question what most affects the use of energy in the apartment/house: 32% of respondents indicated heating, 46% lighting and electrical equipment, 8% heating hot water, 7% fuel for cars and 7% were unable to give an answer [11].

Despite the growing awareness in the sphere of energy saving building the owner of the building rarely takes action associated with a reduction in energy demand for heating and ventilation.

Every tenth Pole has an energy-saving equipment, and the most popular are relatively new, energy-saving televisions (68%), washing machines (65%), laptops (49%), kettles (49%) and the least popular are energy-saving components and heating systems (7%) [13]. From a report on the Polish energy sector the majority of respondents (87%) says that they try to conserve energy, particularly electricity. As the main reason of its solutions they indicate the financial conditions [14].

The results of the survey in 2013 conducted in the framework of «Energy in my house», it follows that a relatively not many Poles approx. 19% of respondents indicates heating as the most energy-consuming operational process. 51% of respondents as the most energy-intensive indicated electrical appliances, 14% to heat water and 13% lighting. For comparison with earlier surveys it shows that the consciousness in this area has not changed significantly [15].

Public opinion survey «Energy Efficiency in my house» conducted in 2015 shows little progress, but still consciousness in the field of energy efficiency in buildings remains unsatisfactory. More than half of Poles do not know that the most energy in their homes is spent on heating (only 24% of respondents indicated heating), 46% of respondents said that the most energy in their buildings is consumed by appliances [16]. Another survey which was conducted in the same year showed that 86% of Poles indicate that energy saving is only connected with the reduction of electricity consumption.

3. The use of social marketing to promote energy efficient construction.

Many popular social-oriented strategy, although widely spread, has not received not only a single definition. Among them the increasingly popular tool of influence on public consciousness is the form of social marketing.

Social marketing involves the use of methods of commercial marketing for the analysis, planning, implementation and evaluation of programmes that affect intentional behaviour of selected groups of

consumers, in order to enhance human wellbeing and the state of society. Social marketing uses planning process and applies the principles and methods of traditional marketing. It focuses on change of behaviour, and is designed to benefit the society. The concept of social marketing includes public service announcements, and other besides advertising methods of influence. Mission of social advertising is to convince or discourage the audience to a particular idea or behaviour. Other activities are aimed at facilitating the implementation of new approaches and behaviour of the message recipient. Public campaign is the orderly in time operation using the tools of marketing, in particular advertising and Public relations affecting the changing attitudes and way of thinking. This, in turn, leads to the solution of social problems that block the achievement of the common good, defined as marketing goals.

One of the interesting actions promoting energy saving in buildings, carried out in Germany in Berlin was the project «Dress warm your house». Advertisement is showed in the figure 8.2.



Figure 8.2. Example of social advertising in Berlin
[Source: kampaniespoleczne.pl/kampanie,307,ubierz_cieplo_swoj_dom]

Contrary to appearances, advertising pillars and buildings dressed in distinctive red hats is not an exhibition of large-size needlework, and part of an unconventional outdoor campaign, which has established itself on the streets of German cities. In this way, it urged the Germans to reduce carbon dioxide coal.

The aim of the campaign was to raise awareness of recipients, how important is the relationship between CO₂ emissions and heating in the house, and thus how to make home more energy efficient. This interesting – both visually and substantively – advertising campaign is a great idea for the unusual use of public space for advertising purposes. The initiative «dress» of the city met with a warm welcome from the locals.

Festive start of the campaign took place on one of the main streets in Berlin – Unter den Linden. Buildings «were dressed» in a red woolen cap, on which there was the inscription: «Verheizen Sie Ihr Geld nicht: Ziehen Sie Ihr Haus warm an» («Don't waste money for heating: Dress warm your house»). The patronage of the campaign was covered by the German Ministry of Transport, Building and Urban Development (BMVBS).

Table 8.6. The basics of the marketing campaign «the House that saves me» [19]

Marketing challenge	The predominant target audience	Implementation
<p>Stimulating the construction of buildings in passive technology, energy saving and use of renewable energy, by creating the conscious action of the profitability of this investment.</p> <p>This solution is more expensive than standard, but it should quickly pay off due to lower cost of operation.</p> <p>The client was waiting for a bright, interesting proposals, which should stand out against other promotional materials</p>	<p>People planning the construction / reconstruction of houses or apartments over the next 3 years, at the age of 25-54 years, with a monthly household income of more than 5 000 PLN net.</p> <p>Analysis of studies shows a significant impact of women in taking decisions concerning the construction or modernization of the house / apartment</p>	<p>A key element of the campaign and the connecting element of the event was website www.oszczedzam-energie.pl that contain database articles, tutorials, and graphic material. In order to read the content of the campaign in the Internet and the press the app AR for mobile devices was created. Users could create a passive or energy efficient house and compare annual savings compared to a traditional house.</p> <p>The campaign was supported by PR activities (including unintentional use of training for journalists and bloggers).</p> <p>The accompanying element was coffee served from a special food truck</p>

One of the promotion tested in 2014 in Poland related to energy saving, was a campaign called «the House that saves me». [18]. Its purpose was to familiarize and convict all investors also in future in the construction of passive and energy saving buildings using renewable energy sources

(tab. 8.6). It was directed and received a great response especially among the younger generation.

This action was based on creative ideas of selecting different construction solutions and calculating the resultant effects in the operation of a passive or energy-efficient buildings, which is supposed to use renewable energy sources. Choosing different solutions there is possibility of achieving such an option that it allows to cut spending and gives the opportunity to save funds for other needs. It was assumed that this will increase the number of investors who want to build their own home with the help of a loan, with the possibility of redemption through saving costs.

The whole event with a variety of planned activities fits into the action characteristic of social marketing. The goal of social campaigns is the belief of the audience for which it is organized to accept changed or rejected certain beliefs, attitudes or behavior. The proposed tools that have an impact on potential investors and the people from their entourage, refer to activity within the framework of social marketing.

A key element of the campaign was the creation of website www.oszczedzam-energie.pl containing a database of technical and other data, database articles, tutorials, and graphics and video materials. To familiarize yourself with its contents the campaign in Internet and press was organized. It was also created a mobile app AR (Augmented Reality), in which the user can move the virtual process of design and construction of energy-efficient or passive houses. The user can change the size and rotate the display detail of the building, interact with it, modify its technical parameters, as well as obtaining additional information with a text description (fig. 8.2). The investor can also learn what is important while choosing the technology of construction and installation works, and is able to see how much can save on lowering the energy consumption for heating and ventilation.

The page also contains suggestions how you can use internal installation and what level of savings you can expect. The user can find answers to the following questions: On what to pay attention when designing energy-efficient or passive house? How to organize the construction? What is the process of construction? What is the energy certificate of the building? How to get financial support? How to live in a passive house? How much can you save? This function performs a mobile 3D application that allows you to create a home concept, ensuring the adoption of appropriate projects solutions for energy-efficient or passive houses. It allows you to calculate the annual energy savings for heating and ventilation comparing to conventional building. Using the app it is possible to view a 3D model of this building. The program, which you can download from the Google Play store is available on iOS and Android devices.



Figure 8.3. The screen indicating the possibility of rotation of the building relative to the cardinal directions [19]

For a better acquaintance with the advantages of energy-efficient construction it was also suggested that communication through Facebook is possible. There were published three info graphics called «the House that saves me». Using Facebook peoples could learn where to receive coffee from the coffee truck which saves for me.

The campaign was supported by action in the form of Public Relations (including training, training for journalists and bloggers). During the distribution of coffee it was possible to receive a QR code to access the program (fig. 8.4). On the web page there is also a special calculator, which can estimate the amount of savings in standard energy-efficient or passive houses while comparing it to conventional houses.



Figure 8.4. The cup of coffee with a QR code to the calculator [19]



Figure 8.5. Posters of the campaign «Something is in the air» and «Make the atmosphere in the house»
[Source: <http://www.tworzmyatmosfere.pl/multimedia>]

There have been used all kinds of tools of communications online: website, mobile app (iOS, Android), AdWords, banners, video inserts, mobile campaign, mobile apps and advertising in the electronic editions of weeklies and magazines (articles, links, materials from the editors, sponsorship). In the press: print and promotional materials, in the most famous weeklies and magazines on architecture, construction and

construction equipment – a total of 17 titles of journals, a model of a house with piggy Bank function etc. In just six weeks, the information was viewed on the popular Internet portals and on YouTube more than 400 thousand times, the log on page was approx 80 million times [20].

The action was included in a number of educational and promotional events in the field of energy efficiency and renewable energy, including the idea houses harmless to environment.



Figure 8.6. Examples of outdoor advertising connected with

The project «the House that saves me» won the main prize at the Competition of the Public campaign of the year 2014 in the category «Campaign for environmental issues». The main arguments underlying justification of the verdict of the jury was: interesting and unusual approach in creating positive motivation for environmental activities, witty symbolism and the choice of forms of communication and information transfer to social circles.

Another project is addressed to the people and institutions responsible for the production and use of energy and heat in the construction industry and related air pollution. The name of the action is «Something is in the air» and «Make the atmosphere in the house». The following figure 4 and 5 presents the example of advertising posters.

In conclusion, it must be emphasized that the process of introduction of energy-saving and passive construction is very complicated. The fact that the change in energy consumption in the building had grown very slow was showed in statistics. The research also shows relatively low level of knowledge in the field of energy efficiency in construction. The creation of appropriate building regulations is not enough. It is necessary to conduct multilateral educational action in order to prepare for the realization of the different groups of the investment process for the construction and further operation of the standard buildings. An example of using social marketing for promotion of this idea is very interesting and should be developed in similar type of projects.

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Transliteration

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8.6. The elements of gamification in the social marketing campaigns

Widawska-Stanis A.

Gamification which uses the elements of games and lets build the involvement of participants, has become very important element of strategy for marketing commercial company. It is used in marketing, recruitment and staff management, education and training, administration, brand promotion and many other fields. Social marketing is a notion, which has occurred in the marketing theory as the result of the evolution of marketing orientations. The justification for occurring the conception of social marketing was the increasing of privation, natural environment degradation, poverty, hunger and social pathologies. Today the social marketing shows that strategies and marketing tools successfully used in commercial marketing can be used in the case of social marketing campaigns, but undoubtedly the convincing the society of changes is sometimes very difficult. That is why there is an idea for using the elements of game and gamification as common and well-known used tools. Gamification is transferring some mechanisms and solutions connected with games to everyday life, in the way to make what we do more involving and influencing us. Taking under consideration the burden of problems, which are showing in social campaigns, the using of gamification in marketing actions requires from marketers not only proper planning and introducing but also huge amount of creativity and innovation. There are some examples of using the elements of gamification in the social marketing campaigns.

The rule of social marketing is the realisation of marketing goals by long-lasting actions, which should result in the changing of attitudes, creation of ideas serving all society. According to Philip Kotler social marketing is «the rule of enlightened marketing according to which a company should take marketing decisions, taking under consideration desires and long-lasting businesses of customers, requirements of company and the businesses of society during long period of time» [1]. Social marketing can focus on topics connected with the biggest social problems. That is why social campaigns can concern some topic groups: the protection of environment, health prevention and protection, social behaviours, ecological education. «According to The Foundation of Social Communication, «social campaign» is a set of different actions: planned in particular time, directed to particular group of people, which is to increase the knowledge, change the way of thinking, (change) the behaviour towards particular social problem or is an action leading to solution of social problem limiting the achieving of common good, which is thought to

be a marketing goal» [2]. The other definition of social campaign says that «social campaign is an action focusing on the change of attitudes and behaviours of particular group of people, by using different media. There are a lot of subjects involved in social campaign: business, media, social organisations, national institutions, enabling different forms of participations: financial and material help, services. For the company which is involved in it is a way of creating reliability and positive image. The selling of products or services is not connected with the social campaign» [3].

Gamification in marketing.

«The development of information technology, the evolution of personal computers, the Internet, Web 2.0, mobile technologies, smartphones is inseparable linked with the using of the newest technical achievements for entertainment, including games. Even in the eighties, the games created for personal computers were used for advertisement actions» [4]. And indeed, the present market of computer games is developing dramatically in Poland too, as it is showed in the results of Video Game Market Report 2015, 75% of the Internet users aged 15-75 are players [5]. Similar results can be observed in earlier years. According to TNS OBOP in 2012 «77% Polish users of the Internet declared that they have ever played games on-line, whereas the a fifth have played more often than once a day» [6]. A year later, in 2013, according to the research carried out by the panel Research.NK and presented during the Game Industrial Trends, the number of players has increased to 85%.

We like playing and we play games, and this fact is known by marketers and they more often use this knowledge. Why don't use this mechanism in other fields, when so many people are involved in games, gain the points, win the levels. A modern purchaser, a potential employee, a deliverer or a broker looks for something new, something what is so interesting to come back to this activity, something which will have the element of competition and involvement. The conception of gamification is not new one, «researchers of the subject point, that the basis of modern theory of gamification can come both from the idea of socialist competition of work and motivating techniques used in the nineties in American companies [7]. So what is the gamification, how can we define it? Gamification is the implementation of structure and game mechanic (points, badges, levels, challenges, prizes) in the real world in order to arouse the involvement of users, the change of their behaviours and solving the different types of problems [8]. The other definition points that «gamification can be defined as the process of enriching the services with visible and open element (motivating), by means of which we can make the changes to arouse the experience of playing and further behavioural consequences» [9].

The tools used the most often in gamification actions can be different types of prizes, feedback, achieving further levels of involvement, achievements, gaining the further status of players, tasks, challenges, score tables and ranks.

The examples of using the games in social campaigns.

«According to one of the biggest world's agencies publishing the Premium analysis and market research, Markets and Markets agency, the market of gamification is developing in the tempo of 67% annually. Whereas Gartner, one of the biggest research companies of IT branch, has estimated that in 2015 about 70% among 2000 the biggest companies in the USA would have experienced at least one gamification project» [10]. A lot of interesting gamification solutions in social marketing can be realized thanks to modern technologies. One of the examples of using game elements in actions for society is the application made Canada entitled Give-Back. The users can be involved by helping the others, what is connected with scoring the higher levels and collecting points, but also possibility of choosing the organisation which will take money won in game. The charity in Canada was based the most often on the possibility of making deductions to given organisation. It didn't need from taxpayers any engagement. Thanks to the social media the charity actions have gained completely different face, the users engage their mates, they have become philanthropists in their society and they help other people. In this way the net of mutual connections has been created, thanks to which both needing people and involved ones in the help, users have easier access to information and the method of communication is common, available and cheap. What is more, a lot of companies, which are building in this way their image, get involved in the social help.

The other example, this time from Poland concerns gamification of actions with the thinking about the activation of local society. The laboratories Orange it is a social program, by means of which the multimedia common rooms in small towns and villages are set up and run.

The aim of the initiative is providing the residents better access to the technology, the reinforcement their digital competence and creating space for common actions [11]. The organizer of action is Orange Foundation. Thanks to this initiative there are 77 new common rooms in Poland, each of them has been equipped with computers, free Internet, game console, LCD TV set and furniture. The gamification actions are based on the organisation of events and exchanging the ideas, where each initiative is awarded bonuses with points, medals and prizes for all common rooms. The foundation helps to run common rooms, webinars, tutoring, educational classes for children and competitions for residents,

sport competitions and many others. Additionally, there is a possibility of getting a grant for social goals.



Figure 8.7. The first birthday of gamification in Orange laboratories [Source: <https://pracownieorange.pl/o-programie>]



Figure 8.8. The entrance at underground station during the action The Beer Turnstile [Source: http://www.bcmelaboiteboisson.com/news_boite/special-bresil-4-une-canette-pour-prendre-le-metro/981]

Social marketing campaigns concern as we can see, a lot of different fields. Apart from social education and charity actions, one of the most

often discussed problems is the safety on the roads. In this case the specialists in gamification have taken actions which enable to persuade users to the changing of behaviours. The unusual idea of promotion and social campaign has been invented by a beer producer in Brazil. The campaign entitled The Beer Turnstile was organized by the beer company Antarctica. The key of the action was providing the safety on roads during the carnival in Rio de Janeiro. This event is the attraction for thousands of people yearning the hot rhythms. In pubs, clubs and in the streets there are a lot of people who are drunk after the party and they want to drive a car to get their homes.

The producer of Antarctica, one of the sponsors of fiesta, has decided to decrease the number of people driving cars after drinking the alcohol so increase the safety on the roads. The action was based on the promotion of underground as the alternative means of transport. The participants of carnival could travel by underground without the activation of gates with a traditional ticket. During the carnival it was enough to have an empty can of Antarctica beer, scanning bar code and throwing the can to the «canmat». «The opportunity of using free transport has encouraged hundreds of people to leave their cars during the carnival what was directly reflected in the number of accidents during this time (fall by 43% in comparison with previous year). Great number of people benefited from the Antarctica's action – on average every 1000 people left empty beer cans in The Beer Turnstile. The collected cans were shown to promote the actions, and later given to recycling companies» [12].

Another field of social marketing interest is environment protection. A company concerns the wider using of returnable packages was organised by Carlsberg Polska, the producer of beer in returnable bottles. The factual patronage was taken by Nasza Ziemia Foundation. As it is shown in the report of TNS for Carlsber Polska in 2013, a returnable bottle is the second packaging chosen by people who buy beer. In the meantime, the information about the fact that a given beer is sold in returnable bottle is interesting for only 6% of customers. The awareness that every bottle is ecological packaging is owned by only 20% customers. [13] The element of gamification which has been used in the campaign was game on Facebook «Put the screws on me». The involved participants for the best scores in «virtual» collecting and giving bottles back were given the «eco gadgets» – ecological bags designed for the campaign in social studio. What is more, one of the actions of campaign was the creation of interactive map of Poland with shops friendly to returnable bottle. The ambassador of the campaign was Piotr Rogucki- a musician and an actor.

Gamification and the elements of games are used very often in city space to pay attention and arouse the involvement of participants. It is

the city space which can be good for changing the social behaviours. There are a lot of examples, and some of them are below:

1. CivCity application which was created to activate the residents of American town Ann Arbor. «The total application is based on the assumption that more aware residents are more active residents. (...) The points are collected in CivCity for every activity connected with city life- the cleaning of area or participation in events organised in Ann Arbor. The project is also responsible for reporting ideas to improve the business in city» [14].

2. Recuperator is an idea concerning the dog's excrements in the city space. The idea occurred as the result of action Think Blue, the goal of which was working out the action influencing the comfort of life in small societies. The action was the initiative of Volkswagen Company and the idea for recuperator of dog's excrements was introduced in life. «The rule of working the recuperator is simple. After bringing the packed in the foil animal excrements, the owner can be transformed in the player. It is enough to put excrements in the hole of recuperator- then a person is given a chance of winning the ecological gadget» [15].

3. The company Puggedon tried to solve the social problem of homeless dogs and the recycling of plastic bottles. In Istanbul the containers were put, where passers-by can throw plastic bottles. There was a prize for every bottle. But this time the prize was given to homeless dogs. There is water and dog food which is dispensed by automats every time, when somebody put an empty bottle to the container. In this way the company wants to remind about ecology and teach sensitivity for homeless animals wandering down the streets [16].

Gamification in social campaigns in the light of research.

The knowledge about elements of gamification and using it in the social campaigns among young residents of Silesia area was examined at the turn of 2014 and 2015. The goal of these research was the using the gamification in social campaigns and the estimating the tools of gamification from the social marketing point of view. 172 people have taken part in the research including 75% of women and 25% men, the residents of towns (62%) and villages (38%). The tool of research was the survey which included 8 questions. Among the tools of gamification which can be used in social campaigns the examined people pointed application for smartphones (30%) and prizes (29%).

Among the subject groups of social campaigns in which in respondents' point of view could use the elements of gamification, the social behaviours (35%), health prevention (31%) and environment protection (24%) were shown. The least number of people pointed the ecological education (10%), what can be caused by small number of campaigns of

this type in Poland. For the question concerned the well-known social campaign, in which the elements of gamification were used, the respondents didn't give any answer. There were some examples of social campaigns which annually appear in media and probably that is why the respondents remember them. It appears that despite the easiness of implementation and costs of gamification solutions which are low enough, the creators of Polish social campaigns don't fully appreciate the possibilities of games. Sometimes only one element of fun is enough to involve the participants or only help them to remember the campaign and offered solutions.

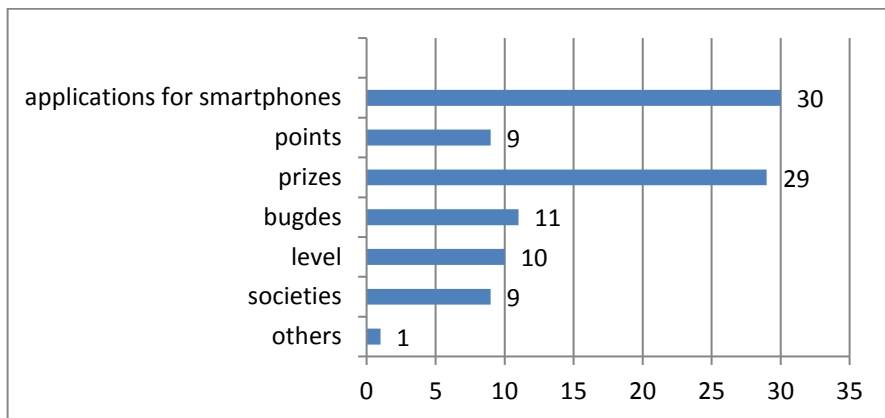


Figure 8.9. In your opinion which tools of gamification can be used in social campaigns (in %)?
 [Source: The study based on the carried research]

The preparation of social campaigns, building the involvement, education and changing social attitudes aren't easy tasks. As the examples presented in the article show, the creators of campaigns choose gamification among a lot of means. It is known that no campaign can be based only on the gamification project. It is good to take under consideration the possibilities which are given by games, start the creativity and let participants look into the social problem more extendedly, learn something about it, become more tolerant towards ill people, society of lower family or economic situation and consequently change or stop some behaviours. Above study is only the beginning of deeper analysis and studying the set of gamification actions able to be used in social campaigns.

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Section 9

Environmental quality benchmarks of innovative development

9.1. Management of environment: concepts, essence and contents. Priorities of nature-protecting activity

Korenyuk P.I.

1. Theoretical fundamentals of rational natural using and protection of environment.

The exchange processes between nature and society have caused improvement of working instruments of use, reproduction and protection of natural resources. The rate of the growth of opportunities of a man (with an example of growth of work efficiency with application of the newest technologies, high tech instruments of work etc.) considerably exceeds the rate of growth of the anthropogenic pressure on environment.

The artificial reality created by human work and capital has occupied a significant place in natural ecosystem. The man exists exclusively within the limits is artificially created ecologic-socio-economic system, which balance needs to be constantly supported. The application of instruments of work has created a man being rather independent and universal factor on the planet. The man has received an opportunity to develop contrary to the order and direction of natural processes.

The science for a long time did not study the question of influence of human civilization on the environment. Entering the industrial relations the man makes necessary for the maintenance of own ability to live the material, cultural and spiritual boons in shape of the goods and services of a natural origin. All complex of the vitally necessary boons has either the direct natural origin or the secondary or tertiary origin of natural character. In ultimate result all is taken from a nature. Hence, the process of manufacturing is expedient to equate with the process of natural use. Such naturephilic approach cardinally defines the form of social activity of the people. The existing approaches in management natural use do not provide the coordination of ecological values and economic results of environment quality management.

The process of work, which is carried out by the man in interactions with the environment, contains features of socio-economic formations. Effectiveness of work depends on the form of the industrial relations,

level of productive forces of the society. A level of development of manufacture, perfection of engineering, newest technologies, high degree change of received natural material, the effective utilization of forces and natural phenomena are in directly proportional sizes. On the whole the necessity for development and introduction of the system of management of environment as newest alternative model in market conditions natural use have arisen.

The comprehension by the man of the contradictions between manufacture and ecological consequences promotes development of the organizational economic mechanism of rational natural use.

The management of environment has to take into account the ecological, economic, social contradictions, to carry out administration, to define rational parity among consumption levels, development of manufacture, economic forces of natural use.

Natural use is socio-economic, public natural process, which is expressed in the following formulating:

- rational use, protection and extended reproduction of environment, anthropogenic mastering, operation of land conditions, separate kinds of natural resources on local, regional and global scale;
- synthetic applied science, which develops principles of human activity, which closely connected with the use of nature resource potential;
- natural use in narrow sense is re-cultivation, melioration of land, waste refinement and recycling, regulation of drains, creation of reserves.

It is allocated in the management of environment the following functional blocks:

- resource use;
- structural transformation of natural resources from industrial use into reserve territories;
- extended reproduction of nature resource potential;
- protection (simple reproduction);
- administration of quality of environment by economic (indirect) methods;
- ecological monitoring.

The management of environment studies economic methods of management of natural conditions of residence environment of the man in dynamism, time inconstancy in view of a level of usage by society of environment.

Scantiness of natural resources explains a problem of the contradictions in the relations: man – nature – society. An environment and national economy at present level of productive forces development do not stay in harmonic balance.

The economic entities both legal and physical are interested in ecologically clean environment as vital space and primary factor of manufacture. However, on the other hand, guided by feelings of the fastest benefits, they transfer maximum of nature protection expenses on others or avoid paying the appropriate taxes, payment and ecological dues.

This dilemma can be solved by establishing of obligatory contractual ecological conditions for the separate entities allowing solving a problem of financing of nature protection measures especially with the orientation on the extended reproduction of natural resources.

Abovementioned allows formulating the following principles to management of an environment:

- priority of ecological requirements over economical;
- priority of ecological needs of next generations;
- ecological education;
- ecological culture;
- ecological upbringing;
- ecologic and economic wisdom of a human society;
- interdependence of economy and nature.

Management of environment as branch of economic science is called to solve the number of the following tasks:

- develop methods of valuation of natural resources;
- include money valuation of natural resources in the cost price of finished commodity;
- elaborate the methodical approaches in charge of depreciation deductions on natural resources, which are used in manufacture as the basic ways, for example land allotments in agricultural manufacture;
- form the organizational-economic mechanism of management of rational use and protection of environment;
- elaborate methodological and methodical principles of maintenance of the extended reproduction of natural resource potential;
- develop calculation methods ecological-economic efficiency of capital investment into nature protection measures.

The management of environment is exclusively carried out by the economical entities. The essential advantage is the internally motivated activity behind principles of priority of the ecological objectives above economic ones. The nature protection activity is voluntary, however economically stimulated, that is the material and moral stimulation of improvement of quality is offered. In the management of environment the results very frequently justify complication of process of realization of nature protection measures complex. The business activity calls for the creative solving of environment protection problem, when it is impossible only to report about the nature protection measures execution.

2. Monitoring of environment. Control of the state and quality of environment.

Everything needed the man receives from nature: water, air and industrial resources for production. In its economic activity the human society has created subjects fundamentally new to the nature: machines, buildings. These products of vital activity of the man are the natural materials altered by human work. They, in turn, make negative influence on an environment, infringe upon its age-old harmony.

Scientific and technical progress ambiguously influences the nature: on the one hand, the wastes problem grows, and on the other hand the man has all mightiest levers to bring the environment to primary state, to improve powerfully its situation, harmonizing the relation: man – nature – society (fig. 9.1).

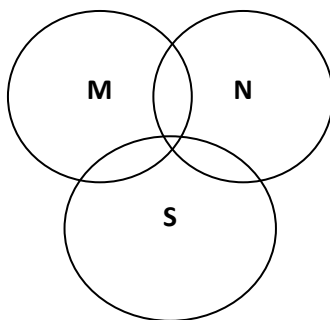


Figure 9.1. The circuit of interaction of a man, society and nature

All elements of the nature represent in itself environment, the subjects are created by human work do not enter at concept an environment. The environment for last centuries gives in to growing anthropogenic influence. Integrity of ecological potential, the mutual transformation of economic and ecological effects during uncertain time causes expansion of a spectrum of measurements and evaluations. The rationality of natural use is characterized by parameters of structure of use of territory, quality of ecological potential of land divines.

For evaluation of influence of qualitative structure allotments on ecological stability of territory it is necessary to carry out computation of factors of ecological stability of territory and influence of allotments on surrounding lands.

It is proved by science and practice that with the growth of agricultural development and tilled soil allotments the landscape ecological durability essentially falls.

The concept «environment» is close, however not identical to the concept «biosphere» the covering of ground, which structure and composition is caused by vital functions of flora and fauna. Human activity closely connected with interaction with the environment. For maintenance of processes of vital functions of the man it is made rather essential anthropogenic influence on environment. The fauna also uses riches of the nature, but, as against the man, does not infringe upon the basis of ecological safety of the environment. The tendency of the industrial pressure growing in the first, and especially second, half twentieth century is observed. Extremely necessary is convoy of manufacturing and economic activity of a human society by nature protection measures. Here comes to the foreground the creation of the nation-wide environment protection program, which has to unite efforts of the state as a whole and each citizen in particular.

Accruing volumes of manufacture of the economic complex of Ukraine require ever more raw material of natural origin, and natural resources (minerals, water, wood) is limited or rather limited. It is necessary to find an optimum between needs of a human society and potential possibilities of a nature. It is necessary to take from the nature resources not in amounts, which are necessary for satisfaction of needs of the man, but in that amount, which it can give without the losses for restoring process.

The objective economic laws as a result of interaction of a human society and nature are closely bound with the laws of a nature, therefore there are complex economy and ecology relations, research and study of which requires the especial methodological and methodical approaches.

The man as a conscious (clever) element of a nature and member of the human society (worker), having learnt the laws of nature and submitted to them, receives the opportunity to use them in the purposes for satisfaction of own material and spiritual needs.

The economic laws of manufacture are the basis for development and observance of the requirements of protection of the environment. The penal sanctions and the pecuniary stimulation are the effective economic key factors influencing the nature protection activity of manufacture.

Nature is uniform complete system, but industrial operations unlike are not closed within the framework of the separate enterprises and branches of industry. At the development of industrial standards and their implications the optimum of natural conditions that is vitally necessary for the man was not always taken into account. In result there were such industrial conglomerates, as Donetsk, Mariupol, Kriviy Rih on edge of ecological crisis. The separate mark in the history of Ukraine was the breakdown on Chernobyl Nuclear Power Plant in 1986, which has struck in the heart of our state.

Traditionally Ukraine was the granary of Europe. As the agrarian state, it has world's valuable significant stocks of fertile chernozem soil. With actual volumes of entering the pesticides, though for last years owing to an economic crisis these volumes have decreased considerably, in the majority of regions food products oversaturated by the leavings of pesticides, nitrates, and radionuclides harmful to consumption.

The increase of amount of the population and growth of productive forces of a society are the factors of anthropogenic pressure on natural biogeocenoses. Especially, at the threshold of the twentieth century and at the end of the nineteenth century the productive forces were not such ecologically aggressive as now, and the natural resources were considered inexhaustible. The consequence is the creation of resource capacious technologies, manufactures. The urgent need has arisen in the crisis ecological situation to use mainly the little waste and wasteless technologies, allowing 2-3 times saving of natural resources per unit produced. It is not a secret that in wastes of manufacture there are actually the plenty of raw material. The growing rates of development of material manufacture lead to the increase of delivery from the nature, and it is the factor that deepens ecological crisis, negatively influences economic safety of the state.

Constant breakdowns of natural ecosystem functioning serve the indicator of presence of a negative disproportion in the relations: man – nature – society.

The maintenance of harmonious development of natural and social relations is appreciably determined by the achieved level of ecologization of social production, In the modern conditions of formation of market economy, cardinal changes in the land relations the special role belongs to a region as to an administrative system, harmonious development of which is not possible without solving of ecological problems, improvement of mutual relation of the man and the nature.

The mutual relation of the man and the nature within manufacture of the aggregate social product is one of the important problems of the present. There is an urgent problem of social use, protection and reproduction of fertility of land resources as a part of natural resource potential. Its solving at all levels, especial on regional, promotes provision of the population by food products, and it is a global problem of modern development of a civilization. A problem of an effective utilization naturally industrial potential long time was seen as achievement of high economic parameters of economic activity of goods producers.

Ecological crisis in natural use is the real phenomenon of development of regions of Ukraine. Manufacture, which functions on the land, should not infringe upon an ecological situation of the environment. An

ecological direction of land usage should have the priority before economic in business activity on land, and profitability should be considered as initial from fertility and agro-ecological condition of a land.

State regulation of ecological and economic processes should be based on the data of ecological monitoring of environment. In the essence and contents it is the present form of realization of processes of ecological activity through ways of information, which provides current, perspective ratings and forecasting of an environment, vital activity of a society, conditions of functioning ecosystem with the aim of taking of the effective administrative decisions concerning maintenance of ecological safety of the society.

The ecological policy of the state provides:

- rational use of natural resource potential;
- protection of favorable environment of vital activity of the man;
- solution of a complex of ecological, social and economic problems;
- international ecological cooperation;
- other question of an ecological origin.

The state system of ecological monitoring is the integrated information system of the collection, preservation and ordering of the ecological information for evaluation and forecasting of condition of environment. It serves a basis for elaboration of scientifically grounded recommendations for rational use and extended reproduction of natural resources, the effective administrative decision making at different levels of authority, improvement of the legislative and normative acts.

Ecological monitoring is expedient to carry out according the long-term state program, which defines the coordinated actions of departmental bodies of authority, enterprises and establishments of all patterns of ownership.

The objects of informatization of state system of ecological monitoring of an environment are processes of ecological activity, integration on local (micro) and nation-wide (macro) levels.

The subjects of state system ecological monitoring of an environment, which are responsible for realization of the State program of ecological monitoring, are the profile ministries and state committees. The given subjects within the limits of the own competence collect and process the data on a situation of an environment and make the appropriate decisions for stabilization of ecological conditions.

Balanced harmonious development of productive forces of a society essentially will raise a degree of efficiency of labor potential, which is the precondition of reception of the animated income, which is a basis of harmonious development of the man as compound component of a nature and productive forces of a society. Harmonization of the natural and

industrial relations as the main direction of anthropogenic activity of a society promotes the salvation of urgent and sharp ecological problems of the present, maintenance of optimum economic and social development of each country, its regions and civilization as a whole.

It is necessary to connect economic interests with ecological, though the economic laws of development of a society differ from the laws of a nature. There is the incontestable fact of neglecting that a human society is a component of an environment.

To the great grief of the scientists of ecologic and economic profile and appropriate experts, at the present nature protection measures are isolated and a complete system is absent. The need ripen for development of the Ecological concept of Ukraine and its use on the state level. The environmental law is allocated in separate science and for this purpose there are some reasons. The state is interested in research of occurrence and functioning of the ecological relations in a society, especially in the national economy at manufacture of the material and spiritual boons. Last years a role of the ecological factor in economic monitoring regulation of an environment grows ever more. The anthropogenic influence is shown in shape of scientific and technical progress in different industries and agriculture, in non-productive sphere of civilized expansion of patterns of ownership on natural resources. Known ecologist N. Raimers asserted: «The mankind should have future. And it can be light. Unsolv-able problems do not exist. To pass a dangerous site of a way to the future, LIGHT OF ECOLOGICAL KNOWLEDGE, activity of work and high professionalism will help».

3. Management of environment as the economic category: essence and contents.

Modern management was formed as interdisciplinary science, which studies a place of a human society in an environment, management of process of use, reproduction and protection of natural resources with the strategic purpose, which consists of their rational use with the purpose of the extended reproduction and economical consumption. In process of development of a human society economic and ecological contradictions are pointed, the role to management of an environment as tool for their braking and solving grows. Ecologist has necessarily as a matter of fact to be the manager of an environment. He has to be capable independently to operate nature protection activity by himself at the firm, in the region, if it is included into his competence. The significant role here is played by the Ministry of protection of a nature and nuclear safety, its regional and regional bodies even are inclusive every enterprise and every worker. Under conditions of the market relations and civilized business a role and responsibility of the expert-managers of an ecological

profile considerably grows. There are three kinds of managers: lowest (separate site), average (separate division) and maximum (linear or functional head). The manager necessarily bears responsibility for authority, with which he is endowed, and for the decision, which he made. The manager of an ecological profile first of all in the nature protection activity determines concrete goals: mega (global) activity UN, UNESCO, Green peace and others; (at the state's level profile ministries and state committees), micro level (nature protection activity at the enterprises' level). Some scientists also single out meso level (at the regions' level), though in the essence it comes nearer to macro level.

The especial role in management natural use is allocated to ecological education, ecological culture, and upbringing of ecological consciousness. One of the basic functions, which provide process of management and the inclusion of the manager in it, is function of the control. As soon as the plan of nature protection measures is compound and authorized for every of abovementioned levels, all activity should be directed on its realization. Here again control plays a remarkable role. The information is the extremely important factor. A role of the manager of an environment (general and concrete expert) is remarkable in achievement of multiplicative economic and ecological effect. The capital invested in nature protection measures necessarily gives economic return in the strategic sense: quality of food products, health of the population etc. The businessman or state enterprise by ecological business, which is impossible without highly professional managers-ecologists, will be able to achieve aggregate economic and ecological effect, which is multiplicative by nature (healthy population, need to pay for hospitals etc.). Management of an environment is full right science and separate educational discipline, which synthesizes in itself knowledge and achievements of: management, economics of natural use, ecology and other disciplines of an ecological profile, environmental law. The management of an environment investigates and studies multi-component and multi-level complex economic, ecological and social systems in the nature and society. Industrial manufacture needs to be ecologized. Ecologization is the expansion of ecological principles and approaches on science, productions and social phenomena. It includes three compounds:

- maximum expedient ways of use of resources;
- highly economic, ecological and social efficiency of use of resources;
- protection and extended reproduction of natural resources.

The appropriate experts (managers) as the basic task should see the achievement of ecological equilibrium, which is balance of natural and social (anthropogenic) processes that promotes achievement ecologic socio economic benefit (wasteless and little waste technologies).

Each enterprise should ensure the extended reproduction of natural and industrial potential through the following factors, namely:

- financial measures of protection of a nature;
- regulation, creation of ecological local funds;
- payment for usage by natural resources;
- additional payment for natural resources, if they withdraw from an environment in manufacture;
- economic stimulation of nature protection and nature recreation measures.

Hence, one of indirect methods of improvement of regulation of an ecological situation, has to become the maintenance by the state right on sale above the top prices of ecologically pure production, since its price can 2-3 times and more exceed nominal one.

4. Natural resources. The basic priorities of nature-protecting activity.

The natural resources are object, conditions and processes of a nature, which are used or can be used in social manufacture for satisfaction of material, scientific and spiritual needs of a human society. The natural resources are divided into exhaustible and inexhaustible. The exhaustible are renewable and non-renewable. Inexhaustible resources are space (solar radiation, sea tides). Climatic are warmly, damp, air, energy of wind. Hence, it is necessary to carry out the quantitative and qualitative account of natural resources, to carry out the effective control of their use and management of their quality. The basic direction of protection of natural resources is their preservation and extended reproduction during their use.

The natural resources from the point of view of effective management need to be used behind the following sequence:

- 1) Economic rating of natural resources;
- 2) Use them in economic process;
- 3) Provision of economic incentives for improvement of their condition;
- 4) Direction to an ecologically initial situation.

The long-term programs of protection and extended reproduction of environment require significant means. Limitation of own means of the state, credits and investments demands precise definition of priorities of nature protection activity with the purpose of development and realization of the economically favorable decisions, taking into consideration the economic losses, in particular, deterioration health state of the population.

While researching the given question there is a question: what is priority in nature protection activity? To what nature protection activity first of all should be directed. It is hard to answer unequivocally. One of tactical tasks is suspension of growth rates of ecological crisis, and strategic is its complete prevention and achievement of initial state of a nature.

The basic priorities of protection and the expansions of naturally resource potential environment are the following:

- ecologic safety in a context of national safety;
- liquidation and reduction to a minimum of nuclear energy production influence and other dangerous factors of scientific and technical progress;
- stabilization of ecological situation of water resources (basins of the large and small rivers, the Black and Azov seas);
- improvement of quality of drinking water;
- increase in parameters of an ecological situation of the industrially advanced regions;
- construction and reconstruction of capacity of breakage facilities;
- formation of balanced systems of natural use;
- structural reorganization of an economic complex;
- ecologization of technologies;
- preservation of environment.

Hence, for achievement of the abovementioned purposes it is necessary to solve the following tasks:

- promotion of ecological durability of land;
- growth of a portion of ecologically stable kinds of forests and arable land;
- neutralization and recycling of industrial and household wastes;
- preservation and revival of small rivers;
- completion of formation of state system of monitoring of environment;
- formation of system of forecasting, prevention, operative response to extreme situations of natural and man-caused origin;
- creation of system of ecological education, upbringing, culture.

On a global scale scientists, politics, expert for a long time reflect on forecasting of the future of the Earth, which is impossible to prognosis without the ecological factor. After creation of the European Economic Community in 1987 the initiative of France in sphere of interstate protection of an environment has found support. In result the interstate structures were created. EU and European council for last two decades have developed and realized four programs for protection of environment (tab. 9.1).

In 1993 UC adopted the new standard (BS 7750) for a wide range of products of an industry and agricultural manufacture, activity of the enterprises. Production, which maintains this standard, has advantages in the European market of the goods and services. Ukraine also has joined in the all-European process state and legal regulation of preservation of quality of an environment.

Table 9.1. Years of acceptance of the laws on protection of environment

Country	Law on protection of environment	Law on protection of water resources	Law on the wastes control	Law on protection of atmospheric air	Law on ecological examination
USA	1970	1972	1965	1963	1969
Japan	1967	1959	1970	1962	1973
France	1976	1964	1975	1974	1976
Germany		1957	1972	1974	1975
Italy		1976		1966	
Sweden	1969	1969	1975	1969	1969
Great Britain	1974	1961	1974	1956	

The strategy of system of agricultural natural use provides:

- formation of highly productive ecologically proof landscapes;
- harmonic combination of the mechanism of action of economic laws and laws of a nature within the limits of land allotments in view of the factors, that limit loading on agricultural lands, biological resources and landscapes;
- implementation of the requirements of ecological safety in system of agricultural natural use;
- formation of the mechanism of economic, administrative, criminal liability of agricultural nature users;
- development of nature protection measures on the basis of the requirements of the international legislation and increase of its role in practice of agricultural natural use;
- creation of system of economic stimulus of manufacture of ecologically clean production on the basis of technologies of development of the village population.

With the purpose of achievement of the abovementioned tasks it is necessary:

- accomplish the complex of ecologic and economic evaluation of territory of Ukraine;
- ensure the performance of the national program of protection of grounds for the period until 2010;
- organization of the use of land;
- work out and introduce the branch circuits of preservation and extended reproduction of natural resources;
- form waterproof strips;
- introduce biological methods of conducting agriculture.

Separately it is possible to tell about Conference 1992 in Rio-de-Janeiro, in which more than 100 world states participated, including

sovereign Ukraine. At this conference there was an accepted program document «The Order of the Day for 21 century», that contains the plan of actions of environment problems at the edge of twentieth and twenty first centuries. Ecological way of development of a society has to become a priority, which evolutionally will constantly change existing technocratic one but only consistently, because the environment is highly inertial system (tab. 9.1).

It is possible to make a mistake, for which descendants will pay the high price. In general using the boons of a nature, we should understand, that we have taken them not as inheritance from ancestors, and as duty from descendants. It is essential, because it is necessary to transfer an ecologically clean environment of a planet to descendants. It has to become a criterion principle that it is necessary to take from a nature not that it is necessary for the man for satisfaction of own needs, but that the nature can actually give without the losses for itself, for process of the extended reproduction of natural resources.

5. Ecological social relations: essence, contents and process of formation in Ukraine.

Ukraine as a whole is the agro-industrial country, as in the beginning of the twentieth century the agrarian sector was prevailing. As it is known, the peasants are extremely wise and far-seeing people. To formation of the wise perspective approach to any question a peasant is forced by character of conducting agricultural manufacture as way of life by generations. Sowing the peasant thinks how to look after a crop, how to collect. During centuries, millenniums of signs, traditions were formed, which are necessarily transferred by the following generation as the spiritual and intellectual inheritance. On modern build it is possible to unit them under the assimilation name «ecologically safe natural use». For example, to sow and to collect a crop, cut the hay for national popular belief it was possible not earlier, as the determined calendar days will come (to sow corn when plum tree blossoms etc.). The modern science can explain essence of such approach. For example, plum tree blossoms when the sum of effective temperatures above 10 degrees Celsius will reach necessary value. It is equally as much it is necessary that a ground get warmed thoroughly for crop of corn. In this case flowering of plum tree is the biological indicator (itself strict) for cropping of corn. The ancestors, not knowing term «the sum of effective temperature», trough centuries used it. Isn't it national wisdom!

The following stages of an environment passes management formation:

- development of ecologic and economic disciplines;
- necessity in qualitative management of environment by economic methods;

- formation and coming-to-be of management of an environment as a science;
- evolution of management of an environment as a separate science and educational discipline;
- withdrawal beyond the limits of branches of a nature resource use.

In 90-s years after purchasing of the sovereignty Ukraine developed the state ecological program. However Constitution of Ukraine as the basic document of the state has certainly fixed by appropriate clauses the protection of an environment in a complex. In the Constitution of Ukraine, it is underlined, that land, bowels of the earth, water, the woods, air can be of private, state, collective and municipal patterns of ownership.

The important components of legal base of the ecological law are the Law «On the protection of an environment» (1991), Ground, Water, Forestry and Airspace Codex of Ukraine.

The ecological legal relations in the essence are norms of the law in reality and in dynamics of their realization in practice. One of the important tasks is study of the contents ecological legal relations as legal form of ecologic and economic relations between the man and society from one side and environment from other side. Ecological legal relations arise at introduction of the rules of law in social and economic life, what in turn determine character of ecological legal relations.

There is bilateral interrelation of ecological legal relations with a subject of management of an environment. Ecological legal relations enter into structure of a subject of the ecological law and serve to legal settlement of economic cases. They are settled stable enough ecologic-legislative regulations. The concrete definition of abstract norms ecological legal relations takes place at licensing of natural use, especially of use of water. The ecologic-legislative regulations are realized only through ecological legal relations, and it enables to systematize and to develop the organizational-economic mechanism of realization of the Ukrainian ecological law.

The existing theory, methodology and practice of ecologic-legislative regulations gives the opportunity to classify ecological legal relations, which are the elements of the system approach in the process of study of methods of management of an environment.

In our opinion, it is possible to allocate the following versions of ecological legal relations:

- in the sphere of the account of natural resources (state ecological monitoring), including land, forestry, water, which are adjusted accordingly by clauses of Ground, forestry and Water Codex of Ukraine;
- in the ecologic legal relations of registration of the rights on natural objects, in realization of enterprise activity in ecologic usage, of licensing water usage and forestry usage;

- in economic legal relations in the process of the control of use land, water, forestry and other kinds of natural resources;
- in privatization, sale and purchase of natural objects and appropriate legal relations from realization by the owner of the lawful rights, powers and duties from operation of the land allotments.

Ecologic legal relations are divided into actual and judicial. Actual ecological judicial exist concerning concrete material objects, that are under ecologic-legal trusteeship of the state or owner. Judicial ecological legal relations provide the order of nature protection activity.

Ecological legal relations peculiar signs, which characterize them as social relation in sphere of protection of an environment, which are adjusted by working norms of the ecological law.

The objects of ecological legal relations are those of what concrete ecological legal relations consist. They give specific signs of ecological legal relations. The objects ecological legal relations are of such kinds:

- natural objects as natural complexes and in the whole environment;
- order of operation and preservation of abovementioned objects.

The natural objects have natural character of an origin and it requires conducting natural cadastres, monitoring, that has specific features. The fact that these objects are in close ecological relations means that the character available ecological legal relations rather essentially are influenced by action of the laws of a nature.

As the objects ecological legal relations natural objects are expedient for classifying by the following grade:

- the main kinds: land, bowels of the earth, water, woods, flora and fauna. The legal settlement of use, reproduction and preservation is considered as a subsystem of the legal relations in general. The regulating standard-legal act is the appropriate Codex (Land, Water, Forestry etc.). The ecological legal relations accordingly will be land legal, water legal, forestry legal etc.;
- environment, which acts as the object of the ecological legal relations under condition of anthropogenic influence.

The following factors of state of objects ecological legal relations that have legal value are singled out:

- natural virginal situation (organization of reserves, national parks);
- modified situation, which induce legal relations with elimination of negative consequences of influence of the man and ecological legal relations for protection of a nature (planting woods, forest belt etc.).
- unnatural situation when the natural object is so changed, that it could not independently exist without support of the human factor (alive and materialized labor). For example, the transformation of woodland plantings in arable lands changes radically agrophysical and agrochemical

parameters of a ground; therefore vegetative cover (namely crops) can grow on these grounds only with use of human labor.

The features of objects of ecological legal relations are typical and individual. The subject of the ecological law is a physical person or legal entity, which has the right to use the appropriate natural resources. In the same time protection and preservation of a nature in Ukraine is the constitutional duty of each citizen. The subjects of the ecological law realize to ecologic-legal norm through ecological legal relations. They are subdivided into the subjects of the ecological law and subjects of ecological legal relations. The subject of the ecological legal relations can be only person who under the law is given the admission in participation in definite ecological legal relations.

The subjects of ecological legal relations are subdivided into the authorized and the obliged. It means that each authorized subject necessarily is corresponded with the presence of the obliged subject.

The authorized subjects carry out a role of carriers of the subjective rights and the obliged subjects are carriers of duties from realization of the given rights. For example, owners of lands of agricultural purpose are the subjects of the ecological legal relations and they have an opportunity to realize widely the powers of use, extended reproduction and protection of fertility of the concrete land allotments and also objects of an environment, which are placed in their land allotments.

The subjects of ecological legal relations have general and special powers. For example, in the Water Codex of Ukraine along with general powers of the users of water (the item of 11 Water Codex of Ukraine) is stipulated drinking water use (special power).

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9.2. Environmental external cost assessment as a tool of Ukrainian energy system management: review of approaches

Karaieva N.V., Bandurka O.I.

A sustainable energy system can be characterized as a system wherein the production and use of energy resources support long-term social and economic human development while staying compatible with environmental balance. Strong indications exist today that continuation along the current energy-system development path, and the anticipated rate of change over the foreseeable future, are not compatible with key elements of sustainability.

Internalization of environmental external costs into the full energy production cost is considered as a potentially efficient policy tool with regard to energy for reducing its negative impacts and move towards a more sustainable energy supply and use. Consideration of externalities is useful for providing an indication of damages/benefits associated with different energy options, for assessing trade-offs between different energy options, for ranking energy options and it can serve as a basis for the introduction of economic instruments to reflect the environmental costs of energy.

During the recent years in Ukraine the problem of the external cost's assessment caused by enterprises' activity eco-destructive impact has been of great attention due to increase of market influence on the economy management and attempts of the governmental agencies to operate with more appropriate indicators of the damage caused by violation of the environmental regulations, and emergencies. Approximately 80% of all types of air pollution is a result of energy processes (extraction, processing and use of energy). The electricity generation systems cause undesirable side effects, the worst being health disorders and deterioration of the environment, mainly due to the use of fossil fuels in energy production. The level of energy eco-destructive impact depends on the maintenance of the infrastructure for production, processing and use of energy. For example, the pipelines' length in Ukraine is 17,000 miles, and the level of depreciation is 70%. In the mining industry depreciation of fixed assets amounted to 47.8%, in the energy sector – 60,7%. Approximately 63% of Ukrainian thermal and water networks' pipes is exhausted. In order to reduce the depreciation of pipeline infrastructure to 50% we will need to invest at least 150 billion dollars over the next 10 years. The political instability has discouraged new investments and prevented the renovation of old infrastructures. The reduction of the environmental external cost would be inhered in these electricity

planning criteria by means of internalization policies. The latter requires the monetary values of environmental and environmental social risk.

Fossil fuels power plants emit dangerous and harmful gases (CO₂, SO₂, NO_x, etc.), which have negative impact on the environment and on human health. In addition, one of the conditions of Ukraine's integration into the European Energy Community is the implementation of the Directive 2001/80/EC on the thermal power generation companies' emission reduction to improve the Ukrainian citizens' health, but without losing the reliability of the integrated energy system.

External effects in energy production.

The extent of eco-destructive impact of power station depends on the type of fuel. Damages from natural gas-fired power plants are much lower than from coal plants, as shown in table 9.2.

Table 9.2. The main types of gas and aerosol pollutants emission of energy facilities

Fuel	Aerosols	Gas emissions	Greenhouse gases					
	Ash	Soot	CO ₂	H ₂ O	NO ₂	SO ₂	NO	CO
Natural gas	–	–	+	+	+	–	+	+
Fuel oil	+	+	+	+	+	+	+	+
Coal	+	+	+	+	+	+	+	+

Releases of air-polluting substances from energy systems are one the main threats to sustainability because of adverse impacts on the human health and ecosystems. Regulatory policy measures have been usually implemented in the industrialized regions to abate local air pollution. Direct environmental regulations typically involve emission standards and limits that are adopted through legislation procedures. Another policy strategy to address energy related air pollution is to impose externality taxes on emissions such that the tax compensates for damages caused by emissions and discharges. By doing this, environmental taxes applied on a polluter attempts to internalize a so-called external cost within ordinary market conditions. By definition, an external cost is a cost (or benefit) not included in the market price of the goods and services being produced, i.e., an externality represents a cost not borne by those who create the commodity. Taking an example from the electricity sector, if the emissions generated by a fossil-fuelled power plant contribute to costs associated with damages imposed on the society, and these costs are not taken into account in the price of electricity, externalities are introduced.

Today's energy prices do not reflect all of its effects. Those costs and benefits, termed «externalities» by economists, are therefore unaccounted for within the current energy system. As a result, consumers and those who make decisions about energy do not receive a complete picture of the energy landscape.

The externalities, as described by Ph. Lawn [1], can either be: positive externalities, or negative externalities. An externality occurs whenever the actions of one or more parties imposes costs or benefits on another party or parties and these so-called spillover effects are not fully reflected in market prices.

A positive externality is where the actions of one or more parties impose benefits on another party or parties and these spillover benefits are not fully reflected in market prices. A positive externality occurs whenever there is a disparity between the marginal private benefits and the marginal social benefits of a particular activity. In other words, it occurs whenever there are additional spillover benefits to people who do not directly consume the good in question.

A negative externality is where the actions of one or more parties impose cost on another party or parties and these spillover costs are not fully reflected in market prices. In other words, the transgressors (the parties imposing the spillover costs) are not paying the full cost of their negative spillover effect. A negative externality occurs whenever there is a disparity between the marginal private costs and the marginal social costs of a particular activity.

Energy production and use have many positive externalities to society, but they also have many negative externalities that are not reflected in market prices. As stated in *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use* [2, 3], the negative externalities can be summed up into three categories:

- damages caused by air pollution on nature, on materials and living organisms;
- damages due to water pollution, soil strain, rubbish and noise;
- climatic changes and their effects caused by the accumulation of CO₂ and other greenhouse gases in the atmosphere.

Butti, Papaemmanouil and Andersson [4] in their recent research paper found that among all the energy generation technologies, the traditional fossil fuel systems (hard coal, lignite and oil) cause the highest external costs: between 5,40 ct €2007/kWh for power generation using oil in Greece, and 14,32 ct A2007/kWh for traditional lignite power stations in F.Y.R.O.M.

In the United States, non-climate damages resulting from the use of coal in electricity generation amounted to \$62 billion in 2005, or 3,2 cents

per kilowatt-hour (kWh) [2-3]. These damages are twenty times higher per kWh than damages from electricity generated by natural gas. More than 90 percent of the damages are associated with premature human mortality. Approximately 85 percent come from SO₂ emissions, most of which are transformed into airborne particulate matter.

Seethaler, et al. [5] found that in Austria, France and Switzerland (74 million inhabitants) the health costs due to traffic-related air pollution for the year 1996 amount to some 27 billion €. This amount translates to approximately 1,7% of GDP and an average of 360€ per capita per year. In all three countries, the premature mortality is predominant, accounting for about 70% of the costs.

Environmental taxation as a tool for internalisation of external costs into the full energy production cost is considered a potentially efficient policy instrument for reducing negative impacts of energy supply and use related to air pollution, as well as global warming. In addition, the approach of merging production (or generation) cost with external cost into a total specific cost serves as a comparative indicator for evaluation of economic and environmental performance of present and future energy technologies. Consideration of externalities, where quantified or quantifiable, might be useful for providing an indication of damages / benefits associated with different energy systems, for assessing trade-offs between different energy options, and for ranking energy technologies. Finally, accounting for external costs can serve as a basis for the introduction of economic policy instruments to reflect better the social costs of energy.

Review reveals various approaches to the estimation of environmental external cost. A foreign and domestic literature review reveals various approaches to the estimation of environmental external cost as a tool to internalization these costs into the full energy production and consumption. The basic thematic areas of publication's research are presented in table 9.3.

As stated in International Atomic Energy Agency technical reports [3] it was Olav Hohmeyer and Richard L. Ottinger [13] who popularized the notion that externalities and social costs result from electrical power production and emphasized putting the impacts into monetary terms. These studies have been widely criticized for an unnecessarily naive and incorrect analysis of nuclear accidents and an inconsistent comparison with air pollution. However, they laid additional groundwork for, and inspired, the major studies that took place in the early 1990s.

As Hodas [14] describes, in 2005 the United States Congress commissioned a study from the National Academy of Sciences that would «define and evaluate the health, environmental, security, and infrastructure external costs and benefits associated with the production and

consumption of energy that are not or may not be fully incorporated into the market price of such energy, or into the Federal revenue measures related to that production or consumption» (§1 352 Energy Policy Act of 2005 (PL109-58)).

Table 9.3. The basic thematic areas of author’s research

Authors, [References]	The basic thematic areas of research
Jonathan Koomey, Florentin Krause [6]	Introduction to Environmental Externality Costs
Anthony C. Fisher, Michael H. Rothkopf [7]	Market Failure and Energy Policy
Fouquet R, Slade R, Karakousis V, Gross R, Bauen A, Anderson D. [8]	The current attempts to internalize external costs from energy production, distribution and use with special consideration for the role of the ExternE project in influencing environmental policy in the United Kingdom and the European Union
Seethaler R., Künzli N., Sommer H. et al. [5]	Economic Costs Of Air Pollution-Related Health Impacts, an Impact Assessment Project of Austria, France and Switzerland
Butti G., Papaemmanouil A., Andersson G. [4]	The evaluation of external costs of Power Production in South Eastern Europe
Bickel P., Friedrich R., et al. [9]	ExternE-Externalities of Energy Methodology
Peter Rafaj, Socrates Kypreos [10]	Using the analysis with Global Multi-regional MARKAL Model as tool of Internalisation of external cost in the power generation sector in Switzerland
U.S. Congress, Atomic Energy Agency [2-3]	An overview of methodology to measure the health, environmental and infrastructure external costs and benefits associated with the production and consumption of energy in the United States
Matsuki Y., Brondzia O., Bidyuk P., Kalnytskyi G., Gavrish E., Maslukivska O., et al. [11-12]	The using the SimPact Computer Code and Willingness to Pay survey, calculated the external costs of the morbidity and mortality of population due to the air pollutants emitted from an electricity enterprises in Ukraine

A variety of monetization techniques can be used to assign monetary values to environmental effects (damages and benefits) of electricity production. The US Office of Technology Assessment [15] has published a background paper which provides a good discussion of monetization techniques.

The damage based valuation approach uses the Willingness to Pay (WTP) concept, which is central to modern economic theory. According to the International Atomic Energy Agency technical reports [3], this approach was used by most of the seven states in the USA that recently required regulated electrical utilities to consider quantitative externality values in their integrated resource planning. These regulations were established before the spate of studies done in Europe and North

America established the damage function approach as being feasible and practical, thus eliminating the need for control cost estimates as measures of environmental damages (though estimates of control costs are still important for comparing the benefits of pollution abatement or prevention relative to the associated costs).

In according to [6, p. 1] the ExternE methodology provides a framework for transforming impacts that are expressed in different units into a common unit – monetary values. It has the following principal stages:

1) Definition of the activity to be assessed and the background scenario where the activity is embedded. Definition of the important impact categories and externalities.

2) Estimation of the impacts or effects of the activity (in physical units). In general, the impacts allocated to the activity are the difference between the impacts of the scenario with and the scenario without the activity.

3) Monetisation of the impacts, leading to external costs.

4) Assessment of uncertainties, sensitivity analysis.

5) Analysis of the results, drawing of conclusions.

In according to [9] used ExternE method for the evaluation of the external costs. The core element of this method is the so called «Impact Pathway Approach» (IPA), which consists of a «bottom-up» analysis: profits and costs are evaluated by following the path of the pollutant from the emission sources through the qualitative changes of air, soil and water to the physical effects on receptors, before this is expressed in monetary terms. Furthermore, with the ExternE method, both the emissions directly originating from energy transformation, and the ones derived from processes such as fuel preparation, construction of power stations and waste management are taken into consideration. Therefore, it concerns a «Life-Cycle Analysis» (LCA). LCA is an increasingly important tool for environmental policy, and even for industry. Analysts are also interested in forecasting future materials/energy fluxes on regional and global scales, as a function of various economic growth and regulatory scenarios. A fundamental tenet of LCA is that every material product must eventually become a waste.

The above trips to the evaluation are labor-intensive and require a modernized system of emissions monitoring from the activities of energy enterprises. Moreover the main problem of assessing the External effects in energy production in Ukraine is the incompleteness of information technology support/application for environmental monitoring. Therefore, reasonable approach for estimation of environmental external cost is 'human capital losses. In this approach, the economic value is based on the medical costs of the health condition plus the lost productivity caused by the illness or injury. The medical costs are the in-patient costs,

out-patient costs, medical prescription costs and long term care costs. The lost productivity is measured in terms of the earnings that would be equivalent to the lost time from work.

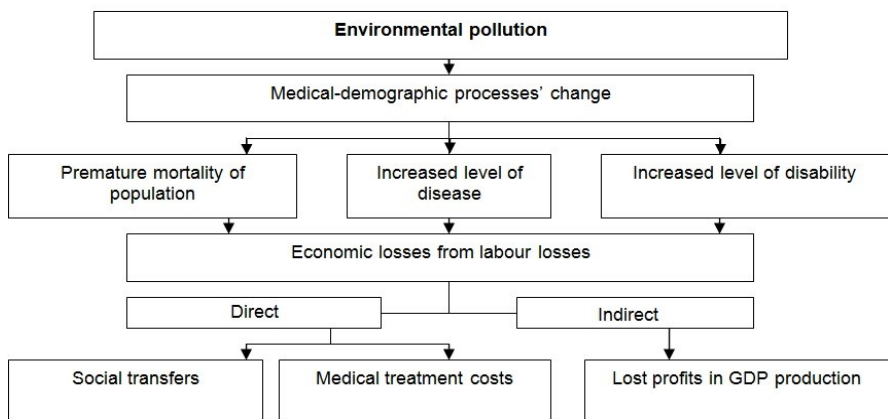


Figure 9.2. Structure of economic losses due to environmental pollution

The basis of the method used is the accounting the current and future periods' social costs on the following several organizational and economic levels [16]:

- at the macroeconomic level as the sum of three values - the medical care budgetary costs, temporary working disability payment and compensation to the families due to the breadwinner's loss from the social insurance funds, and the costs (turnout shortage or lost profit in GDP) of production for the period of illness and premature death of the younger and the working age people;
- at the household level (or from the actually patient's own point of view);
- losses from the morbidity rate increases – consist of additional costs for drugs, paid medical services and others (figure 9.2).

At present, two main areas for the human health capital economic losses' research have been formed (table 9.4) [17-20].

The first area is based on the concept of the disease burden cost, where its' direct and indirect costs are economically estimated. The direct cost takes into account the cost of treatment, care and rehabilitation of patients, other costs fall on the public health protection measures and also on social transfers (disability pension, social security payments). The indirect costs are the lost profits resulting from labor time losses.

Table 9.4. The basic methods for the health capital losses' evaluation

Method	The matter
Evaluation of human capital	Evaluation of lost earnings as a result of illness or premature death due to pollution; valuation of one year of life, determined as a ratio from dividing the average annual salary by the coefficient that characterizes the share of wages at the created benefits value; assessment of the tax revenues loss due to lower profits resulted from the loss of working time
Differentiation of wages	Assessment of the differences in wages in the areas with different levels of pollution
Contingent valuation	Establishing the price people are willing to pay to avoid pollution based on surveys
Costs of disease	Estimation of lost working days taking into account medical and related additional costs due to pollution
Avoiding expenses	Evaluation of the cost on disposal activities or reducing the impact of pollution

The second is based on the human life value concept and is based on the valuation of the human life itself, excluding the cost of healthcare and the social transfers and the losses related to the shortfalls products. This value, for example according to [19], can be calculated by the formula:

$$PL_t = S_t \cdot (L_t - A) \quad 9.1$$

where PL_t – the cost of lost years as a result of death of a person at the age A in the year t ;

S_t – the value of a statistical life in the year t ;

L_t – the life expectancy in the year t ;

A – the age of the deceased person.

Value PL_t characterizes the economic cost to society resulting from the premature death of a person who did not reach the average life expectancy. Methodological approaches to assessing the value of statistical life are divided into two groups:

1) the human capital evaluation methods;

2) the willingness to pay evaluation methods (contingent valuation).

Sociological and statistical studies show that people' assessment of their life' costs often corresponds to the size of annual earnings multiple of the size of the average life expectancy. Valuation of the lost years of life has humanitarian nature, as it is designed to reflect the value of every life. However, in the majority of the above approaches valuation of the human health capital loss is made excluding the time factor and reducing the value of costs and revenues to one time point, or the value of annual losses is forecasted based on the hypothesis of a zero growth rate.

It should be noted that the methodological basis for determining the people health capital loss due to eco-destructive impact of energy sector are the above observed approaches.

The recent researches in environmental epidemiology and health risk analysis, particularly Revich [20], have shown that the magnitude of environmental factors influence, which determines deteriorating health equity, can reach in some cases up to 30-60%. According to the World Health Organization (WHO) 20% of economic losses from increased morbidity, disability and mortality are due to poor environmental quality. The corresponding assessments, given by Revich [20], indicate that about 7% of mortality among the urban population (approximately 16 thousand death cases for the 15 million people) living in the most polluted areas is due to the influence of polluted air. Thus, states that the loss in the year t is equal to:

$$Ue_s = C_e \cdot (L_t + D_t + M_t) \quad 9.2$$

where L_t – the total loss from the population morbidity in the year t ;

D_t – total loss due to disability in the year t ;

M_t – economic losses resulting from premature mortality of younger and working age population in the year t ;

C_e – environmental factor that corresponds to the share of the health capital losses due to the environmental pollution.

According to the WHO data and research results presented by Revich [20] formula (9.2) can be specified the following way:

$$Ue_s = 0,2 \cdot (L_t + D_t) + 0,07M_t \quad 9.3$$

Ukraine's energy sector is one of the major air pollutants. The energy sector produces about 60% of total pollutants emitted to the atmosphere. Taking into account the impact of the sector on the level of air pollution, energy ratio (Cen) is equal to 0,4 and formula (9.3) can be specified as follows:

$$Ue_s = (0,2 \cdot (L_t + D_t) + 0,07M_t) \cdot 0,6 \quad 9.4$$

Let us consider the calculation matter of each structural formula (9.3) component.

The proposed method «human capital» losses calculation provides a means for regular quantitative assessment of the pollution impact on human health and enables consideration of these results when:

- calculating integrated sustainable development indicators characterizing waste capacity of the economy;
- forming the optimal tax policy based on taking into account economic consequences of the energy sector eco-destructive impact as well as the social costs;
- justifying the amount of losses compensation to the population due to the energy enterprises environmental pollution.

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9.3. Innovative factors of the ecological entrepreneurship

Marekha I.S.

Global economic tendencies prove that ecological issues are more and more becoming business object. In this connection, investigations of entrepreneurship structures in environmental activity are open to discussion. In the context of environmental globalization, innovative forms of ecological entrepreneurship are of crucial importance for providing sustainable and efficient growth of the economic and environmental systems. But even in special investigations [1-2] entrepreneurship is likely to be fragmented within the definite types of ecological activities and is not a separate research direction. Therefore, there is a need to remove the lack of investigations in this sphere and to study innovative character of ecological entrepreneurship in this paper.

The Organization for Economic Cooperation and Development (OECD) defines an ecological entrepreneurship («green» business) as an activity for producing of goods and providing services to estimate, prevent, limit, minimize or eliminate the ecological damage to water, air

and soil, as well as problems-related to waste, noise and ecological systems [3]. This activity includes cleaner technologies, goods and services, which reduce environmental risk and minimize environment pollution and utilization of resources.

Generally, ecological entrepreneurship has the following features [4]:

- the target setting is to harmonize relations between human and nature, to protect the environment;
- principle activity is a production of goods, implementation of works and provision of services for special environmental protection;
- linkage of activity to the rational use, maintenance, renewal and protection of natural resources, ecological safety;
- criterion of activity – not wasteful in production processes;
- basic direction of development is an ecological quality of products, works, services;
- developed scientific component of ecological activity (use of the results of modern scientific researches, methods, instruments, technologies);
- functioning of economic entities of any legal form of ownership and management;
- ecological education and culture of personnel;
- functioning of ecological products, works, services market;
- activity within the framework of current legislation, including environmental;
- introduction of ecological management with consideration for the specific nature and need for ecological production.

We propose to investigate ecological entrepreneurship from three points of view:

- as an economic and ecological concept;
- as a method of resource efficient development;
- as a way of special mental activity.

By ecological entrepreneurship, we understand economic relations which occur between government and society on occasion of sustainable use of natural resources. As an ecological concept of sustainable development, ecological entrepreneurship determines alternative use of natural resources and is aimed at reducing ecological pressure. As an economic concept, ecological entrepreneurship satisfies the needs of society in natural resources in a way that enhances economic efficiency of the economic and environmental systems being an integral part of sustainable development issues.

As a method of resource efficient development, ecological entrepreneurship implies creating the most efficient combinations of production agents aimed at their optimization and obtaining positive economic outcomes. By its ecological nature, it is aimed at preventing or solving

ecological contradictions (i.e. natural resources exhaustion), ecological problems (i.e. natural resources depletion), and ecological crisis (i.e. natural resources destruction). The most distinctive feature of ecological entrepreneurship should be implementation of innovations on a regular base what distinguishes it from other businesses. The businessmen being interested in ecological entrepreneurship as an innovative business model will be able to compete whether on a national or cross-country scale.

As a special way of thinking, ecological entrepreneurship is a mental process of reflecting reality shaping ecological attitude in a definite society. Being a special way implies eco-attributive outlook referred to all business entities which have oriented their business initiatives into resource saving framework. Being a productive by its nature, this type of thinking distinguishes itself by a highly innovative level of the generated ideas. It helps to exploit resource-efficiency potential in a direction of resource-melioration, resource-shifting, and dematerialization. In addition, eco-attributive outlook is tightly connected with resource culture and determines ecological type of economic growth (resource-wasteful or resource-efficient) in a definite cultural environment.

Under current conditions, ecological entrepreneurship is determined by ecological values and ecological culture in particular. Nowadays, ecological values and ecological culture are innovative factors of doing green business. The ecological values can be generally defined as the level of ecological, social and economic benefits that the space, water, minerals, biota and all other factors which make up natural ecosystems provide to support indigenous live forms, humans in particular [5].

Value-oriented pro-European ecological development of Ukraine needs systemic transformation of the business from an existing anthropocentric growth to an eco-centric one. It has been demonstrated that ecologically oriented business is a part of economic growth as well as ecological values being incorporated into a form of ecological culture could be reasonably employed these days as a factor of production. Fundamental economic issues of ecological culture assessment were enlightened in [6], where an author relates interdependently sustainable development with ecological culture of production. Some writers have included societal factors into ecological culture consideration [7, 8]. The idea of ecological culture importance for preventing ecological crises has been developed in the work [9]. The problem of ecological culture incorporation and appropriate value-based economic development raises the question of axiological (derived from Greek αξία – value) natural resources business-management.

In this study, we attempt to examine ecological values in the context of the ecological entrepreneurship framework. The main working

hypothesis of the article is to improve decision-making performance based on ecological values appreciation. The estimation of an ethical side of the technological progress and moral responsibility for restoring natural processes are of crucial importance nowadays.

In ecological literature, there are two theoretical approaches to understanding economic development [10]. One approach is based on a premise that economic values are much more important than ecological ones. Such approach is commonly understood as economically-oriented, or technocentric one. The main presumptions of the above mentioned approach are: profit is the biggest value; exploitation of natural resources brings a good profit; a human dominates nature; there is a severe competition for natural resources which are at disposal of private investors. Another approach focuses primarily on the supremacy of ecological values over economic ones. In this case, great attention is paid to the following issues: protection the nature from destroying is the highest public value; humankind is a part of the nature; natural resources and ecosystem services are a public good; the need for cooperation as a way to solve a problem of limited endowments of the natural resources. Our search for economic explanation of ecological values enables us to tackle the second approach.

An important part of our efforts in this study is to bring more attention to: a) classification of ecological values; b) incorporation of ecological values into a form of ecological culture; c) operation of ecological values as a factor of ecological entrepreneurship and its comparison with traditional agents of economic growth; d) regarding ecological values from marginal utility function point of view; e) framing ecological values in global resource economics; f) developing generation-based approach to ecological entrepreneurship.

In this study, we don't strive to deep into philosophical understanding of the term «value». On the other side, we propose to identify ecological values with ones generating utility for a definite society.

Classification of ecological values is an independent task for the economic theory. We propose to classify ecological values using the following classification criteria:

1. Incorporated form:
 - 1.1. Natural values: natural resources.
 - 1.2. Medical values: health.
 - 1.3. Socially beneficial values: ecosystem services.
 - 1.4. Consciously generated values: ecological justice, responsibility.
 - 1.5. Landscape values: parks, sea beaches.
 - 1.6. Humanitarian values: ecological education.
2. Stratification level:
 - 2.1. Global use: ozone layer, atmospheric air, space resources.

- 2.2. Country use: country's natural resources.
- 2.3. Regional use: regional endowments of natural resources.
- 2.4. Local use: parks, forest belt, local beach.
3. Tangibility:
 - 3.1. Tangible: natural resources endowments, balneal beaches.
 - 3.2. Intangible: ecological responsibility.
4. Ability to meet the needs:
 - 4.1. Biological needs: air, drinking water, timber.
 - 4.2. Economic needs: mineral and fuel resources, biomass.
 - 4.3. Social needs: forest for resting.
 - 4.4. Aesthetic needs: picturesque landscape.
 - 4.5. Ethical needs: ecological justice.
5. Appreciation level:
 - 5.1. Appreciated values: clean drinking water.
 - 5.2. Pseudovalues: dirty drinking water.
 - 5.3. Anti-values: cut forests, destroyed soil.
6. Economic assessment techniques:
 - 6.1. For natural resources: cost-benefit analysis, rental and reproductive methods.
 - 6.2. For ecosystem services: transportation costs method, hedonic price method, contingent evaluation studies.

Ecological values as a defining element of ecological culture could be reasonably employed as a new factor of ecological entrepreneurship. It should be mentioned that ecological culture is quite different from traditional agents of production (labor, land, capital, business skills) which can be characterized as follows:

- firstly, if traditional factors are not employed in society it fails its economic growth;
- secondly, a deficit of traditional factors reduces economic growth and causes economic recession;
- thirdly, marginal costs of production are directly correlated with marginal economic growth.

Specificity of ecological culture as a factor of production is revealed in three key aspects:

- firstly, if there is no ecological culture in a definite society it doesn't necessarily prevent it from economic growth;
- secondly, the society can absolutely ignore ecological culture and increase its economic growth to some ecological measure due to the deficit of this one;
- thirdly, ecological culture and economic growth can be inversely correlated.

With relation to the economic system, ecological culture is an endogenous factor. Moreover, it is an intangible factor of ecological entrepreneurship. It has a cumulative impact on economic development. It is rather a scarce factor because of its hard renovation. It has the highest ability to meet needs of the future generations.

Ecological values, framing as ones generating public utility taken from natural resources and ecosystem services, are different from traditional factors of production in part of unreality of application to them a principle of diminishing marginal utility. This principle states that if the consumption of a good increases, its marginal utility decreases. But there is not the same situation with the consumption of natural resources. As future generations shall experience in future a lack of natural resources because of their current overexploitation, there is an effect of increasing marginal futuristic utility of natural assets and ecosystem services.

Global efforts dealing with undertaking human economic and food security have become tremendously important over the past decades and are now in widespread use in terms of sustainable development concept. The firstly proclaimed principle of sustainable development was tightly connected to generational one: «meeting the needs of the present without compromising the ability of future generations to meet their own needs» [11]. It should be mentioned that human needs are regularly met with natural resources. With the recognition that economic security is a no-danger present activity to future societies, the great efforts to include strategic natural resource assessment into policy-making processes are now taken around the globe.

The ecological needs of humankind are being transformed over the past century. People are using more of the Earth's natural resources than ever before, seriously harming the environment and placing the well-being of future generations at risk. Consequently, meeting the needs of the present and future generations should be, first of all, developed on eco-equity principles. The idea of ecological equity is considered to be employed within either one generation («intra-generational» equity) or several generations («inter-generational» equity) [12]. The working definition of the term ecological equity is: eco-equity is a birth right given to all generations to be equal users of global resources, natural resources in particular. This mostly prevents from economic and social discrimination in resource consumption activities. Moreover, it develops understanding on better appreciation of future generations against present ones resulting from time-expired natural resources and escalating their marginal consumer value respectively. It is equally important to reflect economic issues coming from the above mentioned definition. Obviously, ecological equity demands greater economic productivity. To reduce pressure on basic natural

resources, such as drinking water, land, minerals and fuel, we should use them economically.

Using terminological definition of sustainable development proposed by the World Commission on Environment and Development [11] as a baseline in this article, we develop generational approach to ecological entrepreneurship based on such key assumptions. First, all humankind needs can be generally divided into three groups: biological, manufacturing, and cultural ones. Second, the ability of natural resources to meet the needs of future generations could be defined through accounting their quantitative parameters and qualitative ecological properties (as far as they are reproducible, substitutive, exhaustible, vulnerable to climate fluctuations etc.). The proposed classification of natural resources is rather convenient for sustainable consumption purposes. As the concept of sustainable development is primarily concerned with preventing ecological risks, resulting from natural resources consumption, the above created classification is a good tool for precise identification of the eco-needs being at risk of global depreciation.

Generation-based approach to the ecological entrepreneurship assumes that classification of the global natural resources needs reliable identifications and predictions for future generations. In this article we follow the view of futurologist who proposes to name upcoming generations based on the Greek alphabet starting from the letter Alpha [13]. Each next generation is going to be replaced by the followed one over 28 years which is the mean age of mothers at first child's birth [14]. We have chosen the year 1987 which is sometimes cited as a birth year of sustainable development to be the future generations' reference point. Based on mathematical calculations, we suggest the following formalization of future generations: Generation Alpha (2016-2044), Generation Beta (2045-2073), Generation Gamma (2074-2102).

The classification of future generations is a core stone for classification of natural resources. The results of eco-futuristic classification were illustrated in [15].

According to the eco-futuristic classification, four groups of natural resources are possible:

- natural resources with marginal futuristic ecological value, and are of the first-turn priority to be saved (plants, drinking water, oil, natural gas, uranium ore);
- natural resources with low futuristic ecological value, and are of the second-turn priority to be saved (seafood, coal, wood, aluminum ore, biomass);
- natural resources with high futuristic ecological value, and are of the third-turn priority to be saved (clay, glass material, cement material);

- natural resources with the best futuristic ecological value, and are of the forth-turn priority to be saved (wind power, geothermal power, solar power).

The findings indicate that prevailing part of natural resources belong to the Generation Gamma. It means that natural resource endowments are quite enough to meet the needs for three upcoming generations. But, nevertheless, food resources are at risk of exhausting which is going to provoke ecological conflicts within generations. One more important outcome can be draw for the ecological entrepreneurship: meeting the needs of future generations on eco-equity principles is possible due to implementation of mono-cultural and multi-cultural resource-saving tools (table 9.5).

The task of economic stimulation for the ecological entrepreneurship can be approached from two directions: tax or preference regulation (table 9.6).

Table 9.5. Selection of Resource-Saving Tools according to the Eco-Futuristic Value of the Natural Resources (author’s approach)

Natural resources	Resource-saving tools	
	Mono-cultural	Multi-cultural
	Eco-equity	
	intra-generational	inter-generational
Marginal futuristic value	Direct saving	Substitution
Low futuristic value	Conservation	Conversion
High futuristic value	–	Regeneration
Best futuristic value	–	–

Table 9.6. Selection of Economic Stimulation Tools according to the Eco-Futuristic Value of the Natural Resources (author’s approach)

Natural resources	Economic stimulation tools	
	taxes	preferences
	Eco-equity	
	intra-generational	inter-generational
Marginal futuristic value	Damaging-preventive ones	Securing ones
Low futuristic value	Curative ones	Energy-saving ones
High futuristic value	Economically inefficient	Resource-saving ones
Best futuristic value	Economically inefficient	Climate-saving ones

In this research we suggest to analyze such innovative factors of the ecological entrepreneurship as ecological values and ecological culture. We hope to stimulate an academic debate about this performance. In addition, we assume that appropriate economic regulation serves as a

great contributor to ecological security of the present and future generations. All environmentally related economic instruments should be reconciled with intra- and inter-generation requirements for sustainability. The elaboration of adequate economic mechanism of enhancing environment is a subject for future research.

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9.4. Efficiency estimation of innovation projects eco-economic development

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Strategy of social and economic development of Ukraine in accordance with the modern requirements ought to be as a transition from the implementation of some specific and even integrated environmental protection measures for the establishment and implementation of the greening social production concept and other areas. Thus, it has been scientifically proven the strong mutual conditionality presence between achieved level of nature rationalization, dynamic performance and environmental quality factors of the natural resource potential and the possible prospects of the economy. To have positive tendencies and results in this area is impossible without accelerating the innovation and greening investment policy pace and the creation of current system of the resource development and conservation stimulation, along with a review of the laws and their adaptation in accordance with the national strategy for sustainable development and environmental protection.

For the environmental innovation projects that are focused on ecological issues, it is essential to involve large investments, while the economic effect of their implementation is often less than that of the innovative projects introduction in other business activity areas. Current economic mechanism for determining the feasibility, innovation selection and funding, justification for investments in environmental protection measures, unfortunately, does not include the specific environmental innovations, but attracts other types of innovation.

To optimize the use of financial resources and increase the environmental and economic capacity of eco-innovative regional development projects the further study of the distribution modeling of financial resources is required.

The term «environmental innovation» has been proposed and presupposes the result of creative activity that aims to develop, study and implement innovations that can be presented in the form of new technology, product, method or production, form, etc., that indirectly or directly reduces the impact of ecodestructive on both production and consumption on the environment and solving environmental problems. In our view, it is advisable to include to ecological innovations:

- the development and implementation of new processes and updated technology development cycles and coordinated development of

the functional chain from resource extraction and processing of waste and to use possible reproduction of these resources;

- the development and application of new resource-saving technology that involves the development and implementation of low-waste and non-waste technologies, such as energy saving and the development of technologies that should ensure the comprehensive development of available natural resources and biotechnology;

- the development of new areas and expanding the existing ones, taking into account the environmental safety of the population and production;

- the development and production of environmentally friendly products, and the creation of new facilities for their production and development options of new and renewable energy sources;

- new organizational forms introduction in order to improve organizational and territorial structure of potentially hazardous industries and decrease their environmental hazard;

- the formulation and implementation of new approaches to the definition of greening through the introduction of compulsory environmental education.

It is proposed to classify environmental innovation under the scope of implementation as follows:

- 1) technical (new ecologically or environmentally friendly products, technologies, etc.);

- 2) organizational (new methods and/or forms of companies organization that aim to reduce environmental hazards);

- 3) social, namely various forms of creative activity stimulation to promote the greening production and consumption.

According to the defined classification of the features the environmental classification of technical innovation has been summarized. Relevant to the importance in the economic development of environmental innovations it has been offered to classify them as basic, the improving and pseudo-innovations ones [5].

Basic innovations realize fundamental innovations and inventions are the basis for the new areas and the formation of new generations of equipment and technology. The most significant feature is their unpredictable ecological consequences for the existing level of science and technology, as the environmental impact of their implementation in one area can affect the neutralization of the negative consequences in another. Basic innovations are very rarely used but greatly influence the processes of acceleration of scientific and technological progress.

Improving innovations have become the most common ones, because the effect of the economic mechanism should be directed on them. In the process of their implementation it is possible both to predict the consequences and give them an economic assessment using the methodology for determining losses that have been caused by the environment or are prevented, as a result of certain environmental innovation.

Pseudo-innovations are aimed at partial improvement or modernization of outdated equipment and technology, and only partially prevent pollution that is caused by the environmentally dangerous technologies, obsolete production technology and consumer products, while they do not promote the rational use of natural resources or the development of scientific and technological progress.

Ecological innovations should be considered in three areas, namely object, when the object is the result of scientific and technical progress; as well as process and process-investment.

Ecological and innovative development is proposed to be seen as a complex process that includes the development, distribution, implementation, commercialization and utilization of new consumer values, i.e. commodities, machinery and so on. The presence of the last stage is a distinctive feature of eco-innovation process from conventional innovation. Moreover, within the investment process-innovation approach the innovation is characterized as the transition of investment in innovations that rise to the concept of eco-innovation activity and eco-innovation projects. Their peculiarities can be identified as a large scale and long-term implementation.

The principles of eco-innovation, in our opinion, ought to be defined as:

- organic line of scientific and technological progress needs environmental, society social and economic development;
- optimal combination of centralization and decentralization in the management along with democratization and the development of self-government in environmental developments;
- primary state support of scientific research, providing the assistance in search for critical environmental and economic problems of territories by choosing priorities of eco-innovation and joint efforts to ensure their implementation;
- balanced development of scientific and applied research and development through direct state support and economic incentives for enterprises' innovation initiatives;
- support of the competition in eco-innovation and provision of anti-monopoly regulation for improving the innovation spread;

- promoting the scientific balanced development, educational and, of course, the production potential in eco-innovation sphere;
- equality and diversity of all forms of innovation and small business development in the sphere of nature;
- to promote and maximize the use of existing opportunities for international cooperation in the field of rationalization and environmental development through joint research and development with the subsequent free transfer or acquisition of nature users of patents and licenses for environmental innovation.

As a synthesis criterion for assessing the environmental and economic benefits of nature at the enterprise level it is appropriate to use the value of saving socially necessary environmental costs per unit of commodity products and consists of cost saving for natural resources and cost of labor and materials for the protection and restoration of the environment, compared by regulation, which will enter environmental dimension to the traditional cost indicators and create effective incentives for environmentally sound management [7].

In our opinion, the criteria of saving the social environmental costs of production should be used to assess the nature of effectiveness because it meets the objective economic laws, has mathematically and economically unambiguous interpretation, takes into account the actual cost production on nature renewal and natural consumption upgrade; on its based on the regulatory framework can be established for specific companies, particularly important in terms of financial autonomy and market enterprises independence. Thus, the necessary social and environmental costs are recognized as part of compliance with permissible norms of nature (installed MPC, VAT MPD) and determined as the amount of company's expenses related to the use of natural resources and the costs for providing the required quality of the environment.

According to the statement that all environmental costs under adherence to social norms in production are socially necessary, these costs should be public ecological and economic requirements for eco-economic performance of a particular company that are required by the state, region and society. Obviously, the environmental costs are the basis for the definition of rationality (efficiency) of nature use, the natural consumption and conservation. So the issue remains relevant as for the normative definition of environmental costs to overcome technological impacts of social and economic development.

The environmental costs of production. The following principles comprise the basis of ecological and economic indicators assess of the enterprises' economic efficiency of Natural Resources:

- environmental protection is objectively a necessary part of the process of expanded reproduction, hence its objects - natural resources that are used as means of production, articles and products of work, is active indices forming production cost of products at the micro level; and the gross national product and national income – at the macro level;

- environmental costs are the sum of expenses on attracting natural resources to production and costs for environmental protection and natural resources restoration, and are objective peculiarities of different industries and is the basis for the «ecological value» of the product to the cost of natural revival resources.

It is essential to take into consideration the environmental costs that are under adherence to social norms when there is a demand for products; these costs should be public ecological and economic standards of efficiency, advanced by the state, region specific society of the enterprise. Obviously, the environmental protection costs are the basis for the definition of rationality (efficiency) of nature use, consumption and conservation.

Based on the above mentioned, the environmental costs of production EC can be presented as following:

$$EC_n(t_n) = \sum_{i=1}^{In} \left(C_i^{BP}(t_n) \cdot H_i^{BP}(t_n) + C_i^{OC}(t_n) \cdot H_i^{OC}(t_n) \right) \cdot OB(t_n) - \sum_{i=1}^{In} E_i^p(t_n) \cdot V_i(t_n) \rightarrow \min \quad 9.5$$

where C_i^{BP} – is the cost of industrial consumption of i -th resource in the t -th period of n -th project UAH per unit of resources;

$H_i^{BP}(t_n)$ – is the standard of industrial consumption and natural resource first in the t -th period of n -th project unit of resources to ton of product;

C_i^{OC} – is the cost of protection and restoration of the i -th natural resource in the t -th period of n -th project UAH per unit of pollution;

$H_i^{OC}(t_n)$ – is standard pollution from production and consumption of natural resources first in the t -th period of n -th project unit of pollution to ton of product;

$OB(t_n)$ – is a production volume, t ;

$E_i^P(t_n)$ – is cost of i -revival natural resource in the foreseeable t -th period of n -th project UAH per unit of resources;

$V_i(t_n)$ – is reduced amount of i -th resource in the t -th period of n -th project unit of resources.

Value determination of normative and actual environmental costs should precede the development of natural indicators of consumption of natural resources, which are widely used in the scientific literature: land consumptive, water-retaining, volume of atmosphere, pollution-prone of products, etc.

According to current market laws and the prices formation laws in the mining industry the norm for socially necessary costs should express the maximum consumption of natural resources and the marginal cost of funds and work on conservation unit minerals in this pool at a certain mode of production is produced. This will put to the high competitive level the economic environment of the companies, located in different environmental conditions, and encourage them to conduct environmental activities, providing them with funds. The establishment of standards of environmental costs at a level limit for coal companies contributes to seizure in public revenue environmental profit of the company which is independent of the staff labor contribution.

In order to rationalize the distribution of financial resources available, in the paper it is proposed the use of scientific and methodical approach to environmental-economic evaluation of the efficiency of environmental management for special territories, which provides the determination of the economic potential of n -th eco-innovation project, taking into account the environmental cost of production:

$$EP_n = \sum_{t_n=1}^{Tn} \frac{(P(t_n) - EB_H(t_n) - B(t_n)) - P(t_n)}{(1 + d)^{t_n}} \rightarrow \max \quad 9.6$$

where $P(t_n)$ – valuation of innovative results obtained by the project in the t -th period for n -m project;

$EB_H(t_n)$ – a set of project costs for the use of natural resources and environmental protection costs except the cost revival resources in the t -th period (environmental cost of production) for n -m project;

$B(t_n)$ – the total production costs for innovative projects in the t -th period, other than the costs;

$P(t_n)$ – a set of taxes on income for innovative projects in the t -th period;

(t_n) – the duration of the life cycle of the n -th project periods;
 (I_n) – the number of the resources which are calculated;
 d – the discount rate that takes into account the risks, peculiar to innovative projects.

The proposed methodical approach makes it possible to determine the economic potential of the innovation projects which implementation is planned for certain industrial coal mining area, and has separated ecological and economic component implementation and states that scientifically based environmental product price must include: standardized consumption of natural resources consumed in the production process; normalized cost of funds for the preservation and restoration of territories and the resulting effect (extra income) from the implementation of cost [8].

Ecological rent. Natural resources that meet the requirements of quality, help to create the necessary public products with the least material, labor and environmental costs and creates conditions for additional income. This additional income is rental character because it provides different levels of productivity and the ability to obtain additional income and can, in our view, be called ecological rent. Reflection rental value of natural resources in product value in our opinion ought to be considered as:

$$R_b(t_n) = EP_n - EC_n(t_n) \quad 9.7$$

where EP_n – indicator of economic potential of the n -th eco-innovation project;

$EC_n(t_n)$ – a set of project costs for the use of natural resources and environmental protection costs except the cost of revitalized resources in the t -th period (environmental cost of production) for the n -city project.

Materialized labor costs are advisable to supplement with the assessment consumed in the natural resources production, which value is determined by the amount of damage. The cost of labor and materials for the formation of an acceptable ecological environment has become part of the production costs. Thus, the production cost mining companies include revitalization costs, such as: the reclamation, maintenance of cleaning equipment and so on. The costs associated with compensation for existing loss (nature renewal) and the prevention of possible damage (conservation). This type of expenditure presents the

traditional costs and labor costs, and they should be considered when calculating the environmental cost in accordance with the existing practice of grouping costs in the mining industry and the elements of expenditure.

The natural capital profitability. The current system of payments for natural resources and environmental pollution in Ukraine, designed to perform economic functions of compensation for ecological and economic damage, environmental compensation costs and stimulate environmental activities, is far not perfect, and economists estimate that only 3-5% offset of real losses and cause the environmental damage potential [8].

Funds from collecting payments have recently lost thrust, their volumes do not allow conducting the conservation measures necessary for financial and material resources. Licenses granted the right to use natural resources do not reflect the real cost involved in the production of natural resources. The consequences of this situation are prolonged and «free operation» of environmental capacity, lack of incentives for conservation work and the introduction of little waste technology against the background of negative ecological processes that strengthen the existing raw material orientation of the Ukrainian economy [10].

Ecological and economic assessment of the nature effectiveness ought to be based on the proposed model for the measurement of natural capital and profitability metrics that will be based on the proposed criteria and take appropriate management decisions on the choice of environmental protection directions and volume measures of necessary funds, allocated for formation of environmental protection in the region of influence of production of coal enterprises.

Profitability reflects the value of natural capital profits, that comprises the cost per unit of natural resources used in production. This figure corresponds to the requirements of environmental management and savings while preserving environmental resources. Thus, the increase in commodity products obtained by reduction of the loss of minerals, its complex processing, increasing commodity products from mining waste leads to increase profits and tax reduction on natural resource, and thus to increased profitability. Reducing the natural capital involved in the process of environmental management, due to the introduction of rational schemes and mining technologies, various preventive measures that help to reduce nature consumption and implementation low waste technologies provide reduction of the natural capital value that leads to a greater return on natural capital.

The next step is to determine the natural capital profitability which can be done by proposed economic efficiency index of n -th project, that reflects the value of environmental and economic performance of received as a result of the costs to restore natural resources as the ratio of additional environmental profits, due to the quality of natural resources used in t -th period for n -m project (ecological rent) from the sale of eco-innovation projects to total environmental costs associated with environmental management and revitalization of resources (environmental cost):

$$e_n = \frac{\sum_{t_n=1}^{T_n} \frac{Re(t_n)}{(1+d)^{t_n}}}{\sum_{t_n=1}^{T_n} \frac{EB_n(t_n)}{(1+d)^{t_n}}} \rightarrow \max R_B(t_n) = EP_n - EC_n(t_n) \quad 9.8$$

So, to meet socially necessary needs of the special territories the local government has define the priority funding of projects revitalization that should be based on maximizing the rate of additional environmental profits (ecological rent to restore the natural potential, which is the difference between the maximum possible profit (economic potential) and the index of the minimum cost of natural resources (environmental cost) in eco-innovation project, while potential investors have to take for the basis the management decision that will maximize indicator that demonstrates profitability involved in natural capital that is the cost-effectiveness of investment.

Thus, the evaluation of environmental assessment of production management and economic efficiency in coal mines is based on the account of two of the determining factors: involvement of the natural resources inevitability in the mining and coal processing method due to the objective features of existing technologies; the market, regional, sectoral, time and individual factors impact that require additional environmental costs for environmental protection and natural resources revitalization.

The methodical approach of integrated environmental and economic assessment of the nature largest return on natural capital efficiency, which is suggested defining as the environmental rent ratio from sales of coal and coal wastes (hydrocarbon waste) to the cost involved in the natural capital mining process, allows determining the most attractive ones in terms of assessing the economic potential of specific eco-innovative projects that ought to be used in assessing the priority for investments to revitalization projects in a foreseeable period.

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9.5. Financing of eco-oriented projects: theory and practice

Gumenna I.G., Tiutiunyk I.V.

The aggravation of ecological situation in the world and Ukraine, in particular, inspires to provide complete, timely and reliable financing of eco-friendly activity. Significance of this issue enforced by the fact that despite the branchy system of financial resources at the local level

financing of environmental activities nowadays is carried mainly through the own capital of the enterprises, institutions and organizations; expenses from local budgets. The results of conducted analysis [3-7] let define the following reasons for such situation:

- regular qualitative and quantitative changes in the mechanism and instruments of financial regulation of regional environmental activity;
- imperfection of the legislation regarding national security, in other words the current legal framework does not regulate completely the responsibilities, competencies and powers of local governments on the formation of regional and national policies for sustainable development in Ukraine;
- small sum of taxes and duties for using natural resources and environmental pollution;
- absence of the general unified approach for selection of financing instruments for the regional development;
- unreasonable policy of subsidizing and transfer;
- ignoring historical, demographic, climatic and resource features in financing the budgetary programs.

So, that current mechanism of state regulation of environmental policy does not comply with the principles and criteria of financial stimulation of environmental development. The main disadvantage of the mechanism is focus mainly on direct financial impact methods through direct budget funding or subsidies from the budget to specific business entities.

In European practice public-private partnership (PPP) has been widely known as the form of financing ecologically oriented activity. As the international experience shows, the public authorities do not act as the main initiator and investor of funding the environmental activities. They only create a favorable environment for the successful implementation of such activities, while providing support to the private sector [4]. Such interaction between public authorities and the private sector that takes place in the form of PPP [2; 4; 6; 13; 14; 16-17], can be successfully implemented both at the national and regional level. It is related to the redistribution of financial flows for the specific areas, as well as the feasibility of expanding the range of people and organizations interested in implementing programs. Moreover, it is the regional level that under modern conditions mainly ensures the successful implementation of the national strategy for social and economic development. PPP can greatly contribute to overcome the crisis, in particular, providing the sustainable development of major industries. Furthermore, PPP as the method of funding environmental protection interrelates naturally with princi-

ples which should be the basis of effective process of financing ecologically oriented development of the region – the principle of potential ability and the principle of environmental and economic adaptability of the region.

The principle of potential ability assumes the differential approach to the financing of environmental development depending on region' potential for self-financing its development. In the regions with high potential in comparison with other regions of Ukraine, the main sources of environmental activity financing should be investments and own funds of the enterprises. On the contrary, eco-friendly actions in regions with the low eco-friendly potential should be financed with the inter-budgetary transfers and money from the Natural Guard Fund. This principle is considered to be the basis of the inter-budgetary equalization. It is explained by the reason that taking account of region potential will promote:

- increasing the transparency of distribution of budgetary funds;
- ensuring the correspondence between region's capabilities for self-financing its development and the volume of attracted funds.

The principle of environmental and economic adaptability of the region provides the following results: a dynamic reaction of public and local authorities, business activity on changes in the external and internal environment of the region; and effective process of strategic management of financing the environmentally-oriented development of the region.

The process of environmental and economic components' balancing at the regional level, in our opinion, should be based on the approval of the two main aspects of regional development. They are: financial capacity to attract and use funds, implemented in the principle of potential ability; the level of environmental pressure on the region, reflected in the principle of environmental and economic adaptability. They should serve the basis for determining the level of inter-budgetary transfers as one of the main financial instruments for financial equalization and stable region functioning.

Taking into account the above mentioned and considering social and economic value of PPP for society in order to its further implementation in national practice of financing environmental activities and projects, it is important to analyze its legal framework.

In the Public-Private Partnership Act of Ukraine public-private partnership is defined as «cooperation between the state Ukraine, Crimea, local communities represented by the relevant public authorities and local governments (public partners) and entities other than government and public utility companies or individuals – entrepreneurs (private

partners), which is based on the contract in the manner according to the Law and other laws» [1].

There is a legal framework for the development of certain forms of PPP in Ukraine. It includes the Constitution of Ukraine, the Civil and Commercial Code of Ukraine, legislative and regulatory acts.

Mentioned above regulatory acts define features of using various mechanisms of cooperation between the authorities and private businesses. They depending much on: the object that is passed to the private partner, property power, obligations of the participant, principle of shared risk between the partners, responsibility for various types of work.

In practice the main goal of public authorities while doing PPP is considered to be an effective transfer of risks to the private partner. The risks are related with the planning, construction, financing and management of the current activity of the enterprise. PPP gives the public and private sectors possibility to distribute risks while implementation the joint project. It provides mutual support in order to ensure the benefits and advantages of the project for both sides.

As the numerous studies show [18; 10-12; 5; 15], the majority of scientists, while assessing the effectiveness of investment projects based on principles of public-private partnership, focus on the following types of risks: technical risks, default risks, financial risks, demand risks, political and legal risks, – leaving aside no less important component – environmental risk (figure 9.3).

Existence of this type of risk can lead to the following consequences:

- on the one hand, an environmental risk, took place in region, will lead to the essential reduction of net present value of projects and deter investors to make additional investments in such objects;
- on the other hand, non-accounted environmental risks will lead to the subjective assessment of the project effectiveness and the overestimation of future revenues in future.

Taking into account plenty risks faced by investors during the implementation of eco-friendly projects it is important to make comprehensive risk assessment and its incorporation in methods of evaluating investment projects.

Considering close relationship between the environment and the project effect, the evaluation of its effectiveness should be based on the indicator of ecological and economic adaptability of the region (EEAR). This indicator is the resulting characteristic of the strategic management of regional financing taking into account the environmental component.

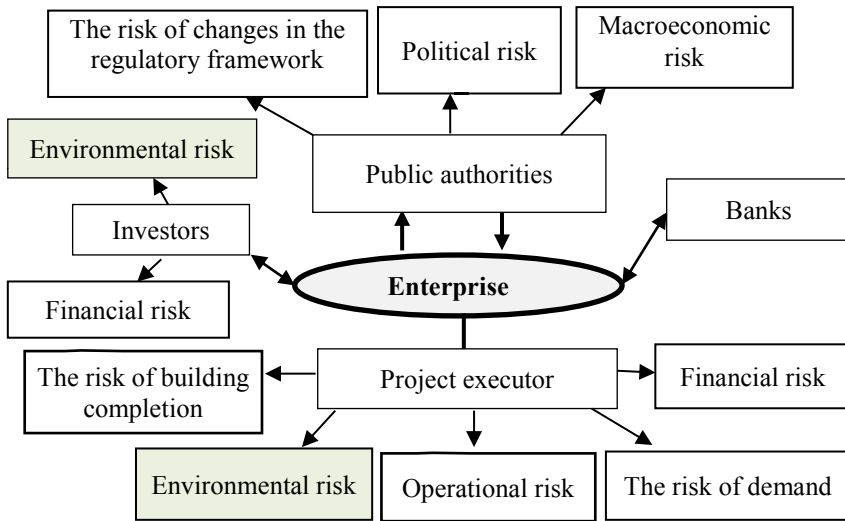


Figure 9.3. Scheme of environmentally friendly activity (project) of the enterprise with distribution of project risks based on public-private partnership

The ability of the region to respond timely on the environmental degradation through the application of preventive measures is proposed to evaluate using the EEAR – indicator. We define it as the ability of the region to attract budgetary funds, funds of business entities and households in order to finance environmental activity (projects) on condition that rate of their financing will exceed the growth rate of environmental pressure.

The degree of adaptability is defined in the work as the rate that reflects actual level of compatibility, coordination of environmental and economic policy in a given space-time interval (formula 9.9):

$$EEAP = \sqrt[3]{\frac{I_{E_PUK_{km}}}{I_{E_STA_{km}} + I_{E_MOB_{km}}} \cdot \frac{I_{WAT_PUR_{km}}}{I_{WAT_{km}}} \cdot \frac{I_{WST_REC_{km}}}{I_{WST_{km}}}} \quad 9.9$$

where $I_{E_PUK_{km}}$ – the reduction of pollutant emissions from stationary and mobile sources of pollution due to the introduction of air security actions in a region, t/km²;

$I_{E_STA_{km}}$ – the amount of pollutant emissions by stationary sources of pollution, t/km²;

$I_{E_MOB_{km}}$ – the amount of pollutant emissions by mobile sources of pollution, t/km²;

$I_{WAT_PUR_{km}}$ – the reduction of pollutant emissions due to the introduction of treatment facilities in a region, t/km²;

$I_{WAT_{km}}$ – the amount of pollutant emissions in water objects, t/km²;

$I_{WST_REC_{km}}$ – the reduction of wastes due to their utilization, burying and disposal, t/km²;

$I_{WST_{km}}$ – the amount of generated waste of first-third-hazard class t/km².

The methodical approach to the applying of public-private partnership in funding of environmentally friendly development will be based on the following assumptions:

1. The minimum share of budgetary financing based on the public-private partnership is offered to define as the sum of money necessary to cover potential investor's loss that occurs due to low environmental and economic regional adaptability.

2. The discount rate for a particular region should include two components: risk-free asset rate and risk premium. The last one is expressed through the EEAR – indicator. Risk premium will be differentiated depending on the effectiveness of the strategic management of regional financing taking into account the environmental component.

3. The low level of EEAR characterizes low quality of regional financing and high level of investment risk. Thus, share of state funding should be greater.

4. The high level of EEAR characterizes the effective financial management, low level of regional investment risk. These regions do not require significant public funding.

The results of the calculation ecological and economic adaptability of the regions of Ukraine are present in table 9.6.

In general, the discount rate (r) for the investment projects, which takes into account premium for environmental risk due to the low levels of EEAR, is determined in such form:

$$r_d = r_{rf} + \beta \cdot \lambda_m \cdot (1 + e^{-r_{adi}}) \quad 9.10$$

where r_d – discount rate, %;

r_{rf} – risk-free asset rate, %;

β – coefficient, that defines the sensitivity of profitability of company equity to market fluctuations;

λ_m – the average market risk premium;
 t – the time when the calculation is carried out;
 r_{ad} – premium for ecological risk related with investing in a project in a particular region.

Table 9.6. Ecological and economic adaptability of the regions of Ukraine

City	2013	2014	2015
Vinnysya	0,15	0,16	0,16
Volyn	0,22	0,22	0,23
Dnipropetrovsk	0,02	0,02	0,02
Donetsk	0,07	0,08	0,08
Zhytomyr	0,30	0,32	0,35
Zakarpattya	0,10	0,10	0,11
Zaporizhzhya	0,06	0,05	0,05
Ivano-Frankivsk	0,08	0,06	0,04
Kyiv	0,07	0,04	0,01
Kirovohrad	0,05	0,02	0,01
Luhansk	0,04	0,02	0,00
Lviv	0,05	0,02	0,00
Mikolayiv	0,04	0,01	0,01
Odesa	0,03	0,00	0,00
Poltava	0,05	0,03	0,01
Rivne	0,16	0,17	0,19
Sumy	0,19	0,30	0,49
Ternopil	0,17	0,20	0,23
Kharkiv	0,06	0,04	0,02
Kherson	0,23	0,24	0,25
Khmelnyskiy	0,11	0,11	0,12
Cherkasy	0,05	0,00	0,00
Chernivtsi	0,19	0,16	0,12
Chernihiv	0,07	0,08	0,10

Practical application of the mentioned above approach to finance eco-friendly projects based on the PPP principles will be conducted on the example of the project on reconstruction of treatment facilities. Initial

data for calculation minimum share of state funding of the project based on public-private partnership include the following components:

- expenses: investments, direct costs (materials, energy, salary of production staff); total expenditures (repairs of fixed assets, salary of support staff, amortization, other expenses); total economic costs (salary of administrative staff, other expenses);
- income.

According to the project it is considered to increase capacity of wastewater treatment facilities by 8.6 thousand cubic meters based on:

- reconstruction of buildings which are in operation at present;
- reconstruction of 2-nd stage objects that had been built but were not in operation;
- construction of individual objects which are lacking (foster cameras, grids, secondary clarifiers);
- installation of equipment in buildings of pumping station for pumping dust and compressor stations.

Total investment is 838 thousand UAH. According to the project conditions there is the following investment schedule: the first year it is invested 325 thousand UAH, second – 279 thousand UAH, third – 130 thousand UAH, fourth – 65 thousand UAH, fifth – 39 thousand UAH. Current project costs include: cost of materials, energy, salary for production, support and administrative staff of the company, depreciation, other expenses. Cost analysis of the project showed that the largest cost share belong to the materials purchasing cost. The rest of the money cover other expenses.

It is expected to get income at the third year of project implementation. Through the years the income of the project gradually increases and reaches its maximum at the 9-th year of project's implementation. We assume discount rate of the project at the level of 36%. The net present value of the project is calculated according to the discount rate, excluding the level of environmental region development.

The minimum share of budgetary financing based on the public-private partnership is considered to define as the difference between the net present value of the project, excluding premium for the environmental risk caused by low levels of EEAR, and the net present value of the project based on this indicator.

The calculations show that the greatest impact of environmental risks take place in Zhytomyr, Ternopil, Chernivtsi oblasts. In these regions the share of budget financing should be higher in comparison with the rest of the regions. The results are presented in figure 9.4.

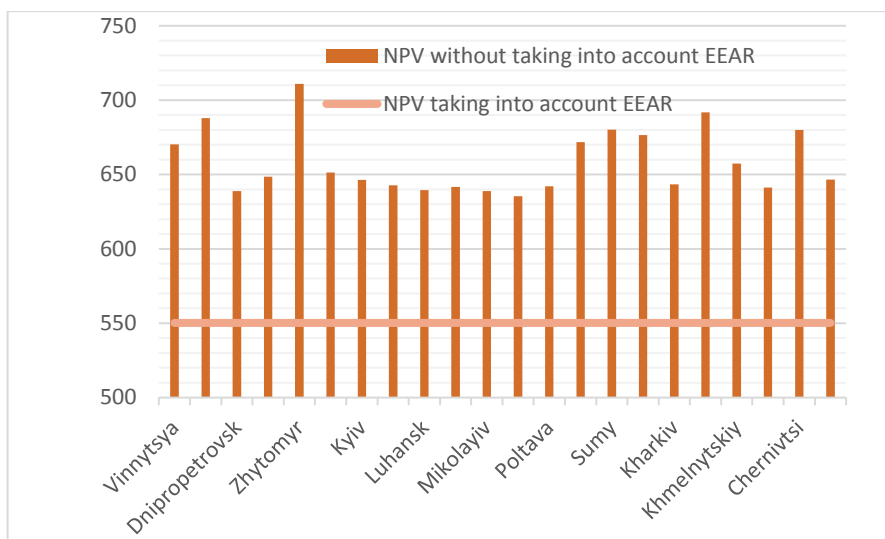


Figure 9.6. The results of the calculation the minimum share of budgetary financing of the project on reconstruction of treatment facilities in the regions of Ukraine based on public-private partnership, th. UAH

The public-private partnership based on the principle of potential ability and the principle of environmental and economic adaptability of the region has been grounded in the paper as the most effective way of financing the eco-friendly activity. That method has been practically approved in the view of the regions of Ukraine.

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9.6. Markets of biotechnologies-drivers for social and economic development

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Biotechnologies and bioindustry are meant to be an area, which today is considered to be one of the trend fields in postindustrial society development and establishment. It includes wide variety of branches, ranging from biotechnological medications for agriculture, to systems biology in medicine and other sciences. Nowadays, biotechnological revolution as a part of the forth technological revolution, exists at relatively early stage in its development, however the research are resulted in new important inventions in the innovative medical technologies sphere, the health protection sphere, the sphere of ecological safety, agricultural area, the sphere of biological protection and in the related sectors. It is prognosticated, that biotechnologies can be a leveling factor between developed and developing countries, because just they are able to add essential positive changes in sector of economy and health protection concerning of inhabitants from the poorest places in the world.

Today there is great deal of knowledge concerning perspectives for development in biotechnologies field. However, there is a necessity to reveal essence and role of the biotechnologies in the modern social development on the innovative base and to define biotechnologies markets tendencies and factors, which precondition its development in the world and in Ukraine.

At the beginning of 2000s famous American analytical center Rand Corp., which prepares analytical reports for administration of President of the USA, National Scientific Fund (NSF), and EU expert centers to conduct research in the field of synergism, nano-, bio-, informational and cognitive sciences and technologies, or so called NBIC-technologies and grounded that exactly those technologies would define the leading role of countries in the technological development and innovative activity in XXI century [1-2]. Many scientists called that megatrend «green planet». Its impact is made on the processes of more profound waste treatment, on improvement of waste recycling technology improvement; on sufficient and healthy nutrition (development of assortment line of instant food, which correspond healthy food standards, investigation of the management system by supplies chains, which assist fresh food products existence), on production of organic fertilizers, mixed fodders, mineral fertilizers, biofuels; on the demand increase on medical service and medicines, medical devices for mass consumption (for example for express-diagnostics of human's health state); on production of new

materials to improve the house ecology (development of the adaptive systems, which create and control internal ecological atmosphere in the house). The mentioned above technologies are related to the high-priority branches in economy development, because they comprise almost all spheres of human's life and in some cases (lack of production, environmental pollution, exhausting of the mineral fertilizers) provide national security in country.

The concept «biotechnology» is considered to be introduced into science in 1917 by Hungarian engineer Karl Ereky, while describing the process of the hog growing with use of sugar beet as a fodder. According to definition of K. Ereky, biotechnology includes «all types of works, with which these or those goods are produced from raw materials with the help of living organisms». However this concept was not spread widely during those years. Only in 1961 this concept was again studied after Sweden microbiologist Karl Heren Heden recommended to change the title of scientific journal «Journal of Microbiological and Biochemical Engineering and Technology», specialized in publication of works on applied microbiology and industrial fermentation, in «Biotechnology and Bioengineering». Since then biotechnology has been clearly connected with studies in the field of «industrial production of goods and service with participation of living organisms, biological systems and processes» [3].

Today, due to the generalized definition, *biotechnology* (from Greek bios – life, taken – art, logos – science, skills) is observed as a science about biological processes and systems use in production; as a discipline, which studies possibilities to use living organisms, their systems or their metabolic byproducts to solve technological tasks, and also possibility to create living organisms with necessary peculiarities through method of gene engineering; as a sphere of human's activity, characterized with biological systems wide use of all levels in various scientific, industry, medicine, agriculture branches. Due to the mentioned above, there is a variety of tasks, appeared for biotechnologies to solve (fig. 9.5). The modern biotechnologies use biological systems of all levels: from molecular-genetic to biogeocentric (biospheric); therefore principally new biological systems are created, which are not seen in nature. Such systems to get herwith non-biological components (technological equipment, materials, energy-supply systems, systems of control and management) are also called *working systems*.

Considering great variety, scientists and practitioners use an international classification of biotechnologies, approved to be distinguished by colours (table 9.7).

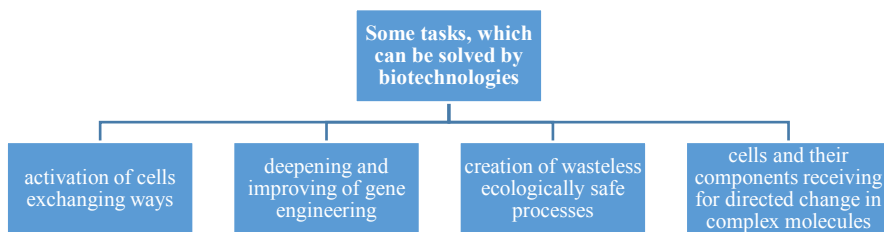


Figure 9.5. Some tasks, which biotechnologies are oriented to solve
 [Source: it is established by the author]

Table 9.7. International classification of biotechnologies [4]

Colour (due to classification)	Area of use
Green	Agricultural and ecological biotechnologies, including production of biofuels and biofertilizers
Red	Biopharmaceutics, biondiagnostics
Yellow	Food biotechnologies
White	Industrial biotechnologies
Blue	Sea biotechnologies, aquaculture
Golden	Bioinformatics, nanobiotechnologies
Brown	Biotechnologies of deserts and dry territories
Grey	Bioprocesses and fermentation
Black	Bioremediation, biological weapon

It should be noted that traditional biotechnologies, having existed hundred years, use existing microorganisms in nature: to produce food (bread baking, production of lactic goods); to produce alcohol drinks (brewing, wine making); to produce industrial goods (leather, textile products); to increase soil fertility (use of organic and «green» fertilizers) etc. Traditional biotechnologies were formed on the bases of empiric experience of many people's generations; they are characterized with conservatism and relatively low efficiency. However during XIX-XX-th century on the bases of traditional biotechnologies high level technologies were formed: technologies for soil fertility increase, technologies for waste water biological purification, biofuels production technologies. Thus, today the routine biotechnological goods (single cell protein, biofertilizers and biogas, organic acids, amino acids) were substituted by new goods and formulations, among which there were diagnostics and treatment means on the bases of gene engineering and cloning technologies, vaccine, serosity, monoclonal antibodies, ecologically clean materials,

and also most advanced bioengineering apparatus to realize biotechnological processes.

The industrial biotechnologies play special significant role to social and economic development in the country. They allow to use ferments and microorganisms for new goods production in chemical, food, pulp-and-paper, textile industry, and to receive energy. Owing to biotechnologies use in the industrial processes, one can improve technological indexes and features of products, save energy and recycle wastes. Due to evaluations of the company SBI, the amount of the chemical goods market, produced from biomass, and will be 12,1 billion dollars till 2021. According to data of Department of Agriculture in the USA (USDA), biochemicals consisted in 10% in 2015.

One of the most fast growing directions in industrial biotechnologies is production of bioplastic. This product has many advantages, because it is produced from renewable biomass and allows to solve the problem concerning recovery of domestic and industrial wastes. According to prognostications of European Bioplastics Association [5], the world production of bioplastic will grow more than 300% in 2018 in comparison with 2013. The bioplastic is widely used in package production. This segment takes 67%, and also it is used in textile industry (10%), in production of consumers' goods (6%), agriculture (5%).

Ferments (enzymes) – protein substances, which are in tissues and cells of all living organisms and are able to speed up chemical reactions, proceeded in them, in many times. Enzyme preparations are used during production of food products, soaps, in alcohol, leather production, and also in agriculture as supplementary feeds. Due to the data of Grand View Research [6], amount of the industrial enzymes global market was 4,4billion dollars in 2013 and till 2020 it will be 7,7 billion dollars, annual rates will be 8,3%. Food industry will take the largest part of ferments consumption – 38%, however the highest rates of the ferments consumption increase are expected in fodder industry and in household chemical goods. One has to mention that ferments market is enough consolidated: three largest players – Novozymes (Denmark), DuPont (the USA), DSM (Netherlands) – take about 70% of market. Besides, due to experts' evaluations, Novozymesis only one leader with part of 48%. Another group is presented by smaller players, oriented mostly to local markets.

Earlier the main method to produce recombinant proteins was production of microorganisms-producers in strains, however the increasing trend is production in plants, which more often have the richest structure of metabolic activity (for example – those which are able to close disulfide links in protein molecules) and finally require less energy for

cultivation owing to photosynthetic activity. During the so called «post-genetic» age (after interpretation of human genome in 2003) principally new mechanisms to create medical products appear. They consist in processing of data with purpose to define the most adequate marks and optimal combined therapies. Across biology, physics, chemistry, informational technologies, new field – «systems (synthetic) biology» is being developed, which suggests the leading researching branches in order to design, synthesize and to build new (including nonexistent ones in nature) living systems with stated features.

Systems biology is used in various branches: industry, agriculture, and bioenergetics. However, this branch has the largest perspectives in pharmacology and medicine. Many methods and approaches of the theoretical systems biology can be used particularly for quantitative description and prognostication of the complex metabolic or cell system conduct. Due to estimations of expert company Allied Market Research, the global market of systems biology will greatly lead the bioinformatics market in 2020 (fig. 9.6).

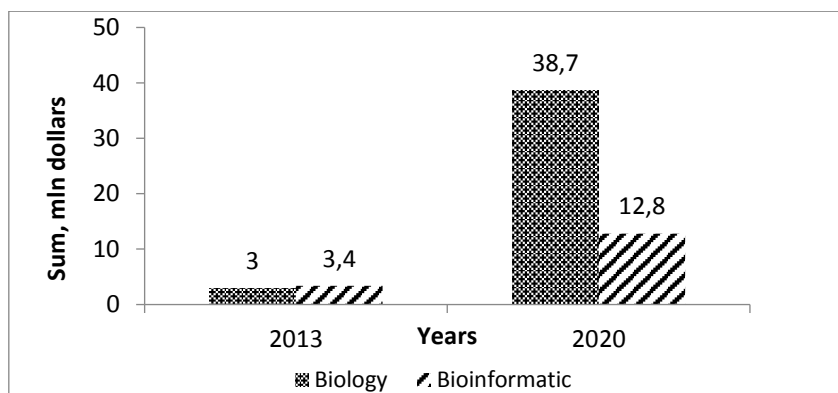


Figure 9.6. Prognostication of the systems biology and bioinformatics global market, mln dollars

[Source: it is formed due to data Allied Market Research [7]]

One of the key fields in modern biopharmaceutics is creation of new medical forms and means to deliver medicines to the target organ or tissue, and lately – cell type. According to experts' conclusions, an impact on the process of medicine development caused the appearing of mass-parallel calculations methods and works with big data.

Together with bioinformatic methods to process results of clinical studies and to model substance impact on human organism's cell, they

form so called bioinformatic technologies branch (bio-IT) [8]. Data amount (and their growth speed), which are available for doctors, biopharmaceutical companies and medicine developers, is great. In 2005 about 30% of doctors in regional clinics and hospitals in the USA used electronic medical history (EMH). Till the end of 2011 this number ran to 50% for regional clinics and more than 75% for hospitals. Besides, about 45% of American hospitals are included into the system of patients' medical data exchange with purpose to increase both therapy quality and for clinical biomedical and biostatistic investigations. The leading operator of EMH in the USA, Epic Systems – startup, valued at 1,6 billion US dollars to the end of 2011.

The biotechnologies market is one of the largest fast increasing in the world. It becomes one of the most dynamic and attractive for investors—annual dynamics of segments growth is 10-20%. Today it is valued at 320 billion dollars. It is developed fast in comparison with other economic branches, and prognosticated annual growth rates will be 10-12% till 2020. Thus, the market size will be twice increased and till 2020 it will be 600 billion dollars. It is prognosticated that till 2025 biotechnologies will provide 20% of GDP, and due to some estimations, the global market size will run to 2 trillion dollars [9] till 2025. The pharmaceutical production market, received owing to modern biotechnologies, is more than 60% of the whole biotechnological market, and biotechnologies market in plant production ran to 133 billion dollars. According to the American evaluations, biotechnologies take the second place by the economic potential after informational technologies.

Nowadays biotechnology (together with pharmaceuticals) takes the third place on capitalization among the leading sectors in the global economy, ceding only banking and oil and gas sectors. In the geographical view, biotechnologies branch is mostly developed in the USA (about 40% of the world market amount), Europe, Canada and Australia. Among European countries one has to distinguish France, Germany, Denmark and Switzerland, Sweden. The USA is the largest supplier and consumer of biotechnologies in all sectors in the world; over 1 300 companies were engaged in the branch. France has great potential in the sector of bioreactors and agrobiotechnologies [10]. However, in 5 years, it is expected that the most fast increasing biotechnological markets will be countries from Asia-Pacific region, particularly China and India, where there is great potential in development of the branch. Russia part is less than 0,1% at the world market.

Almost a half of all venture capital investments into biotechnologies in Europe are concentrated in Great Britain. The largest part of biotechnological companies in Europe is concentrated in Germany; it is the

second significant biopharmaceutical market in the world after the USA. Belgium is a large participant at the biopharmaceutical market. This country has the largest concentration of biotechnological companies per capita in the world (140 companies, 10% of SRRCW and 16% of turnover in Europe). Denmark is the world leader at the market of enzymes and biotechnological production for diabetes treatment; most branch patents in the world are registered here and country is considered to be the second one by attractiveness (after the USA) of markets for biotechnologies development. Japanese pharmaceutical market cedes only American market by its size, and thus, it provides development of biopharmaceutics in the country. Japan is the biggest importer of the biotechnological production (per capita).

Australia is the fifth country by the size of biotechnological market in the world, investigations are carried out mainly in agrobiotechnological sphere, nature-oriented biotechnologies. Amount of Indian biotechnologies market is only 2% of the world market, however annual growing rates run to 20%. Recently India has been in advance of Canada with seeding amounts of GMO-crops (4th in the world). The country is also the largest producer of recombinant vaccines from Hepatitis B in the world. Brasilia is the second producer of bioethanol in the world, and also by amounts of biotechnological crops seeding. Agrobiotechnologies and bioenergetics are actively developed in Argentina. Israeli biotech is one of the most growing, with most number of sectoral startups per capita in the world.

European sector of biotechnologies is the best market during four years. Having grown to 36% in 2015 (in comparison with 35% in 2014) it firstly become the best sector of biotechnologies, than analogical sector in the USA [11]. During many years the USA take leading positions in biotechnological innovations branch. About 1,5 thousand biopharmaceutical companies are engaged there, the largest of which is Pfizer, Inc. with total annual profit 58 billion dollars [12]. There are such companies as Amgen, Biogen-Idec, Bio-Radand Gilead, where biotechnologies are the main field of activity. Incomes of every company exceed 500 million dollars per year [13]. Investigations helped to define factors of supply and demand, which impact the formation and development of biotechnologies market (table 9.8).

Biotechnologies are not only driver for innovations development, but also let effectively to solve many social and economic tasks. Experience of the foreign countries, which have scientific achievements in the sector of biotechnologies, and develop bioindustry, shows that, although biotechnological projects are perspective and highly efficient, the branch is developed on the bases of proper state strategy and with state support

(accept proper national programs, create legislative base, provide with necessary economic preferences). Particularly, long-term programs of bioeconomy development are developed and are working now in the USA, South Korea, China, India (biotechnological policy is developed for every state), Brazil, RSA, Cuba, Netherlands, Finland, Germany and other countries. Biotechnologies were defined by the Chinese government as one of seven areas of the country development for 12th five-years period (2011-2015); state invests about 40 billion dollars every year into the biotechnologies and involves 10 billion dollars of the venture capital investments into the branch during the last years.

Table 9.8. Factors of supply and demand, influencing the formation and development of the biotechnologies market [formed by the author]

Factors of supply	Factors of demand
<ul style="list-style-type: none"> - Level of fundamental and applied fundamental research development in biotechnologies sphere; - Part of expenses for specialists' training in the sphere of biotechnologies with total amount of costs for education; - Number of patents, patent applications in absolute form and in parts of the all patents in the country and in the world; - Ratio between gross value added on production of the bioindustry and expenses for SRRCW in this sphere; - Financing of science and investigations; - Infrastructural base and possibility for its development; - Sizes, sources and specific character of investment into production of biotechnological goods; - Possibilities to form principally new branches; - State control of the sphere - supply (support of actions concerning the existing production realization at the market and - concerning investigation of the new products, formation of new market segments, creation of technologies transfer centers and education); - Level of prices for equipment and materials, used in the production process; - Development of standards in the biotechnologies sphere and their harmonization with forming foreign and international standards; - Level of intellectual property rights protection; - Staff experience, engaged in production and realization of biotechnologies, possibility for their training and retraining 	<ul style="list-style-type: none"> - Existence or formation of innovative economy, where biotechnologies will be complexly required, which really exist at the modern level of the scientific and technological progress development; - Demands in creation of goods with proper features; - Possibilities for scientific prognostication of the new biotechnologies potential qualities and - Formation of the principally new consumer niches on this base; - Correspondence of the market firm structure to the biotechnologies development level; - Provision of the biotechnologies safety guarantees owing to creation of the national and international system; - Top-priority and initiative role of the supply factors

Investigations show that convergence is a creation of goods and technologies across several branches (biology, chemistry, physics, informational technologies etc.) and leads to radical changes in the structure of biotechnologies market. Traditional vertically integrated business-models, based on the model of a product creation and bringing to the market by one company, cede models, founded by the open innovations concept [14]. It allows to unite efforts and achievements of different participants: startups and universities, researching centers and transnational corporations, venture investors and state authorities. At the same time, biotechnologies become the object for secondary players, including IT-companies, which is logical, because advances in the biotechnologies would be impossible without great data processing technologies, modern systems of the high efficient calculations and computer modeling. Informational technologies become the platform for new leading projects in bioindustry. In their turn, biotechnologies promise to change greatly IT market conjuncture, including owing to potential advances in bioinformatics.

One of the perspective biotechnologies market segments is 3D print and bio-printing, as next evolutionary step of development, using more complex materials, based on living cells. Achievements of this young sphere attracted attention not only of venture companies and investment funds, but also expert and analytical agencies, including technology of 3D print and bio-printing, into the technologies list, which lead to serious changes in different economic spheres. According to data of the analytical agencies, till 2016 bio-printing will cause revolutionary break in the regenerative medicine. 3D bio-print will allow to compensate growing demands in cartilaginous tissue. Today demand is 3,6 billion dollars at this market. Analysts prognosticate that there will be changes at the skin market owing to bioprinting till 2018. Finally, till 2025-2030 compound organs will appear at the market, particularly kidney, included as hyperaim by the scientific team of Laboratory «3D Bioprinting Solutions» [15].

The profound core and a cause of biotechnologies market radical growth from position of the world economy is a potential possibility to solve global problems, which provide biotechnologies, among which commodity problems, which are today effectively solved owing to trans genetic food crops, used either as fodder for agriculture (soy), or as traditional food crops (wheat, corn). In this context, food and agricultural organization Food and Agriculture Organization, FAO) confirms that biotechnology is a powerful tool for stable development of agriculture. It is made to solve the food supplies problem under conditions of population increase; however it touts to careful and individual approach while

defining advantages and risks in every genetic action in the biotechnologies sector, and recommends to solve «legal problems, connected with biological safety of each good and its production, till its mass release» [16].

There are no conceptual approaches in Ukraine concerning state policy on establishing and development of bioindustry, and formation of the innovative system to provide it. Such situation shows risks either from position of country safety, or from position of leading countries lagging growth — leaders in one of the crucial technologies, core of the modern technological mode, which defines society form in the first half of XXI century.

It should be noted, that in 2010-2014 Target complex interdisciplinary program of the scientific research AAS Ukraine «Fundamentals of molecular and cell biotechnologies» WAS carried out. The main directions of the Program consisted in studying of peculiarities and mechanisms in biomacromolecules, supermolecular complexes, subcellular and membrane structures functioning in normal and pathological condition; investigation of the molecular and cell technologies fundamentals for diagnostics, preventive measures and treatment of diseases and living organisms genetic improvement; structural, functional and comparative human, animals, plants and microorganisms genomics; modern aspects to create biologically active products, new forms of plants and microorganisms. 17 institutions from two departments AAS Ukraine and one institution under AAS President of Ukraine – 8 institutions from Biochemistry department participated in the Program conducting [17]. However, absence of state support for knowledge generation sector (fundamental and applied sciences) leads to underfunding of research and developments in the biotechnologies sphere. It causes the fact that research which is conducted in the biotechnologies field, are old and are promoted slowly or stopped.

Besides, imperfectness of the existing tools to bring the innovative products to the market doesn't let consider both specific nature of the various biotechnologies and other branch factors impact. Moreover, the significance to bring innovative goods to the market is proved by the fact that number of the annually created and commercialized innovative technologies and goods at the sectorial enterprises, is growing. The infrastructure which provides the innovative advance and innovative processes fastening remains the same during the years. An international experience shows that the most effective forms to realize bioindustry creation tasks area) industrial agglomeration, formation of clusters (environment which assists to spreading of knowledge and development concerning social capital); b) network relations and cooperation; c) alliances of small and medium biotechnological business with pharmaceutical and

medical-biological companies. Moreover, such structures greatly assist the entrepreneurial and educational activity, competence development initiatives and sustainable development realization types.

The perspectives of the economic growth in Ukraine are connected first of all with scientific and technological base development and entrance to the market of biotechnologies, strengthening of the state support for biotechnological productions, setting of the legal activity regulation system in the biotechnologies sphere. Production of the alternative engine fuel and transferring of chemical industry to the renewable feed stocks are of top-priority from the global market conjuncture and international ecological safety view point. They have to be starting point for biotechnologies branches entrance to the global market. One must pay attention to them while expanding the competitive biotechnological productions at the domestic market. To our views, projects in bioinformatics, nanobiotechnologies; projects in ecobiotechnology, including on creation of ecologically clean accommodation and on renewing of agrolandscapes, project «biochips» are the most perspective and ecologically secure fields in biotechnologies development. The projects on biovariety, biosafety and biocatalysis are relatively attractive from the viewpoint of financial benefit and safety on the whole. Biotechnologies development in forestry is able to provide advance in problems concerning biological variety keeping and high productive forest resources renewing in the short period with minimal expenses.

There is an urgent necessity to coordinate legal acts of the country in biotechnologies turnover sphere with international organizations and unions legal acts, particularly with acts of European Union in order to establish Ukraine as a player with equal rights at the international market of biotechnologies. Adaptation must be in four main areas: legal determination of biotechnologies essential features, regulation of regimes concerning conduct with some biotechnologies, legal provision of biosafety, and coordination of the technical norms [18].

Although there is lagging in biotechnologies, Ukraine has all necessary reconditions and potential to overcome it and to be included to the number of world leaders in bioindustry branch. The objective factors assist it: bioresource base (soil, fresh water), energy resources, personnel, technologies, economic conjuncture. Since it is impossible to come up with developed countries on the technological way, moreover the gap is constantly increasing, it is necessary not to come up with them, but to be ahead and become a leader of technologies in the next generation, leader of the seventh technological mode. Technologies of the seventh mode will include socio-humanitarian technologies, first of all technologies

to create new living forms on the planet, technologies of the social reality constructing.

Biotechnology is one of the key areas, one of the paradigms in the modern development of the economic and technological systems. In the most economically developed countries in the world they became main power in medicine and agriculture (plant production, fodder base of cattle breeding) development. Biotechnologies are widely used in the forms of genetic modification and living organisms). The state governments investigate national concepts for biotechnologies markets development, form the mechanisms to support innovative biotechnological companies, including owing to facilitative legal and taxing regime creation, providing with financial and nonfinancial motives.

Biotechnologies open new opportunities in the innovative products creation field, which are able to solve many global problems, among them to provide with food stuffs and high effective medical preparations, reducing negative impact on the environment. Besides, biotechnologies branch has great multiplying influence on national economy, allows to modernize industry, to solve problems in health protection, ecology, energetics, agriculture. Small and medium-sized biotechnological companies often become drivers of the social and economic development. Large corporations actively introduce the model of open innovations. The branch involves most participants, including secondary ones, creating the special model of markets and innovative business-processes.

Thus, Ukraine has to start breakout of biotechnologies branches to the global market and to focus attention on them while expanding the competitive biotechnological productions at the domestic market.

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9.7. Motivational environment and tools of the agricultural land use greening

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Promoting the rural development was proclaimed in Ukraine with the development of a number of strategic documents, particularly, «Single comprehensive strategy to develop agriculture and rural areas in 2015-2020 years» [1]. Achieving of set targets involves changing the state agricultural policy approach from sectoral to spatial and territorial, so the policy of sustainable rural development becomes a part of the national regional policy. It also presupposes the promoting of greening and socialization of rural development processes to replace the industrialization of agriculture.

Rural development foundations are laid, primarily, in the economic sector, in particular by: the diversifying of economic activities and methods of resource use (within the sector); diversification of forms and types of economic activities in spatial terms (within the administrative unit); implementation and development of integrative, synergistic relationships at different hierarchical levels of management (between different types of crops, industries and activities within the production unit, institutions and business entities, industries, sectors, etc.) [13; 14]. This determines the special role of economic structures, that directly operate

at rural areas, in sustainable rural development. Whereas agricultural production presents the link of people and nature interaction, entities are responsible for rural development as users of natural resources in rural areas [14], and therefore appear as the main actors of greening the business processes.

The statistics analysis shows that the current state of agriculture in Ukraine and its resource base, particularly land resources, meets the goals and objectives of environmental management and sustainable economic development insufficiently. Specifically, large areas of agricultural land (42731,5 thousand. ha – 70,8% of the country's land at the beginning of 2015 [3]), inherited from Soviet times, are characterized by irrational structure from an environmental standpoint. Of no less importance is the fact that land areas, which help to restore topsoil and have ecological significance, have been decreased from 2001 year to 2014 year, namely: fallows by 191,8 thousand. ha, pastures by 76 thousand. ha and perennials by 31,5 thousand. ha [10].

The structure of unduly cultivated farmland can't be considered environmentally acceptable too. For instance, corn crops increased 3,4 times (to 17,2% of the total cultivated area), sunflower by 1,8 times (to 19,3%), rape by 4,12 times (to 3,2%), soybeans by 27,8 times (to 6.6%), during the 2000-2014 years. For the same period, lea areas decreased 3,9 times and have reached in the structure of sowing areas only 3% in 2014, the perennial crops have decreased 2,7 times to 4,1% [10]. The above mentioned shows the formation of extensive, predatory way of land use to provide the large-scale, export-led production of grain and industrial crops.

The problem of deteriorating of farmland quality is particularly acute in this context. The results of eight round of agrochemical examination of Ukraine soil (hold during 2006-2010 years) indicate that soils have lost a significant portion of humus and the most fertile black soils have turned into a middle-fertility and continues to deteriorate [6, p. 14]. The main problems of the soil quality, pointed out in 2001, have not been resolved yet, and even have been exacerbated, namely: the loss of humus, the erosion extension, the reduction of nutrients and trace elements, the oxidation and alkalization of soils and others [5].

Insufficient treatment of fertilizers and soil dressing technology violations are commonplace. For instance, 18% of the crops remain untreated in 2014 even with the increase of used quantity of chemical fertilizers. It should be noted that organic fertilizers treatment have direct impact on the formation of humus layer, but it had been manured only 2% of crops with the amount of 0,5 kg / ha [Statistics, 2015] for the minimum norm of 10 kg /ha during 2010-2013 years. It means that the

recommended ratio between the organic and mineral fertilizers is not observed, so such problems as attenuation of soil formation and subsequent loss of humus will expand. Insufficient organic fertilizing may be offset by other means, including an increase in the perennial crops, but this measure is not hold, according to data on the structure of agricultural land and crops.

All this affect the effectiveness and efficiency of agricultural production, of course. The real yield of major crops was within the natural capacity [6], and even was lower for certain crops (sunflower, winter wheat) in 2010 [10]. Taking into account the increase in yield of major crops to the effective level in 2014, we need to pay attention to the fact that the yield of sunflower crops didn't reach the natural level of 2010, even in 2014. At the same time, sunflower sown areas occupy 19,3% of agricultural lands [10]. This suggests that 19,3% of agricultural land is used inefficiently and extremely irrational from the future generations interests standpoint.

It should be pointed out that the above phenomena and processes take place under the conditions of the Moratorium on sale of agricultural land, set by transitional provisions of Land Code of Ukraine adopted in 2001 [2] and subsequent amendments thereto. So we can conclude, that Ukrainian system of land lease is to some extent contrary to the principles of rational land use, goals of preserving the quality of natural resources and also protection of public and private property. It has been formed and established as a result of administrative control and regulation in the sphere of land relations.

Limitations of private land owners rights realization (74,65% of agricultural land is embraced by private ownership), particularly, restrictions to sale land and to use it as collateral caused the formation of a special national system of land lease. This system has absorbed the whole range of previously accumulated interrelated socio-economic problems of rural areas and not only doesn't contributed to their solution, but also led to further complications. This was the root cause of the aforementioned negative environmental phenomena and processes. Actually, one can identify the characteristics that distinguish the existing system of agricultural land use in Ukraine, namely [5]:

- there is no alternative forms of land disposal for the landowner;
- landlord's dependence from tenant as well as the inability of owners to realize their rights fully;
- dictate of land user in setting the terms of the lease;
- the lack of financial resources for development, modernization of production and the proper implementation of measures to rationalize

land use, due to the low efficiency of agricultural commodity production and low investment attractiveness caused by unresolved property relations;

- very low rents;
- the loss of land value as a property in terms of owner.

These features are crucial in terms of motivation of environmentally balanced agro-industrial activities. They determine the range of factors that form motivational environment of greening the agricultural land use, as well as the tools of implementing these processes.

Consumers are regarded as one of the main components of the motivational environment in the process of greening business. Their impact is realized through growth and expansion of markets of environmentally friendly and organic products in the agricultural sector. The national market of environmentally friendly and organic agricultural production is currently at the stage of formation, that is positive, but is not sufficient in terms of implementation of an integrated and comprehensive greening processes in Ukraine agriculture. The Law of Ukraine «On the production and turnover of organic agricultural products and raw materials» [7] has been adopted only recently – in September 2013, and some of the mechanisms that are essential for full implementation of Law provisions are still under legal settlement. In particular, the resolution «On approval of the assessment of the suitability of land (soil) and the establishment of zones of organic products and raw materials quality criteria of land (soil), their suitability for the production of organic products and raw materials, suitability for the production of certain crops» [9] is still being at the design stage. It should be noted also that the law stipulates promotion of the domestic market for organic products and the meeting consumer demand for a range of organic products (art. 5, p. 1, § 3 [7]), but there are not defined any mechanisms to provide these actions. So, consumers influence on greening the agricultural production is quite small.

Other component of the motivational environment is presented by agricultural producers which use the leased land. They are mainly concentrated on the profit that can be obtained in a discrete period of time (for the lease period) and don't have a stable economic incentives for the conservation and restoration of leased plots soil fertility, as the latter are not owned by them. Business structures in agriculture, in particular, agricultural holdings, try to minimize production costs and investments, and this leads to the failure of crop rotation, fertilizer treatment violations, the non-compliance of woodlands, the limitations of livestock production, deterioration of rural infrastructure, which needs substantial improvement as it is.

Do landowners have sufficient impact on implementation of processes of greening the agricultural land use in terms of the current system of land relations in Ukraine? Fifteen-year domination of the Moratorium on land sales has led to the concentration of land as a productive resource in the ownership of the least economically active part of the rural population – pensioners, which do not have sufficient financial resources and knowledge about the mechanisms of ecological and economic land evaluation. The information asymmetry, the lack of elaborated institutional and legal framework to control the tenants land management practices, and the actual lack of farmers access to agrochemical laboratories services make impossible full realization of landowners rights, particularly, in terms of the protection and preservation of the property (the qualitative characteristics of the land as natural resource, as well as agricultural production base, are crucial to the economic assessment).

Implementation of administrative regulation of land relations is simultaneously accompanied with passive state participation in the process of monitoring of production activities on leased land about the compliance to the principles of sustainable land use. The certain attempts to simplify the business regulation policy look pretty risky from an environmental point of view in this context. In particular, the warranties of the tenant to preserve the quality of land resources and rational use of lands have been excluded by legislature from the list of essential terms of the lease agreements recently [8]. It makes rural people more vulnerable against the backdrop of mismanagement of tenants.

One of the main functions of the state should be the protection of landowners rights with the aim to save their property under the administrative regulation of land relations, in particular, by promoting the introduction of environmentally friendly methods of agricultural production on leased lands. Therefore, the state should create instruments to control the level of environmental suitability of business processes, and ensure their compulsory use within the Moratorium duration, at least. The environmental audit is highlighted as one of the most effective among these tools.

Environmental audit of agricultural land use and land protection represents, in our view, organizational and economic system of independent monitoring and controlling of production and environmental activities, financial and economic state of different types of enterprises in relation to the level of environmental regulation of land use. The following inter-related factors affect the form of an environmental audit of agricultural land use, namely: the development of free market economy, land ownership, the environmental business culture and environmental awareness

of consumers as potential buyers of agricultural products. Concurrently, the scope and role of environmental audit are quite multifaceted [4]:

- the environmental audit as management tool provides environmental security of company;
- the environmental audit as a tool of the state environmental safety improves efficiency and ecological management of territories, if it is viewed on a national scale, within the implemented «state system of environmental audit»;
- the environmental audit is a tool to ensure the prevention and limitation of environmental accidents in the company, which is under the environmental audit procedure;
- the environmental audit is an element of environmental insurance. In this case, the results of the audit will affect the «economics» of the process of environmental insurance, by influencing on insurance premiums and tariffs;
- the environmental audit is a new trend in the market of environmental services, i.e. a new area for business, which is also very important in terms of the development of the rural economy.

Areas of the environmental audit of agricultural land may include the following substantive spheres of ecological and economic analysis and evaluation, namely:

- the study of the structure of certain types of land and sown crops;
- the analysis of land use for the intended purpose;
- the analysis of projects of soil nutrition with phosphorus and potassium;
- the study of soil quality indicators;
- the research of level and salinity of groundwater;
- the assessment of the biotic potential or biological productivity of land;
- the analysis of soil resistance to the anthropogenic impact;
- the investigation of natural and anthropogenic processes;
- the analysis of pesticides contamination of agricultural land;
- the analysis of projects of fertilization and status of warehouses for storage of fertilizers and pesticides on the farm;
- the study of the status of an antierosion hydraulic structures and protective plantations;
- the analysis of the conditions of removal, storage and application of topsoil;
- the assessment of land restoration projects;
- the justification of measures that lead to the deterioration of land;
- the justification of measures to control weeds, and others.

The researchers suggest to use the environmental audit as a voluntary tool to provide an effective environmental policy, environmental management, sustainable economic development of a company [12]. The voluntary environmental audit has more positive incentives for conducting as it shows the high level of environmental culture of enterprise, environmental responsibility, potentially environmental safety management. To encourage voluntary forms of environmental audit the network of consulting and auditing firms and expand public system of environmental standards and environmental labeling should be formed. However, in Ukraine aforementioned prerequisites of effective forms of voluntary environmental audit development are not realized. So focusing only on the voluntary environmental audit will lead to the fact that this environmental management tool will have low influence. Setting the mandatory environmental audit for the certain functional areas and problematic situations is the most appropriate from this point of view. Under the current law, the mandatory environmental audit is carried out in the following cases: bankruptcy; privatization and concession of state and municipal property; the transfer or purchase of a state or municipal property; long-term lease of state or municipal property; creation of joint ventures on the basis of state and municipal ownership; environmental insurance of facilities; termination of production sharing agreements in accordance with the law; in other cases provided by law. Such limitation of environmental audits cases reduces its effectiveness as a tool for environmental management and does not allow to achieve the main goal of the audit, because the majority of companies that cause the most damage to the environment, have been already privatized.

One should recognize the need to fix the mandatory requirements for conduction of an environmental audit of agricultural land at the end (prolongation) of land lease agreements, given the critical importance of quality indicators of land resources, especially in the context of changes in agricultural markets related to the acquisition of Ukraine warranties under the Cooperation Agreement with the EU [11]. It is appropriate to carry out the environmental audit procedures with respect to the manufacturer (enterprise activities), territories (initiated by local governments), region (optional) and also rapid audit, situational audit, according to the classification of environmental audit types [4]. Environmental audit (periodic and final) may also be written as a mandatory element of standard lease agreements with the definition of the mechanisms of compensation of landowner losses.

It is advisable to use economic and legal motivational tools in order to expand the environmental audit processes without «formalization». These tools may include, particularly, mechanisms, tools and methodical

providing of agriculture state support policy, such as the introduction of the grant (project) principle of financing with the priority of environment-friendly production processes and products (mandatory environmental audit conducting is dictated in this case by the need to attest the conformity of production system with environmental standards).

Certain educational measures need to be implemented due to their potential to generate sufficient motivation for the introduction of environmentally responsible manufacturing processes in agriculture with the environmental audit as control, analytical and information management tool. Among them are: implementation of advocacy and consulting work among the population, and developing the educational projects for small and medium enterprises in agriculture with the study of the basics environmental entrepreneurship and the use of software for planning, accounting, control and analysis of ecological production processes, as well as education projects for representatives of local governments regarding external financing and technical assistance (e.g. Tacis, USAID projects) in the area of environmental protection and social activity, promotion of innovation, civil society development, promotion of places and administration, etc.

Conclusions. Agricultural producers should significantly increase the level of socio-environmental and economic responsibility to the rural communities, especially under the implementation of the land and administrative reforms in Ukraine. However, the current system of land relations in the agricultural sector is not conducive to the formation of powerful motivational factors for business units to increase the level of socio-environmental and economic efficiency of production processes and resource use. This determines the need for active participation of the state in the process of greening agricultural production, particularly agricultural land use. The environmental audit is an effective tool to implement greening land use processes in this context: as organizational and economic system, to plan, to promote and to organize the green agrarian business; as it provides the process of monitoring of relationship of environmental performance with end financial and economic results of production. The procedure of environmental audit takes into account the territorial and sectoral nature of resource use and appropriate legal framework and thus improves the relationship between resource users, environmental authorities and population. It also helps to save resources in the process of collection, analysis and assessment of information to make decisions about intensification and development of production processes with the aim to ensure ecological acceptability of production.

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Part IV

MARKETING AND LOGISTIC
INNOVATIONS
AS INSTRUMENTAL ENSURING
OF INNOVATIVE GROWTH

Section 10

The realia of modern marketing development

10.1. Dialectics bases of the marketing theory

Oklander M.A., Oklander T.O.

Marketing as a science appeared in XIX-XX centuries. In 1902 the first courses on marketing were given at USA universities: University of Michigan by Johnson E., Berkley University in California by Littman S., Illinois University by Fisk J.M.

Kotler F. considers marketing an American science, which includes different periods in the history of American economy and main social, economic and political changes [1, p. 59-60]. It is real fact that marketing theory appeared in the United States of America and first lectures on marketing were given by lecturers at the American universities. Bartels R. points out that «economic theory influenced the marketing thought development more, than another public discipline» [2]. I.e., according to the idea of Bartels R., marketing genetic origin is reasonably to search not in the history of American economy, but in European schools of economic theory.

After the World War the Second the marketing theory is developed in the USA more deeply. That's why during 1950-1970 the marketing theory is divided into several marketing schools. At the end of 1950s and at the beginning of 1960s the most prestigious marketing-management school appeared, based on the model of three ages: «production», «sales», «marketing», suggested by Kit R. [2]. The American marketing-management school takes a leading place in creation of the marketing theory and is considered to be classical. It is connected with two key approaches: «marketing-mix» and «marketing management».

Borden N. used the term «marketing-mix» («marketing complex») in president's addressing to AMA in 1953 for the first time. He borrowed that idea from the Kaplinton's J. work, where marketer was presented as a specialist, who combines various market tools of impact on the economic processes. Borden N. considered the marketing complex to be the following twelve elements: product policy, pricing policy, branding, distribution policy, personal sales, advertising policy, stocks on sales stimulation, packing, product demonstration, service, transport and stocking operations, analytical activity [3].

McCarthy E.J. suggested complex «4P» in the work «Marketing» in 1960, based on Borden's N. idea [4].

In 1970s the marketing service theory appeared simultaneously in the USA and Europe as a reaction on service part growth in GDP. Northern school, French school and American school became the main scientific schools of service marketing.

In 1993 French professor Marion J. published his article «Marketing management: what have been changed since 1960s?». He writes: «...in spite of the fact that American marketing-management theory had useful impact on development of the management theory and practice, nothing new have been appeared since 1960 or even since the earliest period» [2]. This work became one of the first understandings of the fact that it is necessary to modernize classical scientific approaches, because marketing activity efficiency began to be decreased.

In 1993 a representative from Scandinavian marketing school, Finnish scientist Gummesson E. gave more definite explanation, than his French colleague: «...traditional books do not adequately represent the reality» [2].

At the end of XX century representatives from American and Northern schools suggested several conceptions: marketing of relations; marketing of service, based on complex «7P»; internal marketing.

We think that although marketing theory was formed in XIX-XX century, it is a logical continuation of different economic theory schools development. The marketing genetic origin reaches early stages of capitalism origin, goods and money relationship activation, initial capital formation period.

The first theoretical source of marketing is reasonably to consider mercantilism. Mercantilists confirmed that the society wealth source was intensification of commercial efforts, exchange, trade. The capitalism appearing is impossible without turnover sphere, commercial capital, which subordinates industrial capital, because the trading profit that time was the base for national wealth growth. Mercantilists drew the wealth source out of inequivalent commercial exchange.

The second theoretical marketing source was classical political economy and its neoclassical stage in development. Such pre-marketing conceptions as production improvement and product improvement are based on classical political economy postulates. The labor theory of value has great impact on early works on marketing, because it is a scientific base of the commercial exchange. In the exchange sphere the product form of value is equivalently exchanged to the monetary form. In marketing this process is represented by the sale category. Until 1900 scientists found out that demand was defined by wish and ability to buy a

product, and appearing of the new market experience during that time proved that demand could be artificially increased.

The great impact on marketing, especially in the price policy development part, includes theoretical investigations, made by representative from neoclassical school Marshall A. He has studied pricing mechanism and has formed «law of demand». Marshall A. supposed that nonprice factors influence demand: 1) consumers' tastes; 2) consumers' income; 3) price for substitute products; 4) number of buyers; 5) expectations. Under the influence of these factors, demand curve is shifted to the right or to the left. Marshall A. also investigated supply and proved that supply curve demonstrated dependence between price and product amount, suggested for selling, it is a direct proportion. He also elaborated the price elasticity theory, separating demand elasticity by the price and profit.

The third theoretical marketing source is the marginalism theory, particularly the first stage in the part concerning the consumers' behavior study – so called «subjective direction» of the political economy, because product benefit was preconditioned by the consumer's psychological feature [5]. The representatives from Austrian marginalism school Menger C., Wieser F., Böhm-Bawerk E. in their works formed subjective and psychological approach to the economic phenomena. It was mentioned that the economic phenomena were not significant, but their subjective estimation was the main. The supremacy principle of goods distribution over producing was distinguished and one found out that distribution features are defined by the consumption intensity [6, p. 51].

The representatives from Austrian school considered origination point for the economic science to be wants. Human wants are varieties of unsatisfied wishes or uneasy feelings, connected with physiological misbalance. A person has a lot of wants, but his resources and abilities are limited. The person's main task is to satisfy wants with limited resources. From the viewpoint of marginalism property (instead of value) can be subjective [6, p. 46]: it is formed on the basis of material values for subject (person), plays a significant role in formation of the goods evaluation; objective – it is market price of the product. Subjective value is determined on the basis of Gossen's Law (law of stock). The objective value is a result of the product benefit different subjective estimations conflicts at the market – a purchaser (critical value) and seller (refund expenses for production). It caused the conclusion that subjective opinion defined the product price.

Representatives from English school of marginalism Stanley W., Jevons W. developed marginal and subjective ideas: they studied problems of profitability, demand and consumption: «Parts of the same product have unequal benefit» [6, p. 81].

The main positions of marginalism methodology, included to the marketing theory, are: explanation of the person's participation in the economic processes by psychological, subjective factors; human's rational behavior preconditioning by subjective introduction; dominancy of the exchange and consumption over production, because value benefit can be evaluated only by consumer.

The achievements of the economic science classics determined marketing activity theoretical bases and found the following main conception of pricing: expenses conception, based on labor proprietary theory; marginal conception, based on the critical benefit theory; neoclassical conception of pricing, which includes production expenses theory and critical benefit theory.

The fourth theoretical marketing source became the institutionalism theory, in the part of the consumers' behavior. Unlike neoclassicists, who explained economic phenomena from the viewpoint of physical (resources rarity) and technological limitations (lack of knowledge, experience), the institutional theory observes transaction costs.

Galbraith J.K. suggested the theory of «new industrial society» within institutionalism [7]: high level of production means development causes transformations in society (market is full of consumer goods, the service system is well organized, public conflicts are leveled out); the main aim of technostuctures is to strengthen market positions of corporations; big corporations require planning, and planning is possible only with internal and external stability space, market becomes prognosticating, free competition disappears.

Veblen T. supposes that a person is not «a calculator, which calculates satisfactions and pain very fast», connected with values purchasing. The consumer's behavior is defined not by optimizing calculations, but by instincts, institutes, means of aims achievement. He mentioned that institutes include different rules and stereotypes of behavior, some of which are shown as legal norms and public regularities. Thus, just institutes determine choice of consumer's behavior models to achieve goals. Veblen T. Suggests the theory of «demonstrative consumption», which breaks law of demand («Veblen effect») [8].

Mitchell U.K. investigated forms of human irrationality [8]. He tried statistically to prove differences of the real behavior in economy from hedonic criterion. Due to Mitchel's U.K. opinion, economic subject is an average man or woman. Analysis of the money wasting irrationality in the family budgets showed that in the USA an art to «make money» became ahead of its rational wasting. He agreed with Veblen T., that people were not «rational optimizers». He relied on the fact that human's behavior was a mixture of habits and something, that later (Simon H.)

called limited rationality. It is such a rational choice, which doesn't consider all possible variants of actions as a result of short information and/or limited cognitive abilities. Therefore, the rationality is a product for appearing and development of the money system. The total money use in economy makes the economic subjects to be rational. However, not all spheres of economic life are comprised by rational behavior standards. The consumption sphere is an area where there are habits and social norms; at the same time in the business sphere rationality and money factors play more significant role.

Clark J.M., after Veblen T. and Mitchell U.K., described human's behavior as one, based on habits, but not on quick calculations of benefits and expenses, satisfactions and suffers. He was one in the history of economic analysis, who pointed out the great role of informational expenses and decision making expenses. In order to make an optimal decision one has to bear expenses, connected with information collection and processing. However one has no idea about benefits from this information. Besides, the decision making also requires great psychological expenses. These costs create barriers to optimize behavior and are the base for habits formation [8].

Thus, the marketing theory is the typical result of the economic thought development, based on mercantilism studies, ideas of classical and neoclassical political economy, marginalism and institutionalism. It appeared in classical type in the USA in XX century at the human's industrial development stage during formation of the buyer's market. The marketing role in the economic sciences system consists in the fact that the research object is to optimize sales, i.e. to find preconditions for labor products transformation into a good. Such generic features make marketing the applied economic science. The following choice of marketing generic features is suggested.

The first feature is responsibility for sales optimization problem solving owing to preconditions for labor products transformation into a good. It is orientated to prevent from disadvantage of the goods production by means of irrational expenses, alive and persuasive labor.

The second feature includes complexity and synchrony of marketing tools, marketing complex use. Marketing tools are formed in the marketing complex and are used «distinct and inseparably». It means that each tool has a specific function, but the aim of the marketing is achieved only when they are used in complex.

The classical marketing conception, essence of which is presented by formula «consumer orientation», appeared in the process of the industrial society formation, under the conditions of «purchaser market»

formation, when the sales problems became the most important in the goods production.

The social and ethic marketing conception is a presenting of the international community modern needs concerning further development of economy, considering future generation needs.

One can point out the following tendencies of the marketing development, which precondition necessity to transform the marketing conception in XXI century: traditionally marketing events efficiency is decreased; markets overfragments owing to mass individualization; marketing use is spread in the sector of state governing; producers' number is decreased; marketing mediators' number is reduced; marketing mediators' role is increased in the distribution line; producers' number is grown, who use direct marketing; Internet-marketing role is increased; hybrid marketing is spread; cooperation between enterprise and consumers is grown owing to Internet using; the goods life cycle is shortened; brands number is grown; the «one-time» products using culture is formed; the efficiency of advertising companies and traditional media value are decreased.

If under conditions of economy in XX century one unsatisfied purchaser persuaded twelve potential buyers from buying some goods, today «...successful companies must satisfy a client and control conversations in Internet, in order to be sure that an angry client or consumer will destroy the company. In modern world one unsatisfied voice can impact thousand voices» [9, p. 10]. In the middle XX century marketing specialists reply to competition increasing with prices growth for various marketing communication forms, especially TV advertisement, however nowadays such expenses lose their efficiency and do not allow to get super-profits.

At the beginning of XXI century one observed the production crisis. Thus, necessity in marketing conception change at the beginning of XXI century at the postindustrial economy stage, amid mature «buyer's market», was caused by the market overstocking with differentiated product offerings. If at the previous stages in marketing development one had at first to find demands, and then to satisfy them, now, when consumers' demands have been studied in details, it is necessary to propose higher consumer's value, i.e. benefits uniting, which the target market receives and includes quality, price, in-time delivery, service. Under conditions of the qualitative products offerings variety, often appearing of new goods within ne price category, consumers often don't know what they need. E.g., when the company «Apple» created the first personal computer Apple II and thereby created new branch, consumers didn't know the utility

of that product. At first one had to tell the consumers what the personal computer was, and which consumer value it had.

Nowadays the concept «consumer orientation» is not great power of marketing, because such orientation is inherently particular attribute of the market activity. The one who is not oriented, cannot exist at the market, and those, who function – are oriented by themselves. I.e., consumer orientation is not a competitive advantage, all enterprises have such orientation and one can't understand why some enterprises are competitive and others not. Matching of the marketing approach and consumer orientation has no sense, because it is impossible to work in another way. The one wins, who creates marketing complex of such consumer value, which forms new demands, leads to the life quality growth, provides mass individualization.

Changes in the production way cause a necessity to transform marketing in the system «seller – purchaser»: marketing becomes the leading mechanism of production adaptation and stabilization in market environment turbulence times; internetization becomes mechanism of the new market relations realization mechanism with clients by type «mass individualization»; unique consumer value of product becomes the competitiveness mechanism, because mass standardization age was finished in consumption; innovativeness becomes a factor the product life cycle shortening, which causes the necessity constantly to investigate new marketing complexes.

In the classical variant the marketing approach has the following algorithm: «the demand revealing – goods producing – product offering – formation of connections to consumers – agreement».

Now one can suggest algorithm, which may be realized owing to Internet-technologies using: «well-known demand – product development – catalog offering of the new goods line – familiarization of consumers with offering – consumer's choice of the product variant – formation of connections to consumers – goods producing – agreement».

Today the model of mass individualization marketing is realized. At the modern stage of evolution marketing conception becomes opposite to the sales conception. Difference consists in the fact that it concerns the activity to the famous market – demands are defined or are formed by the seller. In the bases of priorities change, the emphasis are shifted from consumer orientation to active formation of their extra demand. It improves quality of life. Marketing activity of the enterprises have to provide consumers with mass individualization and to give extra value to goods owing to orientation to extra demand formation to improve life quality, to consider ecological standards and social and economic consequences of goods production and consumption.

The marketing conception modernization must have dual vector of development – getting extra value by products for consumers and society owing to orientation for demand formation to improve life quality and consideration of the social and economic consequences concerning goods producing and consumption.

We suppose that modern marketing conception – is a business philosophy, based on the highest consumer value offering to satisfy demand following the mass individualization and searching of the best way to solve consumers' problems, which can improve life quality. It is a conception of mass individualized socially responsible marketing, based on proposal of maximal consumer value, which provides competitiveness, consumers' problems maximal solving. Since the marketing theory has appeared the production way was changed, that's why it is logically to suppose that why its periodization must be adequately changed. The scientific significance of the marketing theory grounded periodization creation will let to understand in which area the marketing conception has to be integrated. It is a principle tool to estimate scientists' achievements, to form guiding line for marketing further development considering its role in the system of economic sciences.

We think that in XXI century it is necessary to modernize the marketing theory development periodization, at least owing to new stage appearing, as maximum owing to the existing periodizations restructurization. As a result, two scenarios are possible. The first one considers, if there is generally accepted periodization in science and it corresponds the principle mentioned above, the new stage appearing is reasonable, which would consider changes of the latest ten year. The second one considers, if as a result of research it is clear, that there is no generally accepted periodization, new periodization must be suggested.

The marketing theory development periodization is reasonably to be built due to the following principle: each period has to correspond to some marketing conception. This conception is an essence of the period, it defines scientific value of derived methodological investigations and preconditions marketing efficiency from the viewpoint of the problem, which caused the marketing appearing – sales optimization, i.e. resources using rationalization preconditions finding and labour product transformation into a good.

The first period of the marketing theory development has to correspond the period of the historically first classical conception creation, which is totally understood by specialized community and provides consensus between views of the leading marketing schools. The following modernizations of the classical conception are non-transferable, because production technological ways change leads to producing relations

changing, and the marketing activity efficiency can be provided by the marketing activity theoretical base change – its conception. Every next period must take into account shifting of previous conceptions focuses according to production way changes.

The suggested periodization of the marketing theory development includes three stages and do not have premarketing conceptions: commercial efforts intensification, production improvement, goods improvement. These conceptions are particular for early stages in the market economy development in XVI-XIX century, when demand exceeded supply, there were buyer's markets. (table 10.1).

Table 10.1. The suggested periodization of the marketing theory development

Period	Years	Stage of the goods production development	Periodization feature
1) the stage of classical marketing conception formation, based on consumer orientation	1900-1970	Early industrial economy	The existence of marketing conception
2) the stage of social and ethic marketing conception formation	1970-2000	Late industrial economy	The existence of marketing conception
3) the stage of social and ethic marketing conception formation, based on mass individualization, supply of the maximal consumers' value and optimal decision how to solve consumers' problems	since 2000	Postindustrial economy	The existence of marketing conception

The first stage of modernization is 1900-1970 as a stage where classical marketing conception is formed, based on the consumer orientation. The classical marketing conception appeared at the industrial stage in economy development, where supply started to exceed demand and the buyer's market was formed. Just this period was the starting point for the marketing fundamentals as a science. The subject matter of science is theory: during sixty years of the first stage the classical conception and other scientific marketing «symbols» were gradually formed [10].

The second stage of periodization is the period of social and ethic marketing conception formation – 1970-2000. The social and ethic marketing conception (socially oriented marketing, socially responsible marketing) enriched classical marketing conception with ethic and ecological constituents and considerations of social and economic consequences in society future life. In the middle of XX century society faced the following paradox firstly in the world civilization history: scientific and technical progress is multiple-valued process. It led to ecological problems,

overconsumption, and natural resources early exhausting. Demand, which is not rational or leads to environmental pollution, becomes dangerous phenomenon.

The development of productive powers created the mass consumption society. The worry about social and economic consequences of «overconsumption» caused the increasing of marketing strategies humanization and ecologization. At the new stage in development marketing theory received social and responsible features, realization of which has to provide the productive powers and public relations progress in practice. The problems of prevention from the ecological disaster, resources exhausting and necessity of spiritual renovation started to rise in scientists' works since 1970s XX century.

The third stage of periodization is a period, which was started at the beginning of XXI century, under conditions of the postindustrial economy, it is a stage of the social and responsible marketing conceptions formation, based on mass individualization and optimal consumer's problem solving. Toffler A. Prognosticated in 1980, that mass consumption society after demand differentiation would become «demassification» society. Each consumer forms differentiated demand, based on own consideration, what is the best consumer value for him. This process was called demassification by Toffler A. In 1990 he mentioned that differentiation processes are hastened and society entered the new phase «supersymbolic economy». Toffler A. supposed that «...new system made great step from mass production to qualitatively new consumption system, from mass sales market and distribution to niches and micro-market, from monolithic corporation to new forms of organizations» [12, p. 79].

Rushes of the social and economic development in society precondition increase both local and global problems. Thus, the modern marketing actively gains the social and ethic form, mass individualized marketing.

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10.2. EU experience in the formation of Ukraine marketing standards

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Among the priorities of foreign policy of our country is its entry into Europe, establishing Ukraine as an important economic partner and membership in the EU. Of course, the question of integration of Ukraine, like other countries, is at the intersection of determining existing opportunities and threats of the process, but is characterized by a pronounced strategic dimension. With acquisition of membership in CE Ukraine largely got around the level of accordance to the first of the Copenhagen criteria [1]. But the question of achievement the level of compliance with standards and criteria related to economic development and competitiveness of production in Ukraine is more difficult. The implementation of priorities, each covering a large number of specific measures relating primarily to standardization and licensing systems, conformity assessment, metrology and accreditation, has to ensure the solution of this question. Considering the high level of versatility and potential of Ukraine, the further activation in the direction of European interaction actualizes the questions about the study the European experience building and marketing standards.

The issue of research of implementation features and compliance with marketing standards of practice is investigated in the works of many national and foreign researchers. An important contribution to the study of the formation of the European Economic Area and integrate it in Ukraine, as well as standardization features made such scientists as P. Haidutsky O. Pavlyuk, I Tavlyuy, S. Yatsyshyn. They analyzed the regulatory basic of Ukraine and the EU, highlighted the main differences in process of standardization, defined measures to further integration of Ukraine and the EU, and noted major differences in marketing standards.

As you know, the EU is one of the large-scaled, solvent innovative markets that are willing to fill such countries as Japan, USA, China, Brazil, India, Russia and others. According to P. Haidutsky, innovative production in the EU exceeds 75%. This potential attractiveness of European integration has been reached by nobody yet. EU – a territory of highly innovative economy. Average GDP per capita in the EU is almost eight times higher than in Ukraine, and 2,5 times – than in Russia [2]. So the following European guidelines provide domestic marketing standards with appropriate vector of development, and holding to certain requirements – new opportunities for the revival of certain industries, provide the opportunity to create additional comparative advantage on the market in a globalized economy. A major step in

deepening the position of trade relations between Ukraine and the EU was the agreement on free trade area (FTA), which contributed to the convergence of the domestic economy to the European standards, adapting it to EU policy and expanding presence in the Ukrainian market of new EU member states.

The intention to integrate Ukraine into the European space indicates implementation of the Law on the approximation of Ukrainian legislation to EU norms, according to which, in 2015, Ukraine has canceled about 15 thousand. NSSs of Soviet Union and took about 2,7 thousand technical standards that are harmonized with European and international. At the same time also adopted as national standards some ACAA for some groups of industrial goods, which make it possible to export them without additional certification to the EU [5]. It is almost 2 times more than all the previous 10 years, but not enough to reach the required level of harmonization (8 th., Or 80% of current European standards) for associate membership in the EU.

The existing principles of integration of the domestic economy help to define sustainable development direction, provide an opportunity to solve specific tasks in a certain period of time, considering the interrelation of internal and external factors that contribute to the creation of competitive advantage. Summary of the authors on different approaches to the characteristics of the EU integration made it possible to identify signs of Ukraine's integration into the EU and isolate place in this system of marketing standards (fig. 10.1).



Figure 10.1. The standardization system and signs European integration of Ukraine [2-3; 11]

Thus, the system of marketing standards determines the existence of certain features of the integration of Ukraine into the EU and provides

an opportunity to ensure the proper use of established economic conditions and create strategic competitive advantages. The presence of certain signs is urgently necessary condition for integration, and their distribution in production (with the use of EU standards or their harmonization) – sufficient factor in this process. The prospects of Ukraine’s integration should lead to obtaining a certain result in industrial and commercial, social and other spheres, without which integration is difficult to achieve. However, we believe that an important (especially in conditions of deepening economic crisis) is the awareness of opportunities and the likelihood of the challenges for the national economy during the integration. The neglect of strategic targets and objectives that were very important in the initial phase of integration, as experience shows, have contributed to the technological backwardness of many industries, environmental degradation and falling social development, the use of non-market methods of government support, etc. [3].

At the same time we note that international standards and EU standards are the driving forces behind the creation of innovation and increase the competitiveness of the EU as they provide an opportunity to remove trade barriers and increase the safety of products for consumers. Constantly the work that is related to the conduct market surveillance and safety products, safety and free circulation of industrial goods, capital and labor to facilitate business relations through the implementation of important principles of global openness and transparency, consensus and technical compliance, is making [4]. Despite the fact that the first steps towards harmonization of standards in marketing of our country has already been made, it should be noted that there are fundamental differences in approaches to standardization in Ukraine and the EU (table. 10.2).

Table 10.2. Approaches to standardization in Ukraine and the EU

Sign of standardization	Ukraine	EU
Key administrators of creating standards	governmental authorities	market
Parameters of product safety and monitoring their compliance with standards	governmental authorities	governmental authorities
The authorities that are developing standards	governmental authorities	The market participants: consumers associations, SMEs, producers associations, environmental activists, etc.

Along with the difference of approach to standardization, in our opinion, there are barriers on the speedy implementation of some EU marketing standards at enterprises of Ukraine:

1. Firstly, the unwillingness of the state to change the system, in particular, there is need for training auditors, accreditation of laboratories.
2. Secondly, the introduction of safety at enterprises of food chain.
3. Thirdly, it is difficult to overcome the resistance of workers to change their minds in the direction of customer orientation.

Given the above, in theory, to develop a system of marketing standards, scientifically substantiate indicators – technical task, but turn them into effective mechanism – is difficult. Usually getting our country certificate of conformity is a marketing move to promote products. In the Ukrainian reality there is weak enough system of monitoring compliance with standards, and generally not a certificate should be the main goal, but the control system aimed at optimizing costs, which will help improve product quality, and will increase sales. In this aspect, we agree with I. Tavlyuk that «for production of good quality it is necessary to move the focus directly on the process and all the key elements: suppliers, employees, production equipment, production facilities, a warehouse of raw materials and finished products, waste and so on». All these elements can lead to the appearance dangerous factors in the product: ill employee is a source of biological hazards for foods (viruses, bacteria), threadbare filter in an equipment – will lead to the emergence of commodity of physical dangers and others like that. All this is to systematically identify and control. Therefore, domestic enterprises are introducing mandatory risk analysis, the Hazard and Critical Control Point (HACCP) [5].

The necessity of forming the country's favorable conditions for participation in international cooperation, access to international commodity markets, cooperation with foreign investors, requires an examination of experience implementing marketing standards in the leading countries the world and the EU.

For example, in the US in 1911 Association of Advertising Club of America presented the first code, which showed the problem of misleading advertising. It was the basis of the first laws on the advertising of many states. In 1920 the Bureau was to improve business practices, operating so far at both the local and the national levels. In those same years, developed the Code of Advertising Practice of the American Association of Advertising Agencies (the so-called «Four A» – American Association of Advertising Agencies, AAAA). In 1940's «Four A» gained approval «Program of mutual exchange of advertising». In 1971, representatives of the American Association of Advertising Agencies, the American Advertising Federation, the Association of national advertisers and improvement

of business practices met under the National Council for monitoring of promotional activities. During the meeting they developed the basic principles and principles of the National Council for the observation of promotional activities, functioning now. Jury appointed by the Council designed to settle disputes, disassemble complaints seek a ban and the removal of unfair advertising. Today the American Association of advertising agencies unites more than 400 companies with more than 1,000 branches in the US and 375th 55 other countries. Association members gain for over 80% of all national advertising sales. The Association has its own fund, money of which is spent on subsidies for scientific research in the field of advertising. Research Committee «Four A» has been studying public opinion research of perception of advertising products, monitoring new trends regarding the form and content of advertising and provides data on the size of the advertising market. In addition, the «Four A2 coordinates the activities of advertising agencies aimed at developing ethical standards of advertising. Association developed «Standards of services provided by advertising agencies», «Standards of advertising agencies», «Creative Code», «Code of Ethics advertising during political campaigns», standard forms of contracts for advertising. These documents are supported by leading American firms and adapted in many countries. They are widely used in advertising practice. Like the US, advertisers formed similar associations in other developed countries [6-9].

In the UK, major self-regulation organization of advertisers is Commission on Advertising Standards (Advertising Standards Authority – ASA). With the participation of British organizations codes of advertising and sales promotion have been developed. Codes have no direct legal power. In the role of censors are the media. Victims of unfair advertising can submit complaints to the ASA. Once a month the Commission publishes its decisions, which are widely quoted by the media. In the case if the complaint is recognized as fair, advertising agency risks its reputation and loss of customer trust [6; 8].

Organization that assumed the role of leader in the advertising self-regulation in Europe is the European Advertising Standards Alliance (EASA). A. Gray, CEO of EASA, defines the place and the role of self-regulation in advertising: «Self-regulation works if supported by most firms sector and is the norm in most EU countries. Thus the laws of the country must leave space for self-regulation (ie, not all aspects of the law should restrict some aspects need to leave to regulate industry standards). Self-regulation – is a part of EU policy. It should establish clear rules». European network of self-regulation which is coordinated by EASA, provides self-regulatory organizations to ensure a consistent

approach, demonstrating awareness of social responsibilities advertising industry. The document, developed by the organization («Guidelines on self EASA») actually became the basis for the development of self-regulatory standards for advertisers of all European countries. This organization is reactive, that is – fast, free and independent in making decisions on complaints; provide services to consumers and businesses; sanctions (suspension or modification of display advertising). It should also be active, that means to consult, provide training and promote awareness; monitor current practice with the Directive. Self-regulatory organization has a «playing field» for fair competition and help to identify good business practice. EASA – European alliance of advertising standards. It brings together 34 Self-Regulatory Organization in 32 countries (in Europe such exists in almost all EU countries) and 16 industry organizations, advertisers, advertising agencies, media (TV, radio, print media, outdoor advertising, direct marketing, digital media), e-retailers and sponsors [6; 9].

NGOs advertisers in other countries are also working actively. For example, in Germany – the Association of advertising agencies, in France – Federation of advertising agencies, in Sweden – Swedish federation of advertising agencies and so on. Many organizations have their own print media. Every national advertising usually relies on the Consolidated ICC Code of Advertising Practice and marketing communications, which reflects the cultural, commercial and legal traditions. New edition of 2006 sets high standards of commercial communications that promote the efficiency of international markets and achieve substantial benefits for consumers [7-8].

In 2010, the European organization of self-regulation received 53,442 complaints about 29,524 ads. For comparison, in 2005 55,305 complaints were received, in 2006 – 49 070 complaints, in 2007 – 49,921 complaint, in 2008 – 56,864 complaints, in 2009 – 56,281 complaint. Thus the most complains are about misleading advertising. Also, consumers worried about taste and decency, social responsibility, safety and health and so on. All European national codes of advertising practice support the idea of gender equality and respect for people. The differences that were found in the rules reflect different cultural values and social traditions that exist within the EU and Europe in general. That is why self-regulation rules often appear as a default to the same management standards that provide guidelines - how to do to get a quality product [6].

Modern marketing system in Ukraine is a complex interacting community of advertising and marketing agencies, research and consulting firms, manufacturing companies, specialized NGOs, media and other institutions that contribute to the promotion of products, development of

new brands and effective development of the national business [9-10]. It should be noted that, in accordance with marketing standards ISO20252, there are certified more than 300 companies worldwide, specializing in market research, among which only one is Ukrainian. In 2011, Bureau Veritas Certification Ukraine conducted the audit whether the company Taylor Nelson Sofres Ukraine (TNS) meets ISO20252 requirements.

This company is one among other TNS companies that is included in the Kantar Group, research division of global advertising and communications holding WPP. Code of Conduct and Ethics defines the following ethical standards in marketing and PR: 1) support honest relationships with clients and colleagues; 2) preservation of confidential information and trade secrets; 3) the use of methods that do not humiliate other participants in PR-activities; 4) professional cooperation with other members of the Association for the purposes of the Code [10].

Further work on the compliance with certain EU marketing standards and successful integration into the European space can provide domestic customers with following benefits:

1. *A wide range of imported products at lower prices.* Now all imported EU products must pass inspection for compliance with Ukrainian standards. Therefore, firstly, the manufacturer or importer bears the additional costs which he lays in the price of products. Secondly, because of the existing barriers, not all European manufacturers are willing to spend time and money for the sake of getting on the Ukrainian market. When these barriers are eliminated, Ukrainian consumers will have more qualitative European products at lower prices [11].

2. *Manufacturer guarantees the safety of products.* According to European regulations, manufacturer is fully responsible for products safety. In Ukraine, even the seller can be prosecuted for improper quality goods, although he is only an intermediary between producer and consumer. Thus, there is no any existing responsibility for those who tested these products on behalf of the state. There is the principle of «no-fault responsibility» in EU marketing standards: it is the producer himself who must prove his innocence [11].

In addition to consumers, there are some benefits of implementing EU standards for domestic manufacturers:

1. *The opportunity of entering the EU market.* Today, in order to export industrial products to the EU, Ukrainian producer has to pass the test of its products and obtain a certificate of quality in one of EU countries. This results in considerable costs for domestic producers, increases the value of its products, so he becomes less competitive in the European market. After Ukraine harmonizes its legislation and standards with

European ones and concludes the relevant agreement with the EU, producers will receive all the documents and certificates in Ukraine significantly cheaper and easier, and will be able without any additional checks to sell it in the European Union [11].

2. *Uniform and consistent product requirements.* Nowadays in Ukraine, there are rules that are often outdated and contradict one another: for example, along with the technical regulations, sanitary rules and regulations and regulations on health and safety can also be applicable to products. Ukrainian entrepreneurs actually cannot make products that fit the bill. In addition, it does not only lead to overregulation of the business environment, but also creates scope for abuse of the licensing and supervisory authorities. There is a single regulatory regime in EU: one product may be subjected to one or more directives that cover a variety of aspects of the production, but any additional requirements exist. As a part of its commitments to the EU, Ukraine should remove all duplicate or conflicting requirements for products and harmonize their legislation and standards with EU requirements. Manufacture will have clear requirements instead of many uncoordinated ones. This will be a major step towards deregulation and will improve the investment climate [11].

3. *Ability to develop business of delivering certification services.* In Ukraine, there are ten accredited laboratories where manufacturers can obtain documents that their products were tested and comply with the EU standards (quality certificates can only be obtained in one of EU countries). When regulatory environment harmonizes, there will be opportunity not only to test products, but also get certificates of compliance in Ukraine. This service will be relevant not only to Ukrainian companies, but also for Chinese, Latin American, especially for those who want to enter the European market [11].

It should also be noted that marketing standards do not affect the regulatory process of technology and production techniques, they are different in different countries, acceptable by national standards. They regulate only the basic, fundamental aspects that affect the formation of the marketing policy of the company, display of marketing results and communication policy of the company.

Most countries use a consistent scheme of transition to EU marketing standards (figure 10.2).

Current conditions of adapting marketing standards of Ukraine to EU demands require to consider theoretical principles of integration and the presence of certain internal circumstances, including the following: low competitiveness of most domestic products, imperfect mechanisms

of state regulation, inconsistent economic reforms, internal circumstances, ignoring the experience of European Union integration.

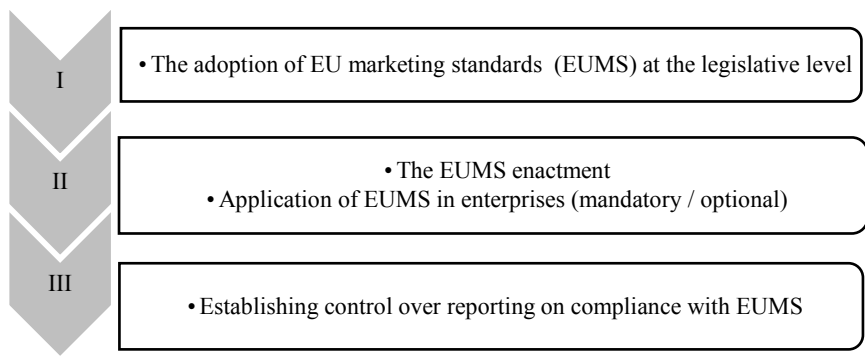


Figure 10.2. Phased chart of transition of country to EU marketing standards [6; 8; 13]

Based on the above, we propose the procedure for the formation of EU standards in Ukraine (fig. 10.3).

The study of these problems is a prerequisite for accelerating the process of harmonization Ukrainian standards with the EU standards. In deciding to what extent advertising campaign can be standardized, experts in the field of advertising will certainly take into account the features peculiar to specific commodity categories on the local market. Some products are more suitable for standardization, namely high-tech products and related products such as cars, computers, audio-visual equipment, etc., as well as products from the category of luxury, focused on the emotional and imaginative perception (perfume, clothes, jewelry). In addition, standardized strategies and advertising campaigns are becoming more effective when the product has a utilitarian purpose and its advertising is informative or the attractive features of the product are closely associated with the peculiarities of national character. It is easier to standardize advertising campaigns in markets with a close level of economy. Instead, campaigns for food and beverage practically are not subjected to standardization as traditions and eating habits are closely related to national culture. Furthermore, it appears that it is easier to standardize the advertising of a new brand than the old and famous one. In the markets the old brand exists at different stages of its life cycle, which leads to incompatibilities of different advertising campaigns.

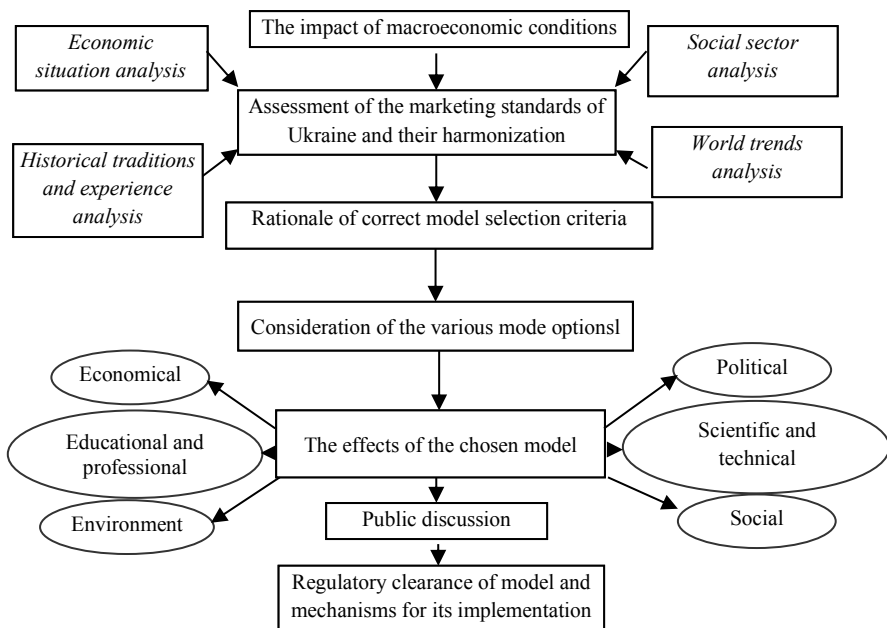


Figure 10.3. The procedure for forming a model of marketing EU standards development in Ukraine

Under the proposed model of EU marketing standards in Ukraine, the successful implementation of these standards at the enterprise level depends on key factors outlined below.

Clear purpose. The company must be aware of the basic goals that are to be reached as a result of the introduction of EU marketing standards: to export products to the European market, to increase the number of customers, to reduce operating costs etc.

Support for guidance. The role of top officials is crucial. In this respect it is important for the head not only to decide when to start the work, but also to take active participation and support throughout the project.

A detailed plan of standards implementation. There should be assigned responsible persons and limits of their responsibilities, timing and resource requirements.

Ensure the planned human, financial resources, time.

Identification and evaluation of the project (standardization) results according to the goal.

Monitoring the implementation of and compliance with the targets of the project.

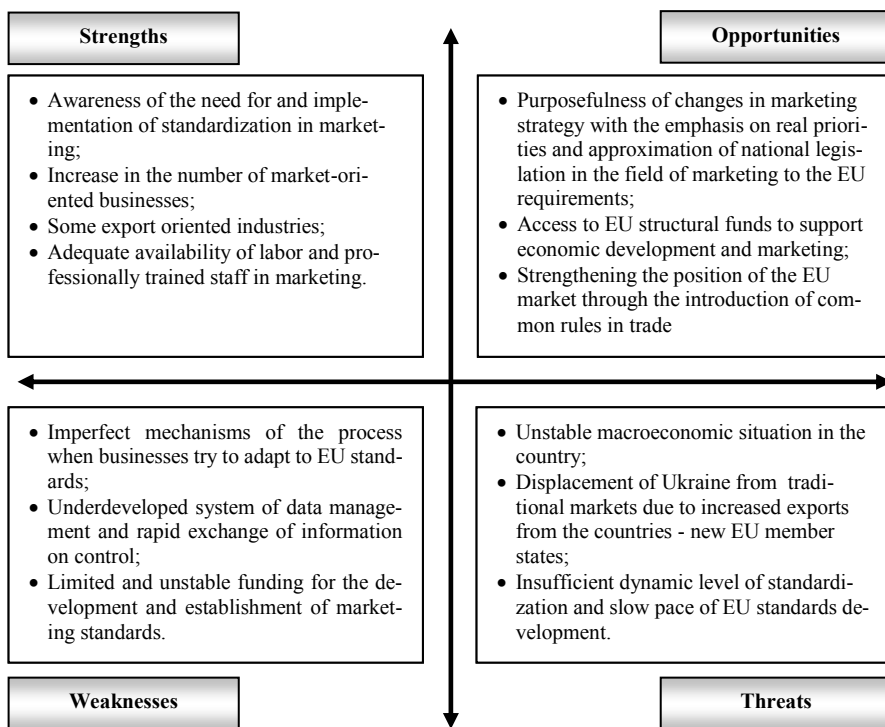


Figure 10.4. SWOT-analysis matrix of standardization policy in terms of its adaptation to EU [13]

While implementing EU marketing standards, EU protectionist direction should be taken into account along with the positive experience. The desire to maximize its strategic priorities stimulates the process of adaptation to the European model and at the same time increases the threats and risks from the introduction of the model, which are identified by using SWOT-analysis (fig. 10.4). During the development of the individual elements of EU standards, it is appropriate for domestic enterprises to proceed with consideration of those elements as a balanced system of measures and mechanisms of state influence on production, that are based on the triune approach and ensure the implementation of economic, environmental and socio-cultural functions.

Since Ukraine is a part of Europe and is in the process of integration into the world economic space, the transition to the EU marketing standards is imminent. Implementation of EU marketing standards is primarily aimed on: creation of an international image of the product; reducing

the cost of development and production of advertising; acceleration of simultaneous entering the markets of different countries; improving the efficiency of advertising impact as the benefits of a product or service are perceived equally in any country and supported by identical positioning. Thus, the use of marketing standards is a specific tactical tool for promoting products to overseas markets and is seen as the willingness of the state to reforms and integration into the world economic community.

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10.3. Stakeholders' marketing: interests coordination in the triangle «state-seller-customer»

Nevertiy A.S.

Nowadays business success in the market depends not only on the production volume or turnover, but on the customer's perception of its activities, the mass media, government officials, business partners, etc. Every year the need of communication with these groups is recognized by business as an increasingly important management task. These changes are reflected in the new concept of «Stakeholder's Marketing» (Stakeholder Marketing) – development of relationships with stakeholders [1]. The basic definition of the «stakeholders» concept gave R.E. Freeman (R.E. Freeman) in 1984 [2]: «Stakeholder is a group (the individual) that may influence the goals achievement by organization or the organization as a whole. «Therefore, the stakeholders are all organizations, groups of people or individuals, whose contribution (work, capital, resources, purchasing power, information distribution about the company, etc.) is the basis for the organization success. Theoretical and applied issues of stakeholders approach were considered in a number of foreign and domestic research works» [1-10]. However, the majority of authors consider the theory of stakeholders at the micro level – at the level of the enterprise (organization). We would like to extend this concept and apply the theory of interest coordination at the institutional level (macro-level) on the example of trade. And also to consider the stakeholders' marketing as a process of interests coordination within the institutional trade triangle «state-seller-customer».

The trade, on one hand, is an important element of economic processes that ensures sharing of resources, and, on the other hand, is designed to perform a social function, supporting effective and equitable resource allocation. The state of trade reflects the level of society development. The level of trade relations development affects the wealth and economic society opportunities, which impacts in turn on the stability of the national economy. The modern concept of trade existence can be defined as the process of implementing equitable agreements between a seller and a customer, involving the state acting as the mediator in these arrangements and the guarantor of their compliance [11].

This concept provides the need to consider the triangle of «state-seller-customer» as the basis of social partnership and interests' coordination in modern trade [11]. We explain the choice of such triangle below. Initially, we should apply to the philosophical nature of the trade, to highlight the mandatory conditions which make possible the functioning of modern trade. According to our view, these mandatory conditions can be combined into five main groups. Moreover, all of the following groups of conditions are presented as unreservedly applicable. Having the failure to comply with even one of these criteria makes impossible the trade existence [12]:

1. *The ability to carry out the institutional agreement.* It is determined by the existence of viable mechanisms to achieve institutional agreements between agents in the institutional environment.

2. *Quantitative indicators of goods and services.* Institutional arrangements in trade are impossible, if there is no the subject of agreements – goods, services and their ownership rights. There should be the availability and sufficiency of goods and services in trade for the purpose of redistribution via trade.

3. *Qualitative indicators of goods and services.* For the purpose of redistribution of goods and services in the field of trade there should be coincidence with their quality characteristics. For the purposes of the institutional trade environment, the category is not identical to the concept of product demand, adopted in the market economy. Demand is the market capacity expression, dependence between the price and goods amount, here means the socio-economic goods and services demand aspect, namely, the possibility and desire on the agents' environment part to maintain the goods and services quality characteristics, redistribute the trade.

4. *The seller's income.* The seller's participation in the trading system is impossible without the reward of its activities. The seller's income ability from the trade is a necessary condition of trade existence.

5. *The customer's solvency.* The customer's participation in the trade system is impossible if the institutional agreements conditions, offered by the seller, are unattainable for the customer. The possibility of lowering consumer costs for the purchase of goods and services to the level at which the possibility of their acquisition is achieved, is the last mandatory condition for the trade existence.

Various subjects of trade relations may differently refer to the compliance with the above conditions, demonstrating the whole attitudes range, from unconditional consent with these terms to categorical rejection.

The role of agents in the process of institutional change is considered by various researchers from different perspectives. A.A. Yakovlev [13, p. 84-87] V.L. Tambovtsev [14, p. 37-40] indicate that the social and economic agents form «demand for institutions» and are the root causes of the institutions formation. G. Kleiner does not agree with them, calling incorrect consideration of existing institutions from the point of view of usefulness for the various agent's categories that do not have sufficiency for the formation of the certainty demand concept. According to the researcher, the features of the individual agents' behavior affect the institutional change process, but do not determine it completely [15, p. 416-417].

According to our views, the institutional trade environment as a set of variables and constant elements, is formed within the relationship of the agents environment (variables, elements) that specifies the medium motion, the conditions of the environment (constant elements) that specify its basic characteristics.

The theory that the institutional policy in the context of institutional change has three types of agents: legislators, rights holders and duty bearers, is given by the modern Icelandic researcher T. Eggertsson [16, p. 11]. Starting from T. Eggertsson classification, that all important institutional environment trade agents, can be classified by us in three groups depending on the environment functions: the state, the seller and the customer, and they will form the social relationships triangle and groups of interested stakeholders in modern trade [12].

Let us characterize these groups more carefully.

The state. This group includes all environment agents, performing in the trade higher administrative, supervisory, regulatory and mediation functions in the institutional agreements between the seller and the customer, and is recognized as those by the seller and the customer.

The seller. This group includes all the environment agents, performing in the trade the transfer function of goods, services and ownership rights to the customer through the transaction of purchase and sale, and is able to affect the terms of the transaction. The seller may be a producer of goods

and services, transmitting them to the trading system for resale (by the customer in this case can act as the end user, and also the reseller), and the goods, services and ownership rights, which sales.

The customer. This group includes all the environment agents, performing in the trade the function of purchasing goods, services and ownership rights by means of the transaction of purchase and sale with the seller. The customer is not only the ultimate consumer, but the middleman who buys the goods, services and ownership rights for resaling. The identity of each subject of economic relations only to one institutional trade environment agents' group is unconditional. Each individual can simultaneously belong to multiple agents' group, depending on the functions one performs in particular time in the trade environment.

Taking into the basis the agents' activity in the environment, for a more precise definition of the agents' relationship to binding environment conditions let us select six levels of agents' interest and activity:

1. *Implemented active interest.* The agent is interested in observing the mandatory conditions and consciously making efforts to comply with it.

2. *Implemented passive interest.* The agent is interested in observing the mandatory conditions, but is making efforts to comply with only under the other agents' coercion.

3. *Unrealizable interest.* The agent is interested in observing the mandatory conditions, but has no significant effect on it.

4. *Impossible lack of interest.* The agent is not interested in observing the mandatory conditions or showing him indifference, but has no significant effect on it.

5. *Implemented passive disinterest.* The agent is not interested in compliance with the mandatory conditions, or showing him indifference, and other agents' lack of barriers may prevent its implementation.

6. *Implemented active disinterest.* The agent is not interested in compliance with the mandatory conditions and deliberately preventing its compliance. This agents' activity corresponds to the concept of opportunistic behavior.

On the next step we will construct the matrix of the egoistical agents' interests of the institutional environment on the degree of each group's interest in each condition, assuming that everyone is interested solely in respect of their own interests, ignoring the interests of other agents' groups (model as is) (table. 10.3).

The state is passively interested in the effectiveness of all five groups that are the mandatory conditions of trade relations, and actively is not interested in either. Firstly, maintaining each of them in equilibrium is connected with necessity of additional force application, the implementation of legislative and administrative work that increases the state apparatus

cost, and is in contrary to the state desire to minimize management costs. Secondly, the state in trade is not the direct consumer of their work results, acting ultimately in the seller's and customer's interests (adjusting their relationship sphere). The state has all the necessary tools for the influence on any of the mandatory terms of the institutional trade environment.

Table 10.3. Stakeholders' interests' egoistical matrix in the trade

The institutional trade environment prerequisite	The levels of stakeholder's interest and ability to influence		
	state	seller	customer
The opportunity to carry out an equitable agreement	2	5	3
Quantitative indicators of goods and services	2	5	3
Qualitative indicators of goods and services	2	4	3
The seller's income	2	1	6
The customer's solvency	2	5	2

For the seller, the primary objective is generating income from the trade. It is the fundamental rule of the seller's institution activities and functioning. Any state impact is impossible to convert or change the seller's priority, because it is inherent in the very nature of this institution. You can't count on voluntary seller's switching on the provision of other groups factors priority at the expense of the profit. It can only be forced by the state (the influence of the state institution) or social mechanisms (the influence of the customer's institute). The seller is not objectively interested in the quality of goods and services, or indifferent to their quality, because it is not their ultimate consumer. The seller's influence on the quality of goods and services is mediated. And also, there is no the seller's interest in the efficient distribution of goods and services. Moreover, the inefficient allocation of goods and services may create pent-up demand, which could be the seller's competitive advantage – source of profits. The seller is not interested in maintaining the social and psychological trade environment capacity if its maintenance costs are in conflict with the main seller's goal the reception of trade income. It can be assumed that there is only some minimal seller's interest in the environment capacity because it simplifies the dialogue with the customer, sales the forecasting, the situation analysis. Though, on the other hand, the difficult socio-psychological situation in the trade can also give the seller a competitive advantage, as being disoriented by the customer it is easier to negotiate on more favorable seller conditions.

In the same part of the institutional environment, such as minimizing costs for goods consumers, the seller will undertake opportunistic behaviour, as the satisfaction of the customer needs is in conflict with the priority the sellers' tasks.

The customer's priorities are to minimize costs for the goods and quality purchase. The customer is passively interested in the social and psychological trade environment capacity, since it facilitates the goods acquisition, but the customer's degree of influence on this condition, is minimal. The customer is passively interested in the efficient goods distribution, because if the distribution is inefficient, he may remain without the goods, which is contrary to his interests. The mechanisms of influence on the efficient goods is attribution to the customer is not available. And in this environment element as the receipt of income from goods trade, the customer does the opportunistic behavior, the seller's needs satisfaction is in conflict with the priority customer's tasks. It is appropriate to assume that the degree of influence of such opportunistic behavior on the institutional state environment from the customer's part is less counter than opportunistic seller's behavior influence. This may have two explanations. Firstly, the level of organization of the customer's institute (due to the multiplicity and diversity of the institutes representatives) objectively below the level of the organization of the seller's institute (the less institute, and therefore more capable for concerted actions). Secondly, the customer's priority is the only one, and all the main seller's efforts, whereas the customer's key element of the institutional environment contrary to only one of the three critically important for the customer's conditions and only part of the customer's effort is intended to counteract this seller's problem.

The received matrix shows the presence of internal contradictions between agents' groups in relations to the environment, each agent acts solely in its own interests, prejudices to the interests of other agents and other groups (tab. 10.4). For each of the five conditions, the agents' group exists, which is not interested in this condition in varying degrees.

Clearly visible there are the state organization and the mediation mission in the real institutional trade environment. The state, being in a constant state of interest to the compliance with each condition that has the potential to act as a capable organizer of the first three terms of the environment, and is perfect for the role of the mediator between the seller and the customer in reaching agreements between them on the fourth and fifth conditions.

In their attempts to build an ideal coherent matrix of institutional trade environment, we will be guided by the assertion that the perfect (socially-oriented) matrix must be the result of processing of the real

(egoistical) matrix so that it maximally ensures each institutional environment agent's interests (in this case, not hurting the other agents' interests). This should maximize the efficiency of the permanent institutional environment elements.

On the basis of such installations, the ideal institutional trade environment model involves the transformation of any agents' disinterest in the active, and where it is not possible, passive interest, or indifferent (neutral) attitude to the condition. Moreover, in case of impossibility of one agents' group interest there should another agents' group contribute that can influence this condition (table. 10.4).

Table 10.4. Stakeholders' agreed interests matrix in the trade

The institutional trade environment prerequisite	The levels of stakeholder's interest and ability to influence		
	state	seller	customer
The opportunity to carry out an equitable agreement	1	2	3
Quantitative indicators of goods and services	1	2	3
Qualitative indicators of goods and services	1	2	3
The seller's income	1	1	4
The customer's solvency	1	4	1

The egoistical trade environment converting into a coherent, socially-oriented environment depends on stakeholders and attitudes change towards the mandatory environmental conditions.

If we consider the «institutional stakeholders» (that is, agents' group, the institutional environment) as a set of constituent animate participants whose work depends on the state and the agents role in the environment and the environment in general, it can be established that the role of the group depends on the number of group members directed their intellectual capacity and internal self-organization, concentration on the task.

The state agents' group number of participants is in the least. Civil servants, not all but only having the direct impact on the process of trade management, as well as persons not in the civil service, but performing specific state functions in the trade are referred to this group. The sales' group consists of agents in the environment, or otherwise engaged in the goods sale, and numerically superior the state group but inferior to the customer's group. The most numerous group is the customers',

representing somehow the entire state population, including the sellers, and the members of the state group in cases when they are goods consumers.

The state solves many problems, among which the trade reform maintaining the prerequisites for the institutional environment functioning that is only one of them. The customer solves at least two major goals, which include the costs minimizing and the acquisition of goods quality and expects the other agents' decision solving at least two problems: the efficient goods distribution and the healthy social and psychological environment formation. However, only the seller is focused on one thing – making a profit from the trade. The degree of agents' groups concentration at the level of their influence on the institutional environment depends on the tasks multiplicity / singleness.

In our opinion, the above-described node of contradictions in the triangle «state-seller-customer» is the main problem of the socially-oriented institutional trade environment building. Built the egoistical institutional trade environment model allows to observe the effectiveness of each institutional environment conditions, directly or indirectly, at least two agents' groups are interested, and, as a rule, the third is not interested. Thus, to find the effective solutions it is better to move, uniting the interests of two stakeholders' agents groups, and forcing the third to the interest. It is obvious that in such combinations one of the interested parts always belongs to the state, the other part to the customer or the seller. This confirms the state primary and leading role in the process of forming an effective institutional trade environment, which is an important condition for the trade relations effectiveness.

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10.4. The genesis of marketing partnerships concept and features of its application in the field of services

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The falling of purchasing power of a population has left to decline in consumption of services in various fields of social life. It significantly slowed down the development of services sector. Thus Ukrainian are less likely to visit restaurants, to take part in cultural activities, to have a rest and enjoy the services of travel agencies less than before and they also do not trust banks and other financial institutions. Overcoming the crisis, reforming the economy and improving living standards is the most important argument in favor of development of the service sector, but recovery of consumers' demand depends not only on economic factors. The important role is given to marketing tools, and their importance will only increase with the aggravation of the competitive environment. Among a variety of these tools of marketing influence on consumers the most effective are those that allow consumers to frankly understand the nature of the service, its necessity, usefulness and fairness of pricing at a high level of consumer satisfaction by consuming this service. The concept of consumers' partnership, using the principles of ethical marketing allows to combine these tools best with each other and achieve the desired effect of interaction.

Scientific works of Kotler Ph. [1], Pavlenko A. [3], Reshetnikova I. [2; 4-5], Bahiyev G. [19] are devoted to research the marketing evolution and concepts of its implementation in Ukraine. Features of marketing services are reviewed in details in the works of Lovelock K. [21],

Danylyshyn B. [20], Sahaidak M. [15]. Implementation mechanisms of marketing partnerships were studied by Scandinavian school of marketing and Ukrainian scientists, such as Romanenko E. [6], Gordon I. [18], Bolotna O. [22], Filyanov P. [16], Golysheva E. [12], Deitch M. [11], Grebeshkova O. [10], Koval T. [9], Knyazyk J. [8], Moroz L. [7]. These scholars use different terms to define the essence of the marketing relations concept, such as: relationship marketing, partnership marketing, affiliate marketing, the paradigm of relations, customer relationship management, network marketing. In our opinion, the reason of this is a personal understanding of scientific English terminology and its translation, therefore there are diverse interpretations of terms and substance. Despite this fact, there are some scientific works of Ukrainian scientists highlighting the essence and issues of the conceptual apparatus of relationship marketing, regulation mechanisms of relations between enterprises and their counterparties. They also examined the question of individual marketing as the main innovational business strategy in the terms of globalization. However, insufficient attention is paid to the usage of ethical marketing tools and explanation of their meaning in forming loyalty of consumers to enterprises – service providers.

The field of services in its modern sense, comprises industrial, social and institutional areas that focus on service. Services have an important role in improving people's lives in their spiritual and physical development. The object of the service can be a person his or her tangible and intangible assets, his or her of close friends, pets, tangible and intangible assets of legal entities, as well as information, energy and so on. Thus the basic value added of the service is created by staff, technology or machinery. To sum up, due to Pavlenko A., Reshetnikova I, the service is the result of the interaction between objects and subjects [3, p. 370].

It should be noted that services have some characteristic features that distinguish them from the goods, these are: intangibility (intangibility feature), the inseparability of consumers (individual nature of consumption), failure of storing (cannot be accumulated), the inseparability of production and consumption of service, instability of quality, lack of ownership of the service etc. On this point, Sahaidak M. offers adding basic features of services, due to appearance of the modern services related to innovative technologies and their usage in the creation process of high-tech equipment that requires additional competencies of staff. It includes intellectualization process of creating services (usage of intellectual and creative abilities of staff in the creation process of customized service that can satisfy consumers' unusual requests and needs) and representativeness of consuming service and image of enterprise (status of consumer service, its level and quality of life, brand and image of

enterprise etc.) [15, p. 8-9]. Thus, in evaluation of the services' quality we should take into account not only the result but also the provision of services.

Despite of it, problems of a conceptual framework of partnership marketing, mechanisms of regulation of relationship of the enterprise with contractors, and also investigated a question of individual marketing are covered as main innovative strategy of the enterprise in the conditions of globalization have been spotlighted. At the same time, not enough attention is paid to such fields as using instruments of ethical marketing and justification its value in formation of the loyal relation of consumers to the enterprises – to service providers.

The field of services, in its modern understanding, covers production, social and institutional fields which are focused on public services. Services play an important role in people's improvement of life, and their spiritual and physical development. The object of service can be a person, his or her material and intangible assets, relatives, pets, material and intangible assets of legal entities, and also information, energy and so on. In that case, the main value of added service is created by personnel, technology or mechanisms. So, service as mark out Pavlenko A. and Reshetnikova I., is a result of activity of interaction of objects and subjects [3, p. 370]. It should be noted that services have special characteristics which distinguish them from goods, namely: intangibility (non-material character), inseparability from the persons consuming services (the individual nature of consumption), inability to storage (it is impossible to accumulate), continuity of production and consumption of service, instability of their quality, lack of the property right to service and so on. On that issue Sahaidak M., paid an attention to emergence of the modern services connected to innovative technologies and use in the course of their creation of the hi-tech equipment that demands additional competences of personnel suggests to add the main character signs of services, several new, namely: intellectualization of service creation process (using of mental, creative abilities by personnel during the course of creation of the customized service it is capable to satisfy non-standard inquiries and needs of consumers), and also illustratibility of consumption service and image of the enterprise that provides some service (the status of the consumer of service, his level and quality of life, a brand and image of the enterprise that provides some service etc.) [15, p. 22]. At the same time, during the estimation of the quality of service, it is necessary to consider not only result, but also process of providing service.

For the first time the concept of marketing partnership has been presented in scientific works of developers of the marketing services theory – representatives of the Scandinavian school of marketing in the second

half of XX century. Firstly, the term «partnership» was originally interpreted as the interaction between all participants of exchanges (networking). Specifically Gronroos K. indicates that network elements can engage in different types of interaction in which there is mutual exchange and adaptation. In the network there are not only the flow of goods and information, there may also be financial and social exchanges. All exchanges and all interactions affect on the positions and interests of the partners involved in the network. The interaction is not only initiated by marketer or seller, it may continue for a long time, even for several years. Networking model indicates that the exchange is not the prerogative of professional marketers, and therefore, the implementation is opened to all other members of interacting systems [1; 3].

For networking concept, in that peculiar interpretation, is inherent the perception of marketing not only as a cost-effective process in terms of its participants, but as a process of interaction in a social context of exchange participants and stakeholders, based on a system of building partnerships. On this point, one could argue that the concepts of networking and partnerships are identical, they have similar objectives, content and instruments.

It should be noted that the original concept of partnership was seen as a system of relations in the exchange process with all participants, including suppliers, intermediaries and even competitors. As a result of the evolution of the perception of that concept and its dissemination in practice, strategic partner alliances appear to jointly perform some certain specific functions or temporary goals. For instance, there are alliances in logistics, which are very common. Later, partnerships with customers separated. In 80s the concept of interaction (marketing relationships) with consumers has been appeared. According to Kotler Ph., the process of attracting and retaining consumers within the implementation of marketing interaction can be presented in successive stages of transformation from «potential customer» to «prospective customer», then to «client», «lawyer» and «partner».

According to Kuzmynchuk N., in the basis of the concept of marketing relationship or marketing interaction exists the assumption regarding what is much harder to win new customers than to increase the level of loyalty of existing ones. Therefore partnership relationship between the consumer and the company now guarantee a stable market position and the opportunity to increase profits [17, p. 85].

Hence, as Gordon Ya. concludes, the marketing partnerships is an ongoing process of definition and creation of new values, together with individual customers, and then joint obtaining and distribution of benefits from this activity between participants of interaction [18, p. 35].

Summary of different scientific views regarding the essence of the concept of «relationship marketing» is shown in the tab. 10.5.

Table 10.5. Scientific approaches to defining the essence of the concept of «relationship marketing» (based on [3; 7; 18; 22])

Author	Definition
Gronroos K.	<i>Relationship marketing</i> is to establish, maintain, and enhance relationships with customers and other partners, at a profit, so that the objectives of the parties involved are met. This is achieved by a mutual exchange and fulfillment of promises
Bitner M.	<i>Relationship Marketing</i> is a philosophy of business strategic <i>orientation</i> that focuses on keeping and improving current customers rather than acquiring new customers
Keller K.	Marketing of the relations – is directed to creation of steady business of concepts and business strategy which kernel is customer-oriented approach
Gordon Ya.	Relationship marketing is continuous process of definition and creation of new values together with individual buyers, and then joint obtaining and distribution of benefit from this activity between participants of interaction
Kotler Ph.	Relationship marketing is the practice of building long-term satisfying relations with key parties – customers, suppliers, distributors – in order to retain their long-term preference and business. Relationship marketing is the process in which the construction, cultivation and strengthening of strong value laden relationships with customers and other stakeholders occurs
Doyle P., Stern F.	Relationship marketing is a transaction between parties over a long period of time
Lambin Zh.-Zh.	Relationship marketing is directed to create and establish long and constructive connection with buyers. The main goal is creation of value for consumer. To support and expand a set of clients is a main objective within establishment of mutually beneficial relations. Benefits consumers can get are non-economic benefits, including: service, delivery time, guarantees of continuous supplies
Temporale P., Trott M.	Marketing relationship – is, first of all, a strong trademark, and this is achieved by the right combination of systems and processes that allows employees to understand better individual customers and create a dialogue with each customer with specific needs
Ambler T.	Marketing relations should be used with regard to specific programs aimed at building relationships. Building lasting relationships relates primarily <u>industrial marketing</u> , because there is a limited number of potential buyers
Stolyarov A.	Relationship marketing or partnership marketing is a long-term and mutually beneficial cooperation of production and consumption of services based on continuous individualized process with partners on joint value creation and subsequent joint distribution of obtained benefits between them
Motyna M.	Marketing interaction is a concept, focused on long-term relationships with customers and on meeting the goals of the parties involved in communication
Korchinov D.	Relationship marketing is a process of cooperation between the company and the consumer-supplier company, as a result of which both parties receive economic benefits

Table 10.5 continuation

Author	Definition
Garkavenko S.	Relationship marketing is a focus of marketing activities of the company on establishing long-term, structural, privileged relationships with potential customers
Chernysheva S.	Relationship marketing is a marketing activity aimed at building and maintaining long-term and interconnected network of its internal and external relations in order to obtain mutual benefit and effective enterprise development
Striy L.	Relationship marketing is a philosophy of marketing aimed at the establishment, maintenance and strengthening of mutually beneficial relations of cooperation between all members of the planning, production and distribution of goods, services and information to ensure long-term prosperity of the company, support and improve the well-being of its partners, consumers and society in general
Moroz L., Knyazyk Yu.	Marketing of partnership relationship is the process of establishing long-term relations of cooperation between the partners market on a reciprocal basis, to improve the efficiency of production and market enterprise, obtaining competitive advantages and expanding range of clients. The concept of relationship marketing is to form long-term relationship of cooperation and trust between market players in order to get bilateral benefits
Pavlenko A., Reshetnikova I.	Marketing network interaction comes from the fact that the market is a network that is also an interconnected set of exchange relationships between entities (companies, enterprises, firms, organizations and consumers). Marketing networking is an integrator of a large number of independent market entities in a single continuous process of creation and distribution of values that occurs together with end users and other participants in the interaction. The benefits of this activity are jointly received and distributed

After analyzing definitions that were shown in tab. 10.5, it should be noted that there is no consensus view of scientists to determine the nature of this concept. Under the approach offered by Pavlenko A., Reshetnikova I. [3, p. 112] market includes firms that supplement, replace cooperate or compete with each other, and each firm has a network of relationships (with suppliers, competitors, transport and logistics companies, intermediaries and consumers). In this case, the main idea of these relations is cooperation. Therefore, it is appropriate to note that relationship marketing tools are aimed not only to retain existing customers, but primarily on forming and maintaining partnerships with all stakeholders networking on mutually beneficial terms.

Prof. Reshetnikova I. offers to define subject of relationship marketing as a process of forming and maintaining stable relations of trust with the consumer, including all steps that are done now to better understand the needs and servicing individual customers. Also the scientist agrees

with the opinion of Kotler Ph., which identifies five different levels of relationship marketing implementation:

1) basic marketing provides the implementation of manufactured goods;
 2) reactive marketing, in which company-manufacturer by selling their goods assures consumer of immediate response to the questions, suggestions or claims;

3) responsible marketing provides through a short time after the sale, the manufacturer curiosity regarding compliance with consumer product quality expectations, and getting his proposals to improve the product or service;

4) proactive marketing, the company provides periodic appeals to consumers, offering more sophisticated or useful new products;

5) partnership marketing provides continuous enterprise interaction with customers, partners jointly seek ways to improve cooperation results.

In practice the most of national (local) service industries do not implement all levels of relationship marketing. As it has been shown in the tab. 10.6 level of partnership marketing depends on the number and size of customer revenue.

Table 10.6. Levels of relationship marketing based on the number of customers and profit [1]

Level of profit \ Number of consumers	High	Average	Low
Big	Responsible	Reactive	Basic or reactive
Average	Proactive	Responsible	Reactive
Small	Partnership	Proactive	Responsible

According to Bahiyev G. the basic idea of marketing partnerships is that the object of marketing management is not cumulative purchase decision, but the social relations with the buyer and other parties (stakeholders) process of sale becomes object of management of marketing [19, p. 51].

In this aspect we cannot disagree with the opinion of Katayeva A., who notes that the complexity of the goals, objectives and control technology partnerships is to create value system and social-oriented criteria for these relations to be coordinated using the results of the marketing audit [14, p. 29-30]. Also the scientist claims that the concept of marketing partnerships is the most progressive and socially-oriented acceptance of the principles of this concept is a condition of winning the competition.

Unlike the classic marketing theory in which priority is to study and anticipate consumer needs, and then create a product that will it meet, relationship marketing is based on the integration interaction of at least two parties (producers and consumers) to balance supply and demand and formation society is not a single consumption and sustainable development. So marketing partnership allows us to consider the final consumer in an entirely new position.

The evolution of the consumer, in terms of its rigor, awareness and experience, and the desire to implement their own individuality was the catalyst for establishing individual partnerships. The development of the concept of «partnership with consumers» and the emergence of means of personal communication helps to spread the concept of individual marketing. We can say that the concept of individual marketing is the result of the concept of partnership with consumers through individual means of communication (Digital marketing).

This approach was fundamentally new in comparison with classic American approach based on the use of the marketing mix, when sellers are active and consumers are passive.

In addition, the short-term relationships in course of one-time transactions concede to long-term partnership with using individual approach and communication.

The concept of individual marketing is considered in the Kotler Ph. [1] works, individual categories of the marketing are developed in the works of Reshetnikova I., Eremenko Yu. [5], Filyanov P. [16], Oklander M. [23] examines the issue of individualization of marketing impact in terms of the possibility of using the means of Digital marketing.

Continuous customer involvement in the process of creating a product, promotion and consumption in the new concepts, communicate with him and his perception of «equals» on the one hand, opens up many opportunities for producers of goods and services, and the other requires compliance with certain social obligations and ethical considerations.

The development of marketing partnerships today is also largely dependent on new technologies. To maintain continuous contact between the company and consumers of services using various communication channels: e-mail, web-site, call-centers, databases and software for them.

Modern development of economic relations between the company and contractors in the global market environment interaction happens by using the latest technologies to save resources, including time, to minimize operational steps, to diversify the production of goods or services based on the complexity of human needs and mass individualization of the offer.

In this regard, the manufacturer direct contact with the consumer often is lost quite often. It complicates the process of creation of partnership

with the consumer based on individual communications. Considering these factors, enterprises producing services for the construction of individual partnerships with customers and other counterparties based on ethical marketing must use an integrated approach using the tools of relationship marketing, partnership marketing, individual marketing, socially responsible and ethical marketing (fig. 10.5).

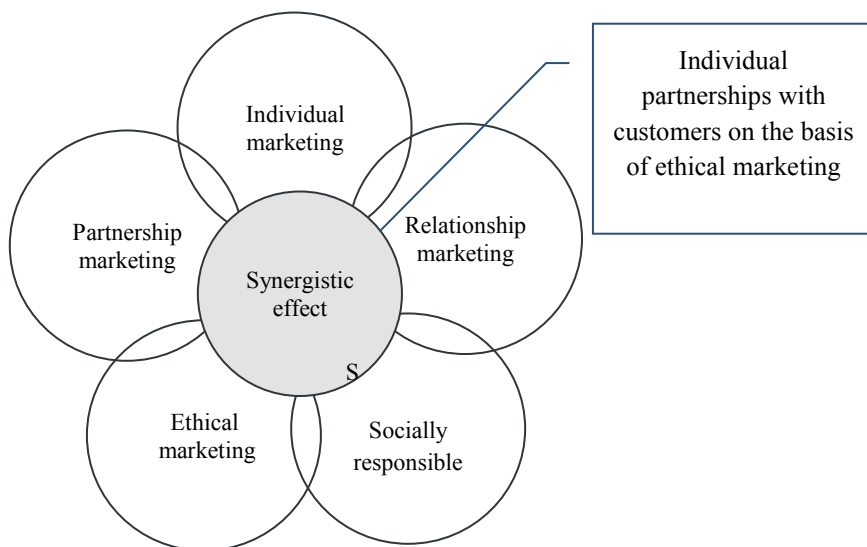


Figure 10.5. Interaction tools of modern marketing concepts in building partnerships with individual consumer (author's development)

Proposed approach is the methodological basis for developing specific tools of interaction with customers, providing unique nature of the impact, long-term relationship, open, equitable and ethical relationship with each other.

The approach is the methodological basis for developing specific tools of interaction with customers, providing unique nature of the impact, long-term relationship, open, equitable and ethical relationship to each other.

Features of the concept of marketing partnership are associated with absence of regular personal contact between consumers and service providers, increasing the complexity level of services that require the customer additional knowledge for their production, the use of digital technologies in the process of communication with consumers.

The service process is becoming more social, is due to multi-channel communication that brings to the fore ethical tools of interaction with the consumer. Further development of these statements will find its expression in the creation of a system of specific marketing impact tools on consumers with the principles of privacy, providing comprehensive, «balanced» service information and consequences of consumption, the principle of pricing, distribution channels, etc. Because the consumer has the right to deliberately make decisions and be responsible for received (or not received) satisfaction with service providers.

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10.5. Relationship marketing challenges in the health care organizations

Krukowska-Miler A.

The ability to create non-public health care organizations (currently medicinal [5]), directing them by individuals «managers», growing competition have resulted in the introduction of more and more the principles of marketing and marketing management of these entities. You can create long-term relationships with clients / patients, which favors the introduction of relationship marketing. On the other hand, the specificity and a double: the subject of action – that is, medical services, and on the other hand, the subject of these activities or the patient – human causes limitations and creates challenges in the application of marketing principles. The purpose of this article is a critical look at the challenges that are put before the management of health care organizations in accordance with the principles of marketing with special emphasis on relationship marketing.

Medical institution wishing to provide value to the patient, should be considered based management and marketing is based on values, which provides the patient and creating long-term relationships with patients or relationships. Even with the assumption that due to the fulfillment of the basic assumptions of relationship marketing, which is to create long-term relationships with customers. The term relationship marketing is derived from the English term relationship marketing, which in Polish literature translated as «relationship marketing», and «marketing union» or «marketing bond» [2]. In accordance with the definition of relationship marketing «it is a continuous process of finding and creating new value of an individual client and the sharing of benefits within the framework of the partnership, covering the whole period of activity of the purchasing customer. It is based understanding of the importance of sustained cooperation between suppliers and a select group of clients and directing it to create shared value in order to then share it. Mechanism for effective cooperation are reciprocal links and adjust the organizational structures of the partners» [1, p. 35-36].

A number of definitions of relationship marketing has collected and systematized J. Otto [4, p. 46-49]. Vision of relationship marketing (affiliate in comparison to traditional marketing (transaction) is illustrated in table 10.7.

The main features of the concept of relationship marketing is [1, p. 36]:

- creating new value for the customer and its division between the manufacturer and the customer,

- an individual customer, who has participated in the creation of the most valuable benefits for themselves, so the value is created together with him,
- the company is required to design and customize processes, communication tools, technologies and personnel in such a way that they form values that the customer expects,
- continued cooperation between the buyer and the seller makes your marketing efforts are conducted in real time,
- customers are evaluated on the basis of the total value of purchases made throughout the period of purchasing activity, and not on the basis of individual transactions,
- chain partnerships can be created not only within the company but also with external partners or suppliers, intermediaries and shareholders.

Looking at the above assumptions can be directly applied to medicinal plants and specific health services.

Health care organizations must first look at demographic and historical data about their patients to understand who they are, what kind of services they buy, and how to provide for them over the long term. The health care organization must understand why a patient returns for repeat service. There is the tendency to think that patients return because the organization has served them well, but maybe they return to an organization because it is the closest to their house, or the only one in the area that serve the certain health-services they want to buy. Analyzing the nature of patients loyalty is the best method develop a working relationship marketing plan.

Table 10.7. Comparison of marketing transactions (traditional) marketing relationships (partner) Source: Payne [5, p. 53]

Marketing transactions (traditional)	Relationship Marketing (Affiliate)
Focusing on a single sales	focus on maintaining customer
Product features are the most important	benefits of buying the product are the most important
Short-term scale of operation	long-term scale of operation
Customer service not very important	customer service very important
Limited customer loyalty to the company's	large customer loyalty to the company
Moderate contact with the customer	regular contact with the client
The quality of the production department cares about	the quality of care all

Then the first point talking about the division of the creation of value is consistent with the concept of health care organizations operation – the value of the medical establishment arises when a patient coming to the establishment and use of health services. The resulting thus benefit is mutual for both the patient and for the organization or in the form of direct profits or spaced-time charges for contracted medical procedures.

The second point is even more obvious, the patient comes to a medical institution in order to obtain the value of which is to improve the health and saving lives. This is the value received and if satisfied will depend on his health and technical capability and personnel of the institution. A. Lawthers gives the most important areas of the patient's expectations [3, p. 70-71]:

- «availability;
- good communication and information communicated in an understandable way (for to disease, treatment, etc.);
- respect the rights and preferences when choosing a method of treatment, follow-up and coordination of the entire therapeutic process (consultations with other doctors, coordination of the process by a doctor, when the various stages of treatment take place in other centers, etc.);
- peace of mind – during the examination and the treatment process;
- adaptation of care to individual needs and expectations».

The third point follows from the development of technology and the requirements of creating a database of patients. Often in health institutions, especially private arise internal Internet networks through which passed the whole story of the individual patient to the individual medical devices. The processes of creating the services are often specified because of the determination of individual tracks to create the service. At present, widely commented procedure «package oncology» and the controversy associated with it, in which the main emphasis is on the benefits and risks for the patient [3].

Durable cooperation is somehow entered automatically in the specifics of health services. Patients have chosen primary care physicians, and visits to specialists also often associated with the choice of institutions that have for confidence. For long-term relationships with patients affected by the specificity of medical services. Health Services have a number of specific characteristics affecting the marketing [2, p. 36]:

1. «Psychologically complex process that takes place» in front of customers.
2. Accompanying patients stress.
3. Medical service requires constant interaction doctor-patient, therefore, the attitude of the doctor to the patient is essential in creating the image of the institution.

4. Provision of medical services based on expertise. The patient does not know what they are complex tools, does not understand the names mentioned by the doctor, and therefore enhances the need to build confidence in the doctor and the facility.

5. Putting the patient in the doctor's hand means understanding their needs. The patient seeks clarification of communication. A doctor does not only provide proper medical service, he is required to also have good communication with the patient and sacrifice himself the greatest possible attention.

6. Doctors cannot always fully satisfy their customers.

7. Doctors have little opportunity to differentiate their services.

This specificity allows the impact on the perception of patients using eg. complicated names treatments.

The quality of service depends on the medical doctor, but also from the patient.

Patients generally do not assess the technical quality of the service.

Client / patient often in health care qualifies due to the complexity of medical cases and severity of the disease [4], and the frequency of their return to the institution of a medical institution.

The last paragraph of creating a chain partnerships, especially among workers is often underestimated and difficult to implement, due to the individualization of work of doctors, their contracting event and a lot of jobs and a lack of identification with certain medicinal plant. It seems that the chain partnership it is easier to create in the case of suppliers of equipment, equipment, etc.

Also, you can suggest the legitimacy of the introduction of the principles of relationship marketing because of the indicated needs of patients in relation to medicinal plants and health services. The most important needs of patients included, we need [3, p. 71-73]:

Information – the patient wants to be informed about what was happening to him: what is to become, as it has affected him a cure. Satisfying this need usually reduces anxiety.

A number of psychological research indicates that knowledge about this, what's going to happen, you can reduce the stress associated with it.

Control the situation - ways to improve the patient's sense of control are: full information, request for opinion, consent, leaving the choice.

Security – keep in mind that the patient comes to a medical institution with what is most precious, with his life and health. It is therefore important to ensure the safety. This need can meet, among others, by providing information: about the health and future effects of the therapy on the experience in this respect the doctor. It is important that a permanent building and maintaining the trust of the patient to the doctor

or the medical institution. An important component in the sense of security is purity, sterility of a medical institution, and even the atmosphere between colleagues.

Interests and emotional support – the urgent need is the need to pay more attention to the patient. For his needs, expectations.

Respect and acceptance – patient treatment plants are often forced to denounce and portraying his weakness, so showing respect, polite, respecting the value of another man's attitude on the part of medical staff helps maintain the correct image of his own «I» of the patient.

Intimacy and privacy – disrobing whether physical or mental often causes discomfort. If you do not provide the patient a sense of intimacy and privacy, it might hinder these tasks and, worse, leave a lasting trauma patient

Friendly atmosphere – the patient is expected smile, pleasant and friendly service and should not be dependent on the good or bad humor doctor or nurse. Sometimes this is more important than good health or treat.

The patient through legal action, eg. The Charter of Patients' Rights [1] is legally guarantee the treatment itself as a partner in the course of performing medical procedures. Of course, as a partner with less knowledge but one that actively participates in the process of healing, whether diagnostic, and on which depends the success of the operation of a medical institution.

Given the macro issues concerning the health services market may be presumed that the market cannot be fully self-regulating market, you need a delivery task to ensure public protection of public health [6, p. 175]. Another important issue is the availability of health services and the availability of health insurance and solidarity. These tasks are the tasks of the state and thus subject to a certain part of the political game.

«One of the biggest challenges for healthcare organizations is to identify the most likely changes and future planning related to these changes. (...) Health care organizations will have to cope with changes in some or all of the following areas: legal, political, economic, social, demographic, technological and competitive» [8, p. 49].

These changes through its own characteristics affect both individuals on a national scale as well as a small single doctor's offices. In the table below have been grouped most anticipated changes relating to specific areas of activity, and the impact they may have on the application of the principles of marketing and relationship marketing.

All of these issues will be extended in the future by the author. Now it is only critical view on the problem of relationship marketing in health care organizations.

Table 10.8. Changes in the environment medicinal plants and their impact on the use of them in the principles of marketing [Sources; Own]

Changes in the environment medicinal plants	The impact of the application of marketing principles
<p>Changes in the legal / political Increasing the requirements for the business of medicinal Constantly changing the rules of contracting health services</p>	<p>The need to move funds to ensure the standards of operation of the plant medicinal. The uncertainty of operation, the need for continuous adaptation, problems with setting long-term plans lack of relatedness in the activities</p>
<p>Changes in social / demographic The aging population and increasing life expectancy</p>	<p>Increase in the demand for specific medical services associated with old age – geriatrics, care and treatment plants. The occurrence of diseases directly correlated with age. The need to reorganize the medicinal plants in order to ensure access to appropriate specialists</p>
<p>Economic changes. Expansion of the health sector, job creation. Total expenditure on health care are increasing while the individual treatments may fall</p>	<p>The formation of private institutions employing health workers on contracts, it can cause loose relationships at work and lack of formation of a coherent policy and build the plant in the relationship. Difficulties in ensuring the profitability associated with maintaining certain branches of health and performance of procedures on the other hand, excessive growth of «cost-effective» health services</p>
<p>Technological changes. New, advanced medical technologies. The expected advances in medical information technology</p>	<p>The increase in the costs of running medical activity related to the purchase of technology, at the same time the possibility of increasing service offerings and improve the quality of their provision. Improving the quality of health services, greater diagnostic capabilities, greater access to information and health services. The number and diversity of entities medicinal Formation of therapeutic entities, which are provided with high profitability while disappearance of subjects with low profitability</p>
<p>Changes in competition. Creation of new medicinal plants and falling down some due to market regulations. The search for market niches not covered by the regulations relating to the protection of health. The search for components that reduce the operating costs of medicinal plants</p>	<p>The emphasis on enhancing the competitiveness of provided health services, the application of marketing principles in order to increase the competitiveness, increase the importance of market research, patients are treated not as petitioners but as partners. The formation of actors outside the health sector (paramedical). The emphasis on prevention and promotion of healthy lifestyles, increasing the accountability of patients regarding their health. The growing importance of promotion in the public relations. Risk of lack of satisfaction for the protection of public health source</p>

Looking at the issue from the point of view of the technical and individuals health care organizations can be distinguished following the introduction of marketing management relations in these establishments [Stoner and Wankel, 1992, p. 115]:

- small and medium-sized health care organizations produce a relatively small number of services;
- their resources and skills are relatively limited;
- generally do not have a formalized methods of tracking environment, development forecasts, assess and control the progress of the strategy; so the information needed;
- the implementation or modification of the strategic plans are unavailable or unreliable;
- most of the managerial staff and a staff qualifications obtained in the course of work;
- in effect, the staff will be based on experience rather than on a systematic detailed procedure;
- managerial positions and significant blocks of shares are often involving relatives founder or founders.

The process of marketing management relations in its action faces many obstacles and problems. They include [7, p. 118]:

- contradiction between the formal process and management style;
- • mismatch of activities to meet the needs of a medical institution;
- the person responsible for the planning of marketing do not understand some aspects of customer relationship management;
- high costs of the process of marketing management relations;
- bad delegating authority and responsibility in the area of marketing;
- excessive exposure quantitative aspects;
- too little access to necessary information or too much detail provided leadership;
- lack of flexibility strategy.

Counter these barriers can produce an adequate system of informing employees about the planned and undertaken activities to pinpoint their role in these activities, involving the greatest number of employees in creating plans, taking care of the consistency of objectives and the proper reward for their implementation. It seems that relationship marketing is the way of the evolution of health care organizations. Close contacts of patients favor this. Databases created by health care organizations are using and the basis for the introduction of relationship marketing. They only require suitable treatment. Patients also are becoming better educated and want to actively participate in the healing process. On the other hand relationship marketing can involve revising major aspects of the way a company conducts business. This can be expensive, time

consuming, and have serious consequences for both patients and employees. The only way to carry out a relationship marketing strategy in a thoughtful and effective way is to follow a comprehensive marketing plan.

There are many publications about relationship marketing but lack publication about this marketing in health care organization. Authors who interested in relationship marketing are: Ph. Kotler «Marketing», Ph. Kotler, G. Armstrong, J. Saunders, V. Wong «Principles of Marketing», M. Mitrga «Marketing Relacji», R. Furtak «Marketing partnerski na rynku usług» and others. But there are not so many authors who interested in relationship marketing in health care organizations, for example: I. Rudawska, J. Kowalska, M. Rogala. Some of them only shows some relationship marketing's aspects: A. Bukowska-Piestryńska, B. Nogalskio, J. Rybicki. Author showed this aspects too [Health Care Marketing, Marketing Possibilities to Attract Private Client to Healthcare Organization, Zmiany w podejściu do marketingu w ochronie zdrowia w Polsce, Działania marketingowe zakładów opieki zdrowotnej w Polsce po reformie. and other] This article can be developed deepened by the author in the future.

The requirements of a competitive market and legislative actions and the very specific nature of health services, they allow a kind of force application of the principles of marketing and especially the relationship marketing and management of the marketing of health care organizations. There are some limitations here, which determine the procedure but does not prevent their use. Through its specificity, mainly regarding the «object of action» that human life and health, and activities related to the provision and saving the life and health management of the marketing medicinal plants should be specific. Given the macro issues concerning the health services market. Proper management of marketing allows the establishment medicinal increase their competitive advantage and better adapt to the needs of the patients and at the macro level to the faster development of the health sector. This article is the presentation of relationship challenges in the health care organizations in Poland. The aim of the article is critical to look at the challenges faced by marketing management in the clinics focus was on the challenges of managing the relationship. It identified the main areas of the challenges facing responsible for the implementation and management of relationship marketing in health care organizations.

Medical institution wishing to provide value to the patient, should be considered based management and marketing is based on values, which provides the patient and creating long-term relationships with patients or relationships. Even with the assumption that due to the fulfillment of the basic assumptions of relationship marketing, which is to create long-

term relationships with customers. This research be helpful in creating an health care organization oriented on marketing. The requirements of a competitive market and legislative action allows a kind of force application of the principles of marketing and marketing management in the clinics. There are some limitations here, which determine the procedure but does not prevent their use. Proper management of marketing allows the establishment medicinal increase their competitive advantage and better adapt to the needs of the patients and at the macro level to the faster development of health sector.

There are many aspect to should be deeper researched in the future for example: changes in competition and legal in Polish Health Care Sector, changes in demography, the emphasis on prevention and promotion of healthy lifestyles, increasing the accountability of patients regarding their health. And the main reason how patients see the organization and what we can do to attract the offer and bring him for a long term.

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10.6. Analysis of theoretical and methodological approaches to marketing testing of product innovations

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In the modern world innovations and innovative activity are of great importance as they are an important part of the process of the successful development providing and long-term operation of the enterprise. However, official statistics points out at low innovation activity of domestic industrial enterprises (in 2015 only 17,3% of enterprises were engaged in innovations). In addition, the effectiveness of this small innovative activity is at a quite low level. For comparison, in Ukraine only 0,5% of projects get commercial implementation, while in the US the index is 22%, in Europe it is 18% [1]. These and other reasons prevent an effective process of practical innovation development. A low percentage of

domestic innovations commercialization requires an examination of the place of marketing in the process of innovations development. In the innovatively active countries it is practiced a procedure of marketing testing that solves an urgent problem concerning enhancing the efficiency of enterprises innovation activity, that's why it is important for the implementation into activities of domestic industrial enterprises.

In literature sources it is given insufficient attention to the marketing testing procedure. Domestic and foreign scholars have widely disclosed some theoretical and methodological aspects of marketing testing at different stages of innovation cycle through certain indicative criteria (or filtering criteria), but questions concerning its complex conducting were ignored. Besides the introduction of this procedure at early stages of the product development innovation cycle remains disregarded. There are not many works concerning marketing testing in public sources because they can provide tangible benefits to certain companies.

From numerous literary sources it is known that an innovation cycle consists of certain consecutive stages [2]: beginning with the formation of the purpose and idea generation and ending with trial run and introduction of new products to market.

A consistent flow of the innovative idea through every stage of the development cycle with the application of the marketing testing procedure is the guarantee of a successful innovative activity of the company. Therefore, let us consider different evolutionary approaches of domestic and foreign scientists concerning marketing testing procedure on the whole, and its elements that occur at certain stages of the innovation cycle.

Karakay Y.V. [3] considers marketing testing at the stage of innovative ideas generation and selection. He proved the expediency of factorial approach to eliminate ideas with no prospect and ideas that should be improved. Analysis of environmental factors impact allowed to divide them into three groups, that form specific «filters», which give the opportunity to accept or reject innovative ideas. A consistent analysis of conformity ideas to each group of factors gave the opportunity to offer the model of «three filters». The first filter includes social, market and environmental factors (factors of macroenvironment). The second group of factors (the second filter) includes: business risk, competition, conformity to law and safety consumption (factors of trade priority justification). The last filter consists of factors that determine the possibility of implementing of innovation projects: production capacity, functional completeness, required investment, payback period, profitability, market size and others (factors of commercial activities evaluation).

According to Shcherban V.M. [4], marketing testing must be performed in two stages. The first stage is concept testing that is checking the impact of innovative product concepts on the group of target consumers. It can be presented as a description, a prototype or virtually. The second stage is the prototype testing. Here the author identifies two approaches:

1. Technological testing. It shows how far conditions of technical specifications are realized in the prototype. This type of testing can be performed both in laboratory conditions, with the participation of professional engineers, and in real-life conditions with the assistance of consumers.

2. Product test in market conditions. It is an imitation of the company introduction into the market with a new product. The purpose is to determine the chances of new product and marketing strategy for the market success. The author offers the following methods: prototype test by use of market model and test marketing with its various options.

There is quite an interesting approach suggested by Cooper R. [5, p. 438-455]. In the process of the innovative product creating it is essential to identify «critical points», i.e. moments when it is necessary to decide what to do with the project development (to continue or terminate it). These are peculiar ways to reject unsuccessful projects:

1. Elimination at the business analysis stage. Making a decision concerning the necessity to spend resources on the project.

2. Elimination during making the decision about the transition to the development stage, that is the signal for the start of full-scale product development.

3. Elimination during decision-making concerning the start-up into the commercial production.

4. The final critical point that is a retrospective analysis of what have happened and what conclusions can be made. It is conducted after the start-up that signals about the end of the project.

The list of decision-making points is complemented by the necessary reporting, selection criteria, in order to ensure that only the best projects are moving up to the next stage of the development process.

The model of innovative product development, that takes into account the elements of a marketing testing, is called «critical points» or «gates» for the rejection of unsuccessful projects.

At the stage of innovation ideas selection Chukhrai N.I. [6] offers to apply «a control filter» that allows to evaluate ideas on the basis of customer satisfaction level. As a result of this «filtering» ideas are distinguishing into those that have no prospects, far-reaching ideas and perspective ideas. Further it is calculated the perspective ideas qualitative

index and occurs the final ideas selection according to cumulative criteria that characterize the scientific and technical level and strategic attractiveness of the supply: product quality, patentability, qualification of personnel.

At the stage of prototypes creating the author proposes to conduct a functional innovation test with a view to ascertain its conformity with the requirements of the market. It is possible that test marketing stage can be conducted.

At the stage of new product idea generation Hotyascheva O.M. [7] offers to create the system of a complex use of all possible innovation sources that makes it possible to accumulate a large number of alternative proposals and allows to test ideas rationality in terms of their coincidence according to different sources. At the stage of ideas selection occurs a two-level evaluation of alternatives. Firstly, it is performed an internal idea evaluation according to two directions: conformity of the idea to the corporate marketing strategy and assessment of technological opportunities of the enterprise. An external evaluation includes trial ideas sales through marketing research.

At the business analysis stage the author also offers to test a prototype of marketing program; at the stage of product development it is necessary to provide laboratory testing of prototypes; at the stage of testing under market conditions it is essential to provide testing at exploratory and manufactured markets.

There is quite an interesting model of marketing testing offered by a generally known expert in the field of marketing Kotler P. [8]. According to this model testing occurs at the levels of an idea, a concept and a prototype of an innovative product.

The filtering of innovation ideas occurs in three stages. First, the maximum number of generated ideas undergoes a «rough» filter, and its result is the classification of ideas into perspective, acceptable and prospectless. Then all perspective ideas are tested on various criteria, and according to their results it is forming a set of selected ideas and they are liable to full-scale check at the last stage of filtration. According to the results innovative product concepts testing occurs its admission to the category of win-win, ineffective or unsuccessful. The stage of prototypes testing is implemented in the form of alpha- and beta-testing. Alpha testing is the probation on the manufacturer's stands concerning technical capacity to develop and produce a product of a specified quality level; functional and technical tests; production tests. Beta testing is the probation involving target customers to determine their response, consumer qualities, the intention to make purchases and the valuation of

the commercial profitability of the project and its market chances. Positive results of prototypes testing are a signal to start the final test that is test marketing (or marketing testing) with its different variants.

Pererva P.G. [9] proposes a two-level procedure of ideas selection. At the initial stage of the idea selection they are filtered according to general, marketing and production criteria. During the implementation these criteria are specified and detailed to examine the most perspective ideas. At the second stage the author offers the following rejection criteria: market, scientific and technical, financial, manufacturing, external, economic and criteria related to the objectives of the corporation. The procedures of ideas assessment are performed by the methods of standard forms, check lists, evaluation scales, analytical network expertise, rating calculating of the product idea and probability of the new product success. At the stage of product conception development production and consumer tests are necessary. To assess the market adequacy of the product it is offered to apply marketing researches, analytical assessment of subjective quality of the product, and multidimensional computer simulation. Thus, none of these models of marketing testing is different by the complexity, and provides for action only at certain stages of the innovation cycle of product development. The absence of complexity demand indicates a high probability of making a mistake during the design and development of innovative products that will eventually lead to the appearance in the market of products that will not meet the needs and demands of consumers.

That's why we offer an author approach to conducting the procedure of marketing testing, where the complexity requirement should be followed. Marketing testing is a complex process of selection, evaluation and choice of the marketing approbation subject conducted at every stage of the product creation for gradual and general definition of the success level of innovative products in the market and in the eyes of target consumers and also the stage of product readiness to enter the market. The subject of testing can be directions of innovative development of the company, ideas sources, ideas, conceptions, prototypes of innovative production and its market attributes and also marketing strategy as a whole.

Let us briefly consider every stage of the product development process and determine which types of marketing testing take place here (table 10.9).

Table 10.9. Problems that marketing testing solves at stages of the product development innovation cycle

The stage product development innovative cycle	Type of marketing testing	The main problems (tasks) that are solving
Analysis of conformity of internal development opportunities to external ones	Testing of directions and types of innovation activity	Testing how far the existing directions and activities of the company meet modern conditions; analysis and evaluation of directions and variations of market development opportunities that have the enterprise
Ideas generation	Testing of ideas sources	Determining target customers and their needs; evaluation and selection of optimal sources of ideas innovative production and methods of ideas generation within the framework of selected ideas sources; formation a «matrix of ideas» of innovative production
The selection of ideas	Testing of ideas	Determination of criteria for ideas selecting; criterial assessment and selection of optimal ideas of production; testing of opportunities to bring the idea to the level of new technologies, designs, products, decisions; preliminary evaluation of ideas market perspectives; determination of the idea novelty level and consumer attractiveness; risk assessment
Development of product concept and its verification	Testing of product concept	Investigation of product concept by target consumers; analysis, evaluation and selection of optimal from possible alternatives of innovative product conception; assessment of market perspectives of the conception and innovative potential of the concept developer; determination of the level of the concept novelty; risk assessment
Market research and development of marketing strategy	Testing of marketing strategy	A detailed analysis of existing and potential customers' needs, and in case of need to develop measures for their formation; the analysis of the potential market and situation of its development; the analysis and selection of the optimal marketing strategy; test of market attributes
Business analysis	Testing of intended purposes and opportunities	The analysis and evaluation of intellectual, scientific and technical, manufacturing, marketing opportunities and resources' provision for innovations embodiment into products under development; evaluation of economic efficiency of production and products realization
Product development	Testing of a prototype and manufacturing process	Definition of consumer attitudes to the proposed prototypes; assessment of the quality level of the test sample in comparison with the analogues or competitors' products, if any; choice of the best prototype from several versions; laboratory and consumer tests of prototypes; production test; analysis of versions of working documentation and production technical preparation; assessment of novelty level; risk assessment
Market testing of the production	Testing of the market (test marketing)	The final market evaluation of developed innovative production and its marketing support: testing of the price, sales network, sales incentives etc.; analysis of developed product positioning in relation to similar production of competitors and own product portfolio

We offer various marketing filters to reject innovative ideas through them being at every stage of the innovation cycle, before one of them (the most perspective idea) will be embodied into innovative production:

1. Analysis of conformity of internal development opportunities to external ones. At this stage methods of portfolio analysis can be applied (SWOT, PEST, BCG, GAP, MKGE).

2. Ideas generation. The instruments are marketing researches of consumers and traditional and non-traditional methods of ideas generating.

3. The selection of acceptable ideas that are methods of control questions, filtering criteria, portfolio methods, method of analytic network evaluation and also a consistent analysis. Besides, it is advisable to calculate the conditional index of the idea quality, the idea rating, the probability of idea's success, the level of idea innovation.

4. Development of a new product plan and its testing that are: the method of control questions, the method of scores evaluation, methods of predictive value of consumers' stated intention to make a purchase, joint analysis. At this stage it is necessary to test the conception with the participation of target consumers.

5. Market analysis and development of marketing strategy. Methods of market researches are: forecasting of quantity demanded; market segmentation; development of commodity, marketing, pricing and communication policy.

6. Assessment of possibilities to achieve goals of marketing strategy. Methods of functional cost analysis, technical and economic analysis, methods of economic efficiency evaluation (break-even analysis, risk analysis, NPV, IRR).

7. Development of a new product. Design and technological approaches, approaches to the organization of the production process. Laboratory and operational tests of the prototype, production tests.

8. Testing in market conditions. Consumer and market tests of the new production. Methods of test marketing.

Marketing testing is the assessment of market success of the product innovation and its marketing strategy, and ultimately it is an increase of the activity level and results of innovative activity of the company. With its assistance it is possible to make a reasonable decision about the continuation of works over the innovation or stopping them. Further researches should be directed to the development of theoretical and methodological foundations of the mechanism for implementing of product innovation marketing testing into the practical activity of industrial enterprises.

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10.7. Price elasticity of demand modeling for novelty goods

Yashkina O.I.

Entering the market with new, especially high-tech product requires the company to carefully approach the assessment of possible risks in pricing. They can be evaluated by the reaction of customers in pilot surveys or observations, focus groups or personal interviews. It is also important to have the statistical evaluation tool of relation between sales volume and prices, price elasticity of demand and prices and the ability to determine the risks of increase or decrease in prices in a particular market situation.

Modern scientific work considering the evaluation and application of price elasticity of demand index can be characterized by the certain range of positions and approaches. The authors' positions on the use of price elasticity of demand index in practice are diametrically opposite. They can be divided into two groups: the first is inclined to the idea of absolute unreasonableness of practical application of price elasticity of demand index and its purely theoretical perception [1]; the second group, on the contrary, convincing on the importance of practical use of price elasticity of demand index. Approaches to determine the coefficient of price elasticity also vary from verbal definition to the use of complex mathematical calculations [2-4].

Ukrainian researchers use price elasticity of demand in the market research of different groups of products, as well as in making management decisions [5-10]. Price elasticity of demand in applied research is widely used by scientists from the United States [11-16]. Using price elasticity of demand index is relevant in the present studies of aggregate demand for certain groups of goods and services in the macroeconomic context.

In our view, the price elasticity of demand index for high-tech innovation or novelty goods is not a constant as it is commonly interpreted in the classic sense. On the stage of goods entering the market and sales

growth price elasticity of demand index will vary within certain boundaries. Its value and the corresponding market reaction are closely related to the current price. At the stage of maturity the market reaches saturation stage and the price elasticity of demand index undergoes much smaller fluctuations than in previous stages of the life cycle. When technical innovations from competitors or product obsolescence appear, that is the transition to the stage of decline then the price elasticity index once again demonstrates high volatility.

Assuming that the price elasticity of demand index is not constant and can be described by the certain model of depending on the price of goods or services then under these conditions we get the possibility to determine the period in which this rate varies, that can assess its probable value at certain prices and we are able to assess the risks of increase or decrease in prices that means determining the risks of their each possible level.

Suppose that there is some existing factual information on prices and related sales of novelty or new high-tech products for a short period of time. This may be pilot market research, trial sale and real or imitation experiment data. It is recommended to make the decision to adjust the prices depending on the type of relation between demand and prices. It is proposed to find this relationship by the regressive dependence of demand on the price.

Modelling price elasticity of demand and assessing the risks in pricing are conducted by the following stages:

- a) obtaining a regression model of demand on the price dependence;
- b) obtaining function of price elasticity of demand and risk assessment for her behavior.

Consider the situation where a manufacturer evaluates demand for innovative products according to sales. Such data may be obtained in the experimental sales of innovative products by the methods of test marketing or comparing sales and corresponding prices in the real conditions.

Stage 1. Regression model of demand on prices dependence is built from experimental data where the dependent variable is sales and independent or explanatory one is the price.

For approximation of experimental data standard regression models are commonly used: linear, hyperbolic and parabolic. It's necessary to select the «best» among these models. In terms of statistics the «best» means the most accurate, reliable and adequate. The accuracy of the model is verified by the coefficient of determination R^2 and standard error of the model, the reliability is checked by Fisher F-criterion (the reliability of the overall model) and by Student t-criterion (the reliability coefficients), the adequacy of the model is verified by residues (for example, the autocorrelation coefficients residues).

The risks related to the qualifications of the researcher are possible at this stage. The first risk is connected with a sample that has to be representative, another one can occur due to the selection of model from experimental data. These risks are not subject to quantity assessment but have an impact on further research.

Stage 2. Getting the function of the price elasticity of demand and assessing risks of price changes depending on the graphics functions. Price elasticity of demand in terms of mathematical analysis is determined by the following formula [15]:

$$E_p(Q) = \frac{P}{Q(P)} \cdot Q'(P) \quad 10.1$$

where $Q(P)$ – is a known function of demand of some product;
 P – is the price of the product.

Certain basic models are used for regression models of the demand on price dependence. We find the price elasticity functions for linear, hyperbolic and parabolic patterns of demand and evaluate the risks of price changes for each of them. The term «function of price elasticity of demand» is introduced for convenience. It is clear that the relation between price elasticity of demand and price in all the following cases is not functional but regression. But the concept of «function of price elasticity of demand» allows using tools to research function at extremes for derived regression models.

a) Linear regression of demand on prices is: $Q = a_0 + a_1P$. Its' derivative is: $Q' = a_1$.

The function of price elasticity of demand in this case is:

$$E_p(Q) = \frac{a_1P}{a_0 + a_1P} \quad 10.2$$

Fig. 10.6 graphs the function (10.2) modulo.

Fig. 10.6 shows that the function of the price elasticity of demand for the linear model of dependence of the demand on price has a vertical asymptote, this point on the graph of demand on price corresponds to zero demand. That is when the demand that tends to zero the price elasticity index tends to infinity. At the point $\left| \frac{a_0}{2a_1} \right|$ graph of the elasticity function module intersects the line $E_p(Q) = 1$ which corresponds to a single demand (the boundary between elastic and inelastic demand).

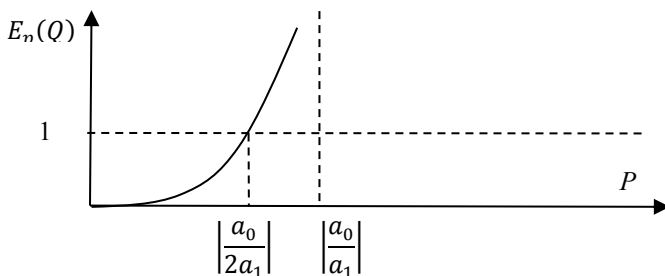


Figure 10.6. The function of price elasticity of demand for the linear dependence of demand on price

According to the graph of price elasticity of demand in the case of linear dependence of demand on price three risk pricing can be defined:

1) a low risk of price increases in the interval $(0; \frac{|a_0|}{2a_1})$; here price increase will lead to a slight decrease in sales, as demand for this range is inelastic (graph below single elasticity);

2) zero risk of decrease in the price is in the vicinity of the point $P = \frac{|a_0|}{a_1}$, price elasticity of demand index there tends to infinity, that is sales will grow at a much higher percentage than prices decrease;

3) in the interval $(\frac{|a_0|}{2a_1}, \frac{|a_0|}{a_1})$ the risk of prices decrease evenly reduced, i.e. with the greatest risk reduction in price in the right vicinity of the point $\frac{|a_0|}{2a_1}$ to zero in the left vicinity of the point $\frac{|a_0|}{a_1}$. In this interval the demand is elastic and price elasticity index increases as can be seen from the graph function.

b) Inverse or hyperbolic regression dependence of demand on prices is characterized by the equation $Q = a_0 + a_1/P$. Derivative function is $Q' = -\frac{a_1}{P^2}$. The function of price elasticity of demand for hyperbolic dependence of demand on prices has the form:

$$E_p(Q) = \frac{P}{a_0 + a_1/P} \cdot \left(-\frac{a_1}{P^2}\right) = -\frac{a_1}{a_0P + a_1} \quad 10.3$$

Investigating the behavior of function of price elasticity of demand of the price we conclude that the hyperbolic function always describes elastic demand. Minimum modulo value that is equal to 1, the function of price elasticity of demand reaches in the point $P = 0$, it will continue to increase with acceleration (fig. 10.7).

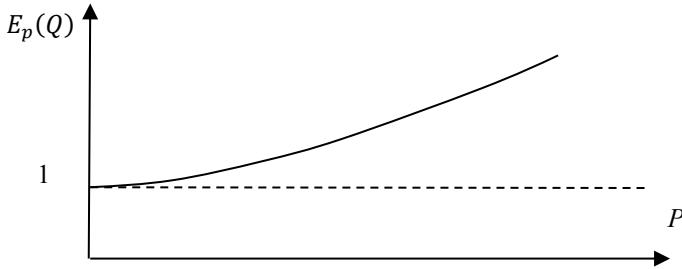


Figure 10.7. The function of price elasticity of demand for hyperbolic (inverse) dependence of the demand on price

That is, when determining the first stage hyperbolic regressive dependence of the demand on price, elasticity index of price to any of the graphic point is more than one and the demand is elastic.

c) Parabolic (quadratic) regression model of the dependence of demand on price is: $Q = a_0 + a_1P^2$. Derivative of the parabolic function is: $Q' = 2a_1P$. The function of the price elasticity of demand:

$$E_p(Q) = \frac{2a_1P^2}{a_0 + a_1P^2} \quad 10.4$$

Graph of the module of obtained function of elasticity of demand (fig. 10.8) shows two intervals with different pricing risks:

- low risk of price increase in the interval $(0; \sqrt{\frac{-a_0}{3a_1}})$. this follows from the fact that the demand function is inelastic there. graph of the function is below the line with single elasticity;
- low risk of price decrease in the interval $(\sqrt{-\frac{a_0}{3a_1}}; \sqrt{-\frac{a_0}{2a_1}})$. price elasticity index increases from one to two here, characterizing elastic demand.

Summarizing the proposed modeling of the price elasticity of demand and the risk assessment in pricing, we obtain table 10.10.

As a result of the research it is important to note that the approach based on the existence of functional dependence of price elasticity of demand for the price of high-tech and novelty products provides more opportunities for risk assessment in pricing when determining the regression dependence of demand on price. According to this approach: at first, regression dependence of the demand on price is determined using factual data of sample sale or sales data obtained by other methods of

marketing research; secondly, for each model of dependence of demand on price function of price elasticity of demand is obtained, for which, using methods of mathematical analysis, intervals of high and low risk of variation of prices in one or another direction are determined.

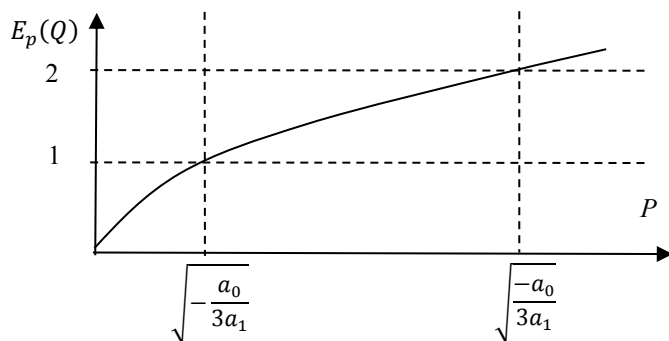


Figure 10.8. The function of price elasticity of demand for parabolic (quadratic) model of the dependence of demand on price

Table 10.10. Types of dependence of demand on price and the respective functions of price elasticity of demand and prices

Stage	Index	The linear dependence of demand on prices	Hyperbolic dependence of demand on prices	Parabolic dependence of demand on prices
1	Dependence model	$Q = a_0 + a_1P$	$Q = a_0 + a_1 / P$	$Q = a_0 + a_1P^2$
2	Regression model of price elasticity of demand, $E_p(Q)$	$E_p(Q) = \frac{a_1P}{a_0 + a_1P}$	$E_p(Q) = -\frac{a_1}{a_0P + a_1}$	$E_p(Q) = \frac{2a_1P^2}{a_0 + a_1P^2}$

The proposed modeling of price elasticity of demand and risk assessment in pricing allows companies with different pricing strategies, such as the strategy of «cream skimming» or market capturing strategy, to assess pricing risks.

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10.8. Methodological approaches to pricing and price adjustments in the marketing system

Bozhkova V.V., Bozhkov D.S.

It was Adam Smith who noted once the «paradox of value: water is more valuable than a diamond, but its price is lower», which has been studying by theorists and producers for a few centuries already. Experts approbated new cost methods for prices determining and scientists, to determine the best prising proposals, investigated the influence factors, classified products and consumers according to different groups, such as: focusing on purchases' prices (economic, personalized, ethical and apathetic buyers); focusing on product's innovation degree (innovators, followers and conservatives); focusing on the degree of sensitivity to prices, etc., but the market situations were constantly changing and needed improving of methodological approaches to pricing and price adjustments.

The current pricing policy is the process of managerial decision making towards prices establishing and prices adjusting by taking into

account all pricing factors, primarily with a focus on demand, providing competitive enterprise advantages on the market and profit.

Pricing and certain goods are not objective. What combination of goods the consumer will choose and how it will change at changing its earnings or prices for different products is the most important task that modern analytics solve. In pricing they take into account a wide range of factors which scientists generalize while dividing into macro- and micro-factors; controlled and uncontrolled by the enterprise; direct and indirect ones etc. We believe that taking into account specific features of multivariate influence, all factors are advisable to divide into:

- macro- factors (external as to the company and are not controlled by it);
- demand factors (the influence of the laws of demand and supply as well as price elasticity; different reaction of different market segments customers to the price);
- competitive factors (the state of market conditions);
- influencing factors of the participants' channels of distribution from the producer to retail trade (the more are the distribution links, the higher are the prices for the final consumer);
- proposal's factors (change of expenditures affects both the volumes of sales and profits, and the focus of the enterprise towards the target groups).

It will formalize the process of determining the basis for the multifactors analysis, which is the basis for prices determining (figure 10.9). The choice of pricing that would allow to take into account all the requirements due to relevant pricing factors is of great importance. First of all, the following factors are considered when choosing the method of enterprise pricing:

- simplicity of calculation;
- possibility of rapid price adjustments;
- ensuring success in a price competition.

The last factor is the most important, because buyers' «vote with their purse». In general there are three methods of pricing: expenditure, market and parametric, which are substantially different in approaches and calculations, in features of accounting various parameters of products and capabilities of market requirements.

Expenditure methods are focused on the accounting of different types of expenditure. Price is calculated as the sum of costs (constant, variable, secondary and direct) per unit of production and the planned profit.

When using market pricing methods the production expenditures are considered only as a limiting factor below which the realization of the product is uneconomical.

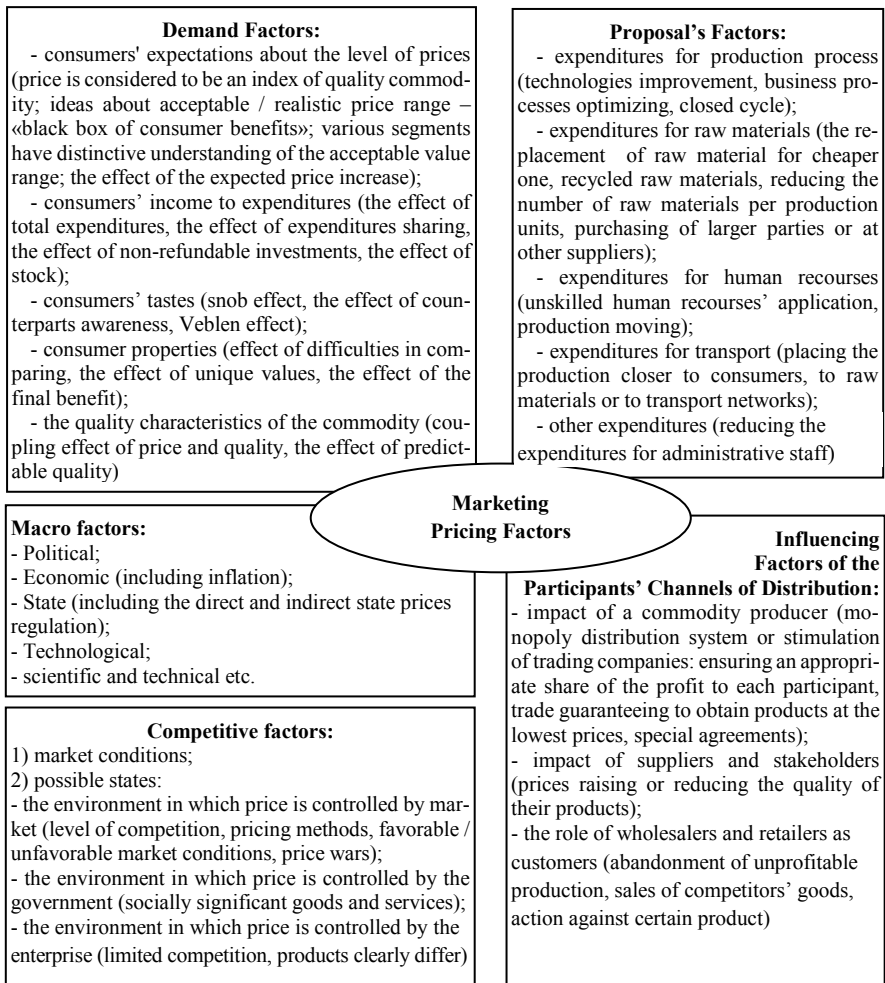


Figure 10.9. Marketing Pricing Factors

They can be divided into three groups:

- pricing with a focus on the importance of values to the commodity (consumer-focused);
- pricing with a focus on competition (taking into consideration focusing on the prices of other producers);
- pricing based on finding a balance between production expenditures and market conditions (demand-driven and market conditions).

Table 10.11. Classification of pricing methods

Approaches to Pricing	Pricing Methods Group	Kinds of Pricing Methods	Variety of Pricing Methods
Focus on costs	Methods for determining prices based on production costs	Full cost method	-
		The method of «average cost + profit»	The method of using full cost for production The method of using the marginal cost of production
		The method of direct costs (or minimum cost method, or the method of value manufacturing)	-
		Method of investment profitability	-
		Margins method	Price increments method
		Target pricing method (or method of target profit)	The method of current profits maximizing The method of ensuring the proper return on investment
		The method of breakeven analysis	-
		The method of structural analogy	-
		Method combined	Different versions of methods combination
Focusing on demand and market conditions	Market pricing methods	Methods focused on consumers (on the importance of goods values)	Methods based on the goods value
			The method of goods economic value calculating
			Maximum acceptable price valuation
		Methods focused on demand (the balance between production costs and market conditions)	Limits analysis method
			The method of losses and gains peaks analysis
Methods focused on competition	Method of market prices following		
	The method of the leader following		
	Prestigious prices method		
Focusing on standards costs for technical and economic parameters of products	Parametric pricing methods	Method of per-unit indicators	-
		Method of Regression Analysis	-
		Method of points	-
		The method of aggregation	-

Parametric pricing methods involve taking into account dependencies between the technical and economic parameters of production and its price by introducing amendments to the technical and economic comparison, modern design, performance, completeness, economy of operation, level of maintenance, etc.

Depending on the product features, size and financial capacity of the company, its objectives in marketing, three approaches to determining prices for products are used (table 10.11) and, respectively, three groups of methods:

- 1) focus on costs – methods for determining prices based on production costs;
- 2) focus on demand and market conditions – market pricing methods;
- 3) focus on standards costs of technical and economic parameters of production – parametric pricing methods.

The majority of methods have variations that allow to take into account the specific characteristics (production, its sales, consumer preferences, requirements of producers, traders, etc.). There are not any better or worse pricing methods, but there are more or less acceptable methods for specific products of a particular enterprise and a particular market.

In general, a wide range of methods enables enterprises to determine accurately and correct price for their products. Besides, enterprises want to maximize their profits, which not always are justified in the market conditions. We can hypothesize that different pricing methods provide different levels of income that can be included into the price (fig. 10.10).

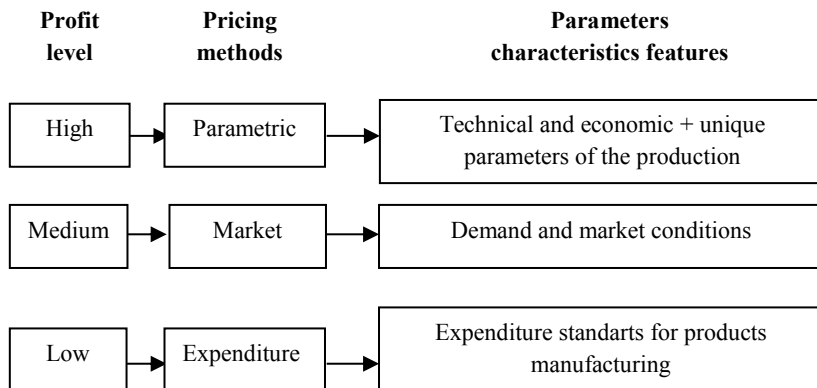


Figure 10.10. Generalized pricing methods characteristics

The division of methods in terms of income is rather conditional, since the expenditure methods may include a high rate of income, and

parametric methods can determine the minimum price (for example, when introducing the commodity to the market or test marketing). It is rather a synthesis of existing practices and identifying the opportunities to maximize profits by an enterprise using certain methods.

In summary, we note:

- marketing pricing factors according to the following kinds (macro-factors, demand factors, competitive factors, influencing factors of the participants' channels of distribution, proposition factors) which can formalize the process of determining the basis for the multivariate analysis, which is the basis of pricing are Systematized;
- the pricing methods classification got its further development, allowing businesses to choose reasonably acceptable method of pricing and to determine the most accurate price for their products;
- generalized pricing methods features allow enterprises to choose the appropriate methods to maximize their profits.

Conclusions reached could become the basis for further research towards the formalization of the process of determining competitive prices for different types of domestic products for different markets.

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Section 11

Innovations in the communication policy: practical aspects

11.1. Trade marketing modern tools and technologies

Savytska N.L., Zhehus O.V., Afanasieva O.P.

Transformational changes in the domestic economy affected the consumer market. Along with the positive trends, among the major problems, there are the growth of internal and external competitive pressure and the decline in the population purchasing power, in which businesses rely on the effective methods search of the marketing tools use, in particular, the development of marketing policy adequate external conditions. It is an important element of the strategic and operational marketing integration chain and has been performed by marketing activities tactics under certain macroeconomic and market conditions.

The retail sector is traditionally considered an indicator of the national health economy characterizes consumer sentiment and the general situation on the market. Forbes, citing data from the state statistics service, says the decline in retail trade turnover in January-November 2015 – to 918,38 billion hryvna, which is 21,4% less compared to the same period last year, while in physical terms the drop was about 30-40% [1]. Online retail market also demonstrates the fall in 2015 in dollar terms by 31%, however, the activity of online consumers (shopping online has been done by 3,7 mln. Ukrainians). According to Ukrainian Direct Marketing Association estimates (UDMA) total e-commerce market by the end of 2015 amounted to \$ 1,1 billion, showing the growth of 1/3 in national currency and a doubling in the Fashion segment [2].

The consumers' needs are the core of the marketing policy formation on the market, which is characterized by intrainstrumental (internal) marketing tools organization and their interinstrumental integration. Starting from this point of view, the possibility of using this complex various means are formed, depending on the marketing activities purpose. Intrainstrumental and interinstrumental components set may vary in accordance with the priority of those or other marketing tools, the chosen market coverage strategy and enterprise specific marketing objectives in the consumer market. Each of the interinstrumental (external) level elements of the enterprise marketing complex includes its own

set of intrainstrumental nature tools-modules, which are the main areas of system innovation, the most significant of which are presented in the fig. 11.1. Selection sequence of marketing complex implementation is obeyed to basic marketing functions, which reflect the enterprise functioning specifics (industry orientation, the market development type and degree, the enterprise development strategy, and etc.). Intrainstrumental configuration (internal) components of the enterprise marketing policy are specified as a set of system marketing activities objectives achievement drivers.

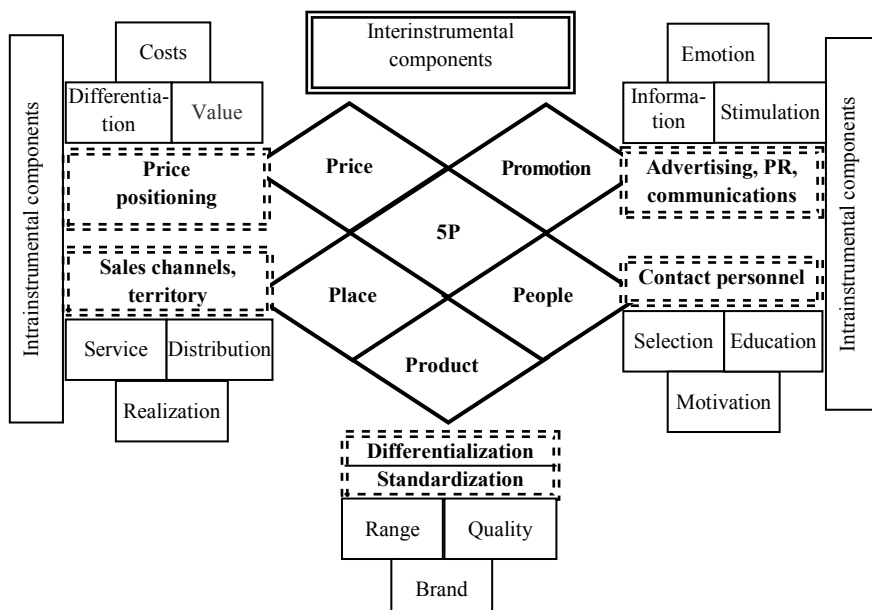


Figure 11.1. The enterprise marketing policy components [3]

In fig. 11.1 on the model 5P is showed the marketing strategy and tactics relationship. The element «PRODUCT» is realized through marketing commodity policy, which includes decisions for product differentiation or standardization, which determines the marketing decisions on the product range, product quality, branding on a particular market or segment. Element «PRICE» includes decisions on the pricing policy choice, in which decisions concerning the consumer's goods value formation, production costs, the differential pricing principles are made. Element «PLACE» – marketing policy, which includes decisions about such tools as distribution channels, geographical coverage, which

determines marketing decisions according goods realization, service. The element of «PROMOTION» includes decisions on advertising, promotion through the marketing ideas adoption on consumer information, the emotional impact on them and purchase encouragement. The element of «PEOPLE» is crucial, especially in the service sector. This element is presented in all other marketing complex elements is an integral part and is aimed at the customer-oriented business formation. Contact personnel with the aim of establishing it as an attractive factor for consumers, the solutions according the staff recruitment, training, motivation and etc. should be developed.

Therefore, the basic of marketing policy forming is the selection process and a certain integration interinstrumental and intrainstrumental marketing tools fixing that corresponds to the selected marketing concept, which, in turn, depends on market conditions and the organization mission. Marketing tools selection and integration for the enterprises, those are operating in the specific market, it is advisable to carry out based on the degree of market development, interactions characteristics the with key stakeholders, the enterprise overall market orientation, marketing environment external and internal factors.

The enterprise marketing policy components is represented in fig. 11.1. in intrainstrumental elements context there is not required the compliance of these components. Being proposed by us intrainstrumental elements are the most universal and can be used in most enterprises activity sphere. This technology is implemented in traditional marketing («1.0 and 2.0» by Kotler [4]), it is seen as outbound marketing marketing – marketing intrusion into the consumers' lives [5, p. 12], which is based on the interaction of the active firm → passive consumer.

In the marketing activities process the complex and multidimensional tasks appear. The modern consumer is becoming more demanding for goods and services; more cautious in their choice, which is provided by a variety of alternatives; more attractive in declining demand conditions. Under these conditions, for the effective goods and services promotion there are needed new and innovative approaches to marketing activity that determine its innovative development need. Prerequisites for the innovations implementation in the trade marketing (fig. 11.2) was the globalization, informatization and economic activity intellectualization spread; the formation of the golden billion desires economy in the countries, based on the mass goods customization.

These processes relate to 1) information and technological conditions that have created an electronic space for economic, social, affiliate and other relationships; 2) reducing transactionality costs in electronic commerce sphere; 3) the contradictions aggravation between the emerging

economy knowledge sprouts (with the growing importance of the production human factor: the intellectual and human potential) and deepening on consumerism trends; 4) changes in consumer behavior patterns.

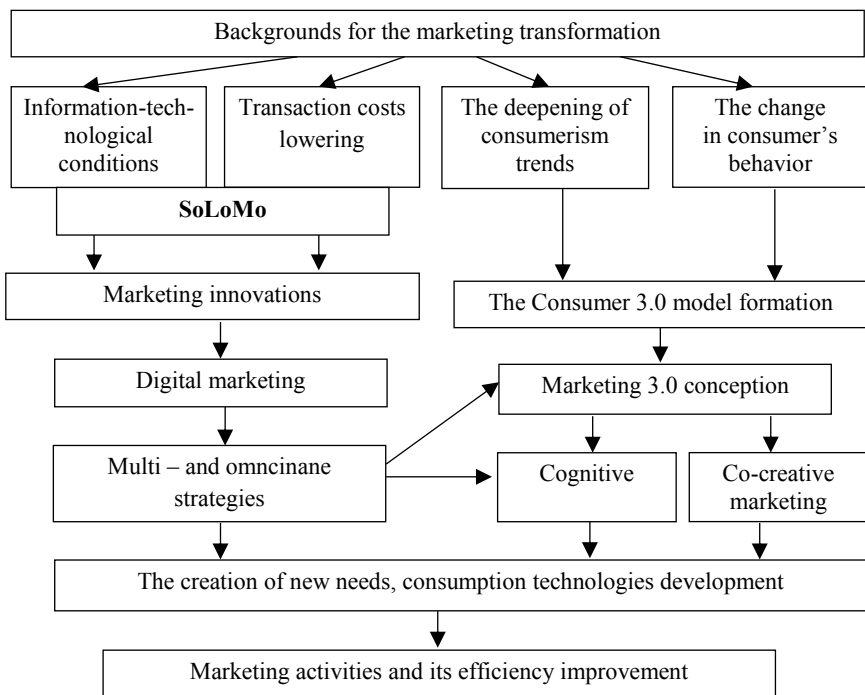


Figure 11.2. The marketing development improving forces

The key trends of the retail technological development network experts define the social integration, localization and mobility, the so-called SoLoMo model (fig. 11.2). Mobility in retail is associated with the development of m-commerce, which was contributed to the smart phones proliferation, mobile acquiring (ability to use a smartphone as a banking terminal for electronic payment) and a change in the consumer culture. According to Factum Group Ukraine estimates, the Internet penetration overall level in Ukraine at the end of 2015 amounted to about 58%, and in 2016 the users number on the regular basis was 20,2 million people, i.e. 64%. In 2015, in Ukraine the share of those who do shopping online, has reached 36%, which is the other countries of Eastern and Central Europe level (in Poland their share is 34% of all active Internet users, the Czech Republic – 38%, Lithuania – 42%, Romania – 32%) [6].

Technological innovations lead to the infrastructure information, logistics, warehousing, financial, institutional development, which have a significant impact on retail network. NFC, QR-codes and QR shopping technologies become more and more in use, 3D virtual shops, the virtual dressing room technologies for making purchases on the radio frequency RFID tags basis, contactless NFC payments technologies, Self Checkout cash desks are examples of changes in the modern commerce infrastructure. Localization is directly associated with the mobile applications development that allow to determine the customer's geolocation using GPS technology or Foursquare. Foursquare social network with geopositioning function is mainly designed to work with the mobile devices, but there is also a web version that allows the user to connect with friends, update their own and find out their friends' location. Social integration enables remote, mobile and social marketing. It is based on the technology of Phygital, that is, the digital technologies combination (Digital) and personal communications with the consumer (Physical) by creating interaction across the physical and digital worlds between the retail brands and consumers, with the aim of identifying and addressing the person's needs and preferences, including social and personal relationships. The modern client-oriented competitive strategies trade network operators' focus is a person who encourages firms to track the purchase history to personalize their services and communicate with customers through convenient communication channels.

It should be noted that on saturated markets with developed economy the new generation customers have come out, the so-called Customer 2.0 format and Customer 3.0. He makes the decision based on feedback, reviews and recommendations in online communities, his purpose is functional demand, the real and not symbolic values, but the brand orientation remains, and the highest value is in, convenience, eco-friendliness and time savings. In accordance the real consumer behavior types is the other's opinions orientation, the nearest satisfactory result (when there is too much information or the choice is very varied), a spontaneous optimism that is connected with the expectations, moods, habits (conscious stereotypes) and routine (unconscious behavior patterns). Environment, other subjects' behavior, the individual choice results and the corresponding behavioral responses affect inversely the subject's properties, changing its benefits and limitations, adjusting expectations. Besides the traditional economic restrictions in the income, prices, and social opportunities and resources form, there are institutional norms, rules and values (communitarianism, individualism, paternalism), social interdependence (patterns and role expectations), time (time spent for the information search and processing) and cognitive information (knowledge,

awareness). The consumer 3.0 choosing functional demand multiplied by the trust capital to the brand, for him the highest value is the convenience, individuality, sustainability, trust, experience, emotions and save time and money. He decides on the basis of C2C, reviews, comments, recommendations in online communities.

According to consumer's behavior changes the marketing concepts are transforming. To interact with the Consumer 3.0 the marketing concept 3.0 is used, being introduced by F. Kotler, H. Kartajaya, A. Setiana [4] and focused on the human being as a ternary hypostasis-, bio-, social-, spiritual personality, that is the mature economic entity, is responsible for the sustainable development strategy implementation. The innovation management important trend and the first stage of the marketing 3.0 implementation is joint creativity marketing (co-creative marketing), which incorporates the shared value benefits creating concept K.K. Prahalad and V. Ramaswami [7] and stakeholders [8]. According to those the co-creation marketing acts as a tool for shared values creating, all stakeholder groups' efforts (resources) [9].

The co-creation marketing technology is based on the consumer's (customer's) initiative, is inbound marketing – the process of power transition on the consumer's side [5, p. 12] when active company directs the power. The technology works both inside the company (internal marketing) and external environment according to the following action scheme: plug → choose → unite and synchronize → share → build long-term relationships. The co-creation marketing tools to some extent depend on the company economic activities scope, they mainly comprise cognitive impact funds on consumers and Internet marketing on various communication channels [10]. Online platforms bring people together so that there is the era of collaborative consumption, when not having people consume the benefits. Collaborative consumption comes to replace customized production (production merging and consumption, that is, individual design, risk). The collaborative consumption era means the distance learning opportunity, when there is an exchange of knowledge, skills, for example, in YouTube, sharing and exchanging content via Dropbox. To perform the cost-sharing, crowd funding, joint travel, if do not have your own car – carsharing, ridesharing and etc. on C2C platforms. Co-creation marketing is promoting a lifestyle, a way of consumer problems solving, the specific goods and services mix, the use and service frequency, products modernization time and level, usage ways, operation modes. The co-creation different types require different interaction with the client strategies, and the effectiveness of the co-creation marketing implementation describes not only the economic and behavioral criteria specific to the traditional market activities, but also social.

One of the top trends in building the competitive trading business is the actively using Internet marketing as the marketing theory and methodology in the Internet hypermedia. More recently, Internet marketing was perceived and developed as an innovative marketing form, but changes in information and communication technologies are so fleeting that today it there is its transformation in digital marketing (digital-marketing), which is based on comprehensive online strategies.

The main differences between digital marketing from Internet marketing are the following: the impact on the target audience is online and the offline environment; all possible digital channels are used (Internet and digital TV, mobile devices, game consoles, interactive screens, POS terminals); the greater variety of communication means with the target audience (besides the web sites, social networks self-service terminals, POS terminals, interactive screens, online games, instant messengers, mobile apps, digital gadgets and also off-line stores are actively used).

Digital marketing is increasingly activated in e-Commerce, while large companies and Start-up, services and brands are promoting new products development on the market. It should be emphasized that currently there is shifting from the marketing tools use effect on consumers and encourage them to make a purchase on a bilateral interaction through digital media. At this stage, it is not enough just to identify and research the target audience, to select the instruments within the traditional marketing in other words to form the marketing complex, it is important to maintain an ongoing dialogue that will promote consumers' deeper involvement, building and sustaining their loyalty, feedback.

Under the influence of the information and communication technologies development the promotion and communication channels are transformed. Proactive companies are already using multichannel goods and services selling, where physical and digital communication channels are complemented, on one hand, while meeting today's consumers' changing needs, and on the other – optimizes the transformation and transaction firm costs. The most innovation-active companies have gone further and are introducing omnical strategies that are based on sales channels and communication interrelation, providing the shopping possibility anywhere, anytime and using any digital means.

Changes in consumer behavior at all decision making purchase stages testify about the benefits and the needs to implement comprehensive online strategies along with traditional marketing techniques for retailers. Under the e-Commerce development influence there have already been formed the following consumer behavior types: consumers who prefer online shopping, that is, products finding, selection, alternatives analysis, the final decision, the transaction occurs in the online

shops; customers trying to get more information to reduce the shops visiting and product selecting time, its search, the alternatives analysis in the online shops, and shopping in the stationary stores, customers first visit a stationary store and then search the desired product, analyze alternatives and purchase it in online shops; customers who are exploring alternatives and choosing the goods in online stores, then visit a stationary store to see the product in reality, and then buy it online.

In these circumstances, enterprises need to implement a comprehensive strategy for the traditional and digital marketing instruments use; maximize the digital channels and communication means use and interaction with potential customers, trying to enhance brand value; to study not only the purchase but also the «digital» customer behavior, determining the digital devices presence, their use, mobile applications, ready for use when buying etc.; to monitor not only offline competitors and online competitors; to develop and implement creative ideas; to involve specialists in digital marketing (marketing analyst, IT specialist, specialist in SEO, and etc.), to create the appropriate organizational structure in the enterprise – departments, services; to develop omnical selling concept, based on the stationary store unity, online store, mobile app, providing a seamless transition from one channel to another that sets it apart from multichannel.

Network economic space allows to intensify the traditional economic exchange by applying the cognitive marketing tools (the knowledge transfer, skills consumption and new lifestyle formation), focused on the consumption culture creation through the technologies promotion and consumption patterns. Cognitive marketing is focused on the human mind, which is the entire chain subject of modern social production, in particular, and consumption. Accordingly, cognitive marketing is a marketing concept that is focused on changing consumption patterns (consumption technology + consumption standard + brand benefits + consumers' culture) through an individual or social group mental activity, perception and other basic cognitive processes to develop a mutually beneficial relationship of the consumer and the seller. Unlike the traditional marketing, focused on promotion, cognitive is the lifestyle promoting, the consumer problems solving way, the specific goods and services mix, the use and service frequency, the products modernization time and level, ways of use, operation modes.

Cognitive marketing is an important tool for interests' coordination in the transaction sectors of B2B, B2C and the consumption new standards promotion related to global sustainable development. Main areas of cognitive marketing application in industries: the healthy lifestyle and sports; beauty and fashion; tourism, hotel and restaurant and automotive. The

influence tools on the consumers' minds correspond to the technological level of social communications development. Modern information technology can contribute to the previous activities intensification, the professional knowledge improvement, the experience dissemination, a certain social atmosphere of both the old and new knowledge spread, which generally contributes to the overall mass awareness.

For the trade network the direct contact with sales staff, skillfulness plays an important role, but for the online trading – intellectual potential, the ability to monitor and process information, to create projects, to generate ideas. With modern competition methods the focus is transferred to customer's retention by identifying his individual preferences, establishing long-term relationships, developing the innovative services supply. The staff task is to develop the effective programs and actions to strengthen customers' loyalty to the commercial brand, research and constant monitoring of customer's experience, the social networking and mobile applications use to attract customers.

Conclusion. Top-trends keys in building competitive trading business are omnical marketing and goods and services selling; complementarity mobility in the infrastructure, localization and social integration as the innovation basis and e-Commerce. Digital marketing in the process of physical and digital communication channels which are combined or complemented, on one hand corresponds to today's consumer's changing needs, and on the other – optimizes the trading firm costs transformation and transaction. In the power transition to the consumer, inbound marketing is based on the cognitive marketing technologies and co-creation marketing that organically complements the marketing interaction that is focused on long-term relationships with the key stakeholders.

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11.2. The components of communication policy of Internet-marketing

Illiashenko N.S., Melnyk Yu.M., Saher L. Yu.

At the contemporary stage of the market economy, no company can be competitive and maintain market position without flexible dynamic system of communications. Information exchange accompanies all administrative activities, provides the formation and implementation of methods and functions of management, decision-making, market relations. The long-term partnership between the market subjects, increasing their competitiveness, is impossible disregarding marketing communications, their complexity, their place and role in the company's activity. A balanced communication system, most effective at minimum cost is subverted by information society, unstable economic situation in the country and the world, increasing consumers' demands, accelerated scientific and technological revolution, characterized by excessive volume of information, reduced consumers' purchasing, increasing number of communication tools and instruments, etc. [3-4].

The majority of domestic enterprises provide their communication policy intuitively, without any necessary research for internal and external media management, disregarding methods for assessing of existing and emerging communications underestimating their effectiveness and appropriateness and sometimes – even without a clear understanding of the role, importance of communications. Accordingly, structuring of major categories within the company's Internet communication policy will be effective for its implementation under conditions of new technologies rapid development and the emergence of technological innovation.

The problem of classification of marketing communication tools is always relevant, since there are always new forms, tools and technologies. The situation is similar to the system of marketing Internet communications, constantly transforming and expanding under the influence of scientific and technical factors. A large number of scholars of domestic and foreign marketing schools develop and deepen the theoretical and methodological foundations. Following scholars' research in the sphere of Internet marketing and marketing Internet communications are interesting profound V.V. Bozhkova [1-2], E.O. Golysheva [5], Dyachenko O.V. [6], N.V. Ivashova [7-8], S. M. Il-lyashenko [9-11], L. Zatsna [12], T. Kehler [13], P. Dowling [13], B. Tay-lor [13], R.B. Kozhukhivska [14], R.V. Kuznetsov [15], M.S. Lebedenko [16], G.V. Mozgova [19], M.A. Oklander [21], I.L. Litovchenko [18; 21], M.I. Botushan [21], A.A. Romanenko [22], V.V. Stadnichenko [22], M. Fleshner [23], R. Owen [24], M. Welsh [25], R. Jackson [25] and others.

But, despite the sufficient number of scientific research on selected topics, issues of systematization and classification of objects of marketing Internet environment remain unresolved.

The emergence and development of the Internet have revolutionized the different spheres of society and management. Internet organically supplemented the media system and communications along with traditional print media (the press), radio and TV. Primarily Internet appeared as a means of communication. Today the migration and transformation of traditional media into Internet-environment is a stable trend, and the network itself serves as an independent integration system for social and marketing communications. There emerged new forms and categories of Internet marketing communications. Marketing Internet communication – is a modern set of communication tools and activities dedicated to achieving company's marketing goals by means of the Internet. Thanks to the continuous development of media means of Internet communications users are influenced by advertisements from manufacturers or sellers of products every day. The lack of universally accepted classification of marketing Internet communications is conditioned by the fact that scientists' approaches vary greatly because there is a number of unresolved issues, including the following:

- 1) traditional scientific and methodological approaches disregard Internet as a media resource;
- 2) development of software technology and technical means of product promotion via the Internet occurs on practice prior to theoretic and methodological basis, which requires considerable time;
- 3) constant emergence of new means and technologies of communicative impact on the target audience.

Critical analysis of the most common approaches to classification of marketing Internet communications is presented in table 11.1.

The complex of marketing Internet communications in our view should be presented by traditional instruments that will differ in means and technologies of influence.

1. Internet advertising (media, banner, contextual, background, video, static, etc.).
2. Public Relations (PR) («good works» on behalf of the organization or individual manager's PR, promotional YouTube videos, etc.).
3. Sales promotion (discounts while on-line orders, discount coupons, bonuses, volume discounts, etc.).
4. Private sales (Internet sales, personal communication via chats or Skype and Viber, on-line sales consultation).
5. Direct marketing (mailing list, social networks personal pages appeal etc.).

Table 11.1. Analysis of approaches to classification of marketing Internet communications.

Author	The definition of marketing Internet communications and their types	Features of author's approach (specific forms of technology, tools, strategy)
M.A. Oklander, I.L. Litovchenko	Traditional marketing communications complex and complex of Internet communications: Internet Advertising, Internet PR, sales promotion, direct marketing, Internet sales, search engine optimization and virtual communities (forums and chats, blogs, virtual networks, virtual worlds and games)	Authors do not single out specific forms inherent in Internet environment, but complement the traditional range of communications with new elements
A.A. Romanenko	<i>virtual marketing communications</i> (marketing Internet communications): Internet advertising, Internet PR, sales promotion on the Internet	Great attention is paid to the formation of marketing Internet strategies and development of this issue, although the tool classification contains only three types and the position of the author in concerning other types is not clear; identifies the website as a means of communication
S. M. Ilyashenko	<i>marketing Internet communications</i> : e-mail advertising, electronic bulletin board (BBS), context (search) advertising, media (banner) advertising, video (digital) advertising, background advertising, rich media, lead generation, websites sponsorship, targeting, search engine marketing (SEM), social networking optimization, targeting, Search Engine optimization (SEO), social media marketing, viral Internet marketing, direct Internet marketing	The author does not separate different forms of instruments, and defines them as separate equivalent instruments along with traditional tools of marketing communication [himself]; in later publications identifies a set of Internet-marketing tools with means of marketing Internet communications and transforms the classification into different types of marketing (search, viral, SMM marketing, etc.)
V.V. Bozhkova	<i>Internet advertising</i> (in the general classification an ATL-tool); <i>interactive marketing</i> (including Internet tools in the overall classification, VTL tool); <i>new forms, including</i> : community marketing, impact marketing, partisan marketing, horror marketing, provocative marketing, surrounding media, ambush marketing, flash mob, scandalous strategy, brand blogs, creation of interesting messages (TTL-instruments)	The author uses a modern approach to classification of marketing communications tools ATL-, BTL-, TTL-types; does not separate the system of Internet communication; identifies new forms, which include Internet communication (refer to TTL instruments) in the general classification of marketing communications

Table 11.1 continuation

Author	<i>The definition of marketing Internet communications and their types</i>	Features of author's approach (specific forms of technology, tools, strategy)
M.S. Lebedenko	<i>marketing communication tools in Internet marketing:</i> Internet advertising, Internet PR, sales promotion on the Internet; The author classifies means of implementing of marketing communications through goals of marketing Internet communications	The author describes Internet communications with special properties, applied approaches and specific electronic environment; Considers Web resources, Internet tools, strategies of marketing Internet communication as separate categories
G.V. Mozgova	<i>specific Internet communication tools:</i> corporate website, advertising, media advertising, widgets, Internet games product placement, cross-branding, affiliate marketing, SMM, SEM, goods ranking and comparison websites, podcasting, blogging, viral marketing, direct marketing, e-CRM-systems	The author examines marketing communication policy within the elements of Internet marketing, determines the specific features and Internet communication tools; identifies website as a marketing tool for Internet communications
E.O. Golysheva, T.V. Kirichenko	<i>Internet marketing tools: website, SEO, media advertising, contextual advertising, direct-marketing, SMM (SMO), blogs, viral marketing, SMS-marketing, info graphics</i>	Authors identify Internet marketing tools with the tools of marketing communication and Internet technologies; View the website as means of marketing Internet communications; examine Internet marketing tools in various areas as B2B and B2C
V.V. Stadnichenko, O.V. Diachenko	The system of marketing communications is divided into traditional marketing communications complex and Internet marketing: <i>input marketing</i> (search engine optimization, blogging and podcasts, SMM and SMO, content publishing (e-books, info graphics, video), web analytics, e-mail marketing, website) <i>and output / traditional marketing</i> (contextual and banner advertising, viral marketing, webinars, virtual events, paid search)	In their unconventional approach authors place input marketing into marketing communications complex and justify the relationship with Internet marketing and its tools
N.V. Ivashova	<i>basic tools</i> of communication (advertising, personal communication, public relations, sales promotion), complex instruments: professional events and corporate website; tools and technologies of Internet-marketing: SMM-marketing, mobile marketing, a new format of e-mail marketing, brand / company website cross channel content marketing	The author views corporate website as a separate and complex communication tool which implements advertising, PR, personal communication, etc.; examines brand-focused marketing communications system

Table 11.1 continuation

Author	<i>The definition of marketing Internet communications and their types</i>	Features of author's approach (specific forms of technology, tools, strategy)
R.B. Kozhukhivska	<p><i>Classification of marketing communications according to the impact on the target audience:</i> direct (including Internet means) and indirect The author defines Internet marketing communication as a set of ways, means and mechanisms to disseminate information among the Internet audience through mechanisms of Internet technology – websites, portals, search engines, news groups, e-mail</p>	<p>The author provides new tools of communication – marketing Internet technologies; pays great attention to the process of implementing the strategy of Internet communication, which is based on setting goals of Internet communication and choosing the optimal combination of media communications</p>
L. Zatsna	<p><i>traditional complex of Internet marketing communications and elements of Internet marketing:</i> – media advertising, contextual advertising, search engine marketing in general and SEO in particular, the promotion of social networks (SMO and SMM), direct marketing using e-mail, RSS and so on., viral marketing, partisan marketing, Internet branding</p>	<p>The author defines Internet as a special innovative means of communication; Firstly identifies the tools of marketing communication with tools of Internet marketing in general, but then separates some specific components of marketing Internet communications, namely the website and its «promotion»: SEM, SEO, SMO, SMM and viral marketing</p>

Authors' vision of the different forms of marketing communications implemented by respective Internet means and technologies is presented in fig. 11.3.

Communicative Internet technology – is a communicative technical (programming) means for creation communicative messages, maintenance of information resources and transmitting this information to target consumers on the Internet.

Means of Internet communication – is materialized Internet (Internet) means used to bring the information to the consumer through Internet technologies.

We believe that the only means of communication on the Internet is a website, but the information (communicative message) can be presented Internet in various forms. Hence the need to distinguish various means of Internet communications occurs: electronic media, banners, portals, Rich media, blogs, forums search engines, message boards, e-mail, articles, video blocks, files, cookies, personal pages, virtual communities and so on.

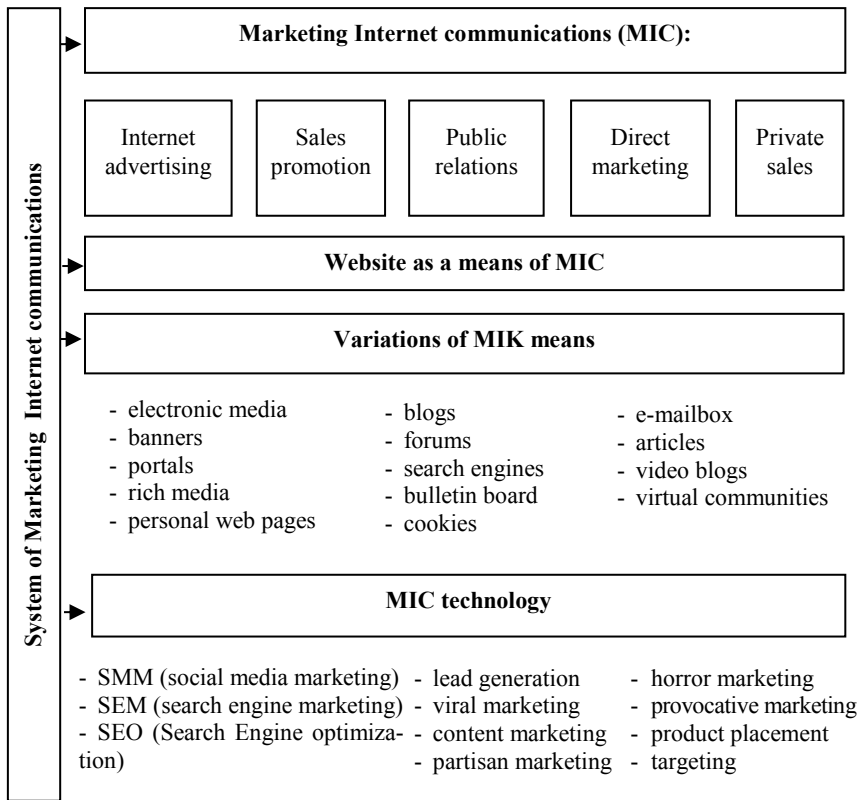


Figure 11.3. System of marketing Internet communications [authoring]

Modern technologies influencing the target audience on the Internet are quite diverse. Some scholars identify them as separate tools of marketing communication, but, in our opinion, they should not be merged. Thus, the most popular communicative Internet technologies are the following: SEO-search engine optimization, lead generation, product placement, targeting, and various kinds of marketing with its own set of rules, features and techniques: SMM (marketing social networking), SEM (search engine marketing), viral marketing, content marketing, partisan marketing, horror marketing, provocative marketing etc.

Modern world is hard to imagine without contemporary means of information transfer that can ensure an effective flow of information to targeted recipients. Technical means of communication are applied in almost all areas, especially in companies' marketing activity. The use of

advanced information technology can not only simplify the marketing services but also make it more efficient. Consumers' needs are changing and developing, competition is increasing both in the domestic and foreign markets, new business opportunities, new technologies and innovation are being constantly invented.

Modern Internet users are an attractive segment for many companies, because today they spend most of their time Internet, working and resting. So today's successful business uses all possibilities of the Internet to promote and sell their products and retain customers, and this is possible only through effective marketing of Internet communications.

Effective use of tools of marketing Internet communication complex is plausible only regarding their features, understanding the technology of their impact on the target consumer – an Internet user. Such internet environment offers great opportunities for successful operation in various business (B2B and B2C).

Results can form the basis of methodological approaches to selection and assessment of the effectiveness of marketing Internet communications, and also selection of appropriate strategies since traditional scientific and methodological approaches disregard Internet as a media resource.

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11.3. Theoretical and methodological basis of the analysis of the image at the industrial enterprise

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In modern conditions the role of intangible factors is dramatically increases in ensuring the competitiveness of industrial enterprises. The practice shows that their activities cannot be reduced only to respond to changes in external and internal conditions. A variety of external influences and corresponding reverse administrative actions are reflected concentratedly in economic contractors and contact audiences relation to the enterprise, thus forming in their minds its image. The world experience proves that the role of the image as a competitive factor is constantly increasing, because of the nonlinear increase of the impact of the communication flows on the behavior of all market participants.

According to this the image management allows us to account for and direct the communication flows to ensure positive perception of internal and external audiences of all aspects of the company activities that increases its competitiveness and increases the chances of market success.

The effective management of the image of the enterprise involves a preliminary analysis of its level as at the moment, so in the dynamics. This evaluation results allow you to obtain a detailed picture of the condition of the image, and also use the obtained results as the basis for the formation of the strategy and tactics of management.

The problem of the analysis of the company's image was studied by many domestic and foreign scientists. So, in the works of such scientists as T. Matiushina [1], B. Gardner [2] the methods of the qualitative evaluation of the image are systematized, in particular: the method of sociological surveys; focus groups on certain categories of contact audiences; individual poorly structured (deep) interviews, including projective techniques; expert methods; analysis of secondary information, etc. The analysis of the known methods for quantitative evaluation of the image showed that they can be organized as follows: assessment with the help of semantic differential (Dagaieva E. [3], Kirpishchikova O. [4], Kotler F. [5], T.V. Matyushina [1]); the evaluation with the help of integral indicator (Blinov, A.O. [6], T.V. Matyushina [1], Siniaieva N.M. [7], Tomilova M.V. [8], Shkardun V.D. [9]); using the definition of difference of market and business value – goodwill (Fomina O.V. [10], Aleshina I.V. [11]).

The analysis of the approaches to the formation of the criterial base and system of indicators for evaluation of the image of the company shows that they can be grouped as follows: financial (Savchuk V.P. [12]),

production (Primak, T.O. [13]), marketing (Dowling G. [14], Pocheptsov[15], Primak, T.O. [13]), managing (Khalet G.G. [16]), visual-graphic (Karyagin N.B. [17], Mozolin A.V. [18], Olins U. [19]), social (Hatton F. [20], Shifman, L. [21]).

The considered methods, criteria base and system of indicators are widely used in the practice of the analysis of the image of enterprises and institutions of various areas.

However, the practice shows that each method has specific area of application and none of them (both quantitative and qualitative) cannot be considered as universal. Additionally, the use of quantitative method does not only allow to examine the image holistically, that is, to determine the significance and the relationship of its emotional characteristics. It is necessary to use the combinations of several quantitative and qualitative methods. This requires the developing of the approach that would allow: to conduct a qualitative assessment of the components of the image and its elements, allowing you to get a general idea of its strengths and weaknesses for each specific situation; to create, according to the results the qualitative analysis, the criterial base for the quantitative assessment; to conduct a quantitative assessment of the image as a whole as well as its individual elements.

The purpose of this research is to develop theoretical and methodological foundations of the combined quantitative-qualitative analysis of the image of the industrial enterprises, the formation of the corresponding criterial base and the system of the indicators.

The versatility of the image of the modern enterprise requires the analysis of its individual components and their elements that will help to form an effective strategy to manage it. The author's view on the structure of the image is shown in fig. 11.4

On the basis of the shown in fig. 11.4 Structure (the subsystems of the image: external, internal; their components: the product image, business image, etc.; the constituent elements) we will form of methodical bases of the analysis.

We propose such sequence of the analysis and evaluation: of the individual elements of each component; of the components, as the generalization of the estimates of their elements; of the subsystems of the image (external, internal), as a generalization of the estimates of their components. The evaluation of the image is proposed to perform in the context of each economic counterparties and of each of the contact groups (contact groups), including: customers, suppliers, intermediaries, staff of the analyzed enterprise, population of the region, investors, media, state institutions, and the like. That is, each element of the image corresponds precisely to the target audience at which it is oriented.

We would like to note that the evaluation of the elements of the image can be carried out: by means of an expert survey of the representatives of the relevant groups, contact groups and employees of the company; using quantitative and qualitative methods.

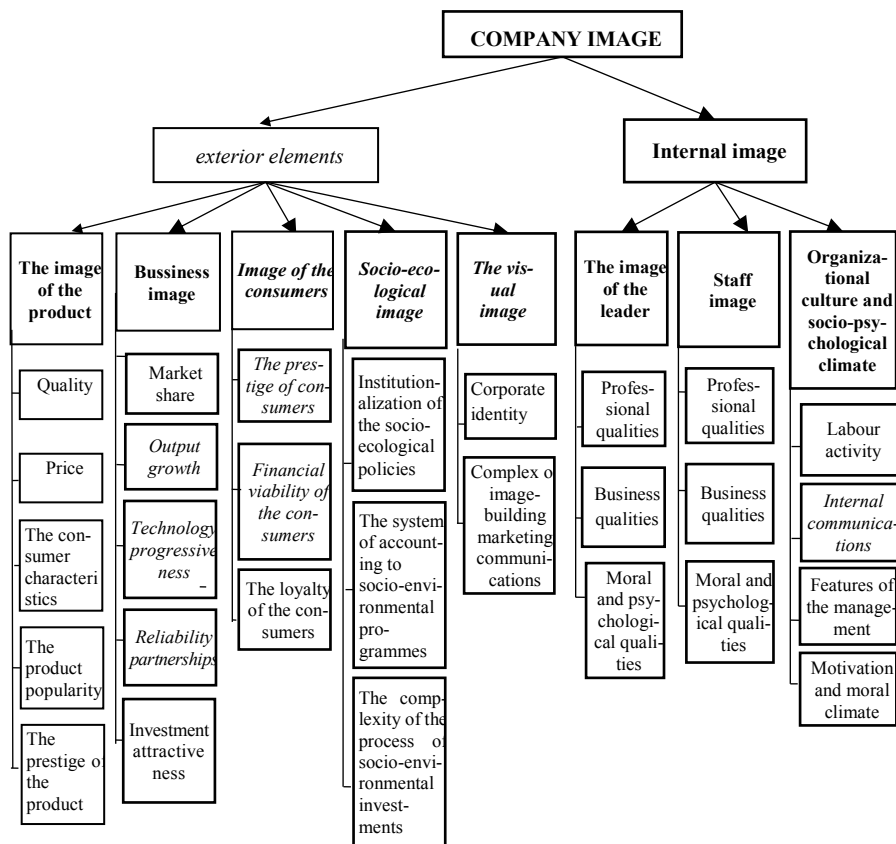


Figure 11.4. The structure of image at industrial enterprise

The feature of the assessment of the internal image is that the experts are the staff and managers of the enterprise as well as the representatives of the external contact audiences. That is, a bilateral assessment is carried out, which is characterized by complexity, and high reliability.

The proposed scale for the qualitative evaluation of the elements of the image is presented in table. 11.2. Since the evaluation of the elements of the image can be either quantitative (relative valuations, relative to the reference) and qualitative (scoring, see table. 11.2), it is proposed

to carry out their normalization (bringing of calculated values to the single dimension) according to the scale, which is shown in fig. 11.5.

Table 11.2. Ordinal and point scale for qualitative assessment of the company image elements

Ordinal scale	Evaluation in points
The highest level	5
High level	4
Middle level	3
Low level	2
Neutral level	1
Negative level	0

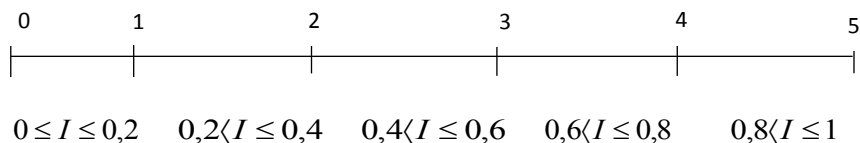


Figure 11.5. The scale transfer

The generalized point expert evaluation of the element of the image can be calculated with the help of the formula:

$$K_{eл} = \frac{\sum_{i=1}^m \left(\frac{\sum_{j=1}^n Q_{ij}}{n} \right)}{m} \quad 11.1$$

where Q_{ij} – is the evaluation of the i -th parameter of the element of the image by the j -th expert;

n – number of experts;

m – the number of parameters (estimated characteristics) of the element.

We propose to define an integrating score (according to all the elements) assessment of the component of the image of the company with the help of the formula:

$$K_{\text{CK}} = \sum_{i=1}^k K_{e\pi_i} \cdot W_i^{e\pi}, \quad 11.2$$

where $K_{e\pi_s}$ – the evaluation of the i -th element of the image of the enterprise;

$W_e^{e\pi}$ – the weight of the i -th element of the image;

k – is the number of elements of the considered component.

Accordingly, the integral index of the external (internal) image is calculated with the help of the formula:

$$I_{\text{qact}} = \sum_{i=1}^L K_{\text{CK}_i} \cdot W_i^{\text{CK}}, \quad 11.3$$

where I_{qact} – an integral index of the external (internal) subsystem of the enterprise image;

K_{CK_i} – the evaluation of the i -th component of the image of the enterprise;

W_i^{CK} – the weight of the i -th component of the external (internal) part of the image;

L – is the number of components of the external part of the image (in our case 5) or internal (in our case 3).

To assess the image of the enterprise and its further analysis and provision of the appropriate recommendations, it is necessary to define the evaluation criteria of image, that is to establish the criteria database and the scorecard. Their formation is based on the critical analysis of the literary sources mentioned above, the practice of image building of the domestic and foreign industrial enterprises, on the authors' researches.

Let us consider the evaluation of each component separately.

The exterior elements (E) of the image of the company.

E.1. *The image of the product.* The evaluation of the product image is performed by the specialists of the enterprise and its customers (actual or potential) which are experts. The estimated parameters include those that bring the users instrumental benefits (product quality, price, technical, economic, service benefits) and those that provide expressive benefits, in particular, the popularity and prestige of the product.

E.1.1. *The ratio of the price and the quality* of product is analysed against the best in the market competitor:

$$U_a < U_k; \quad Y_a > Y_k \quad (5 \text{ points});$$

$$U_a < U_k; \quad Y_a = Y_k \text{ або } U_a = U_k \text{ або } Y_a > Y_k \quad (4 \text{ points});$$

$$U_a < U_k; \quad Y_a < Y_k \text{ або } U_a > U_k, \quad Y_a > Y_k \quad (3 \text{ points});$$

$$U_a > U_k; \quad Y_a = Y_k \text{ або } U_a = U_k \text{ або } Y_a < Y_k \quad (2 \text{ points}); \quad 11.4$$

$$\frac{U_a}{Y} = \frac{U_k}{Y_k} \quad (1 \text{ point});$$

$$U_a > U_k; \quad Y_a < Y_k \quad (0 \text{ points})$$

where U_a – is the price of the product of the analyzed company;
 U_k – the price of the goods of the enterprise-competitor;
 Y_a – the quality of the product of the analyzed company;
 Y_k – the quality of product of enterprise-competitor.

The evaluation is performed by the experts of the analyzed company.

E.1.2. *The consumer characteristics* of the analyzed goods are evaluated by the customers and employees of the company by comparing with the characteristics of competitors' products and determine their assessment according to the ordinal and point scale, which is presented in table 11.2.

The evaluation of consumer characteristics is calculated with the help of the index:

$$O_{\text{спож}} = Q_{\text{mex}} \cdot W_{\text{mex}} + Q_{\text{екон}} \cdot W_{\text{екон}} + Q_{\text{cep}} \cdot W_{\text{cep}}, \quad 11.5$$

where Q_{mex} – is a complex assessment of the technical characteristics of the goods;

W_{mex} - the weight of the group of technical characteristics;

$Q_{\text{екон}}$ – a complex assessment of the economic characteristics of the goods (elements of operating costs, disposal costs, and the like);

$W_{\text{екон}}$ – the weight of the group of economic characteristics;

Q_{cep} – is a complex assessment of services provided by the enterprise;

W_{cep} – weight of the group of service characteristics.

The values Q_{mex} , $Q_{\text{екон}}$, and Q_{cep} are calculated by the formula (11.1), where W_{mex} , $W_{\text{екон}}$, W_{cep} are calculated as the average expert opinion.

E.1.3. *The evaluation of the product popularity* is calculated relative to the leader:

$$O_{п.т.} = BЧП_n = \frac{ЧP_a}{ЧP_n}, \quad 11.6$$

where $BЧП_n$ – the market share of the analyzed company relative to the major competitor;

$ЧP_a$ – the market share of the analyzed company, %;

$ЧP_n$ – market share of the enterprise that is the market leader, %.

The assessment is carried out by the specialists of the enterprise.

E.1.4. *The prestige of the product* is determined by a scale, which is presented in table 11.2. The assessment of prestige is performed by the customers. The averaging of the evaluations of the customers is performed by the formula (11.7).

E.2. Business image of the company estimated economic enterprises contractors, suppliers, dealers, investors and others. Business valuation parameters of the company image is the market share, growth rates relative to the average in the industry, progressive technology, reliability, partnership and attractiveness of invest-traditional business.

E.2.1. *Market share of the company (in sales)* is estimated according to the formula:

$$O_{\text{прод}} = \frac{O\Pi_a}{O\Pi_{\text{зар}}}, \quad 11.7$$

where $O\Pi_a$ – the market size of the analyzed enterprise in physical or monetary terms;

$O\Pi_{\text{зар}}$ – total market volume in physical or monetary terms.

The specialists of the enterprise carry out assessment.

E.2.2. The rate of growth of production volumes relative to the average in the industry:

$$O_{\text{рост}} = \frac{O_a}{O_{\text{зар}}}, \quad 11.8$$

where O_a – the increase in production of this enterprise, UAH;

$O_{\text{зар}}$ – average production growth, UAH.

The specialists of the enterprise carry out assessment.

E.2.3. Progressive technologies are calculated using the ratio:

$$O_{\text{прог}} = \frac{Q_{\text{нов}} + Q_{\text{удоск}} + Q_{\text{запоз}}}{Q_{\text{заг}}}, \quad 11.9$$

where $Q_{\text{нов}}$ – the amount of the radically new (innovative products), UAH.;

$Q_{\text{удоск}}$ – volume improved products in-house for the development and implementation of innovations, UAH.;

$Q_{\text{запоз}}$ – the amount borrowed innovative products for the development and implementation of innovations, UAH.;

$Q_{\text{заг}}$ – the total volume of output, UAH.

E. 2.4. Reliability of partnership is calculated using the index of regular partners (percentage of regular consumers in the total number of customers of the company):

$$I_{\text{пост.п.}} = \frac{N_{\text{пост.п.}}}{N_{\text{спож}}}, \quad 11.10$$

where $N_{\text{пост.п.}}$ – the number of regular consumers of the enterprise (cooperation time – more than 5 years for a new enterprise – more than 1 year);

$N_{\text{спож}}$ – the total number of customers of the company. The specialists of the enterprise carry out assessment.

E.2.5. Investment attractiveness of the enterprise is calculated by the specialists of the company with total liquidity ratio:

$$K_{\text{зл}} = \frac{\text{Current assets}}{\text{Current liabilities}}, \quad 11.11$$

According to the accounting balance sheet:

$$K_{\text{зл}} = \frac{\phi F1line1195}{F. 1line1695},$$

where $K_{\text{зл}}$ is the coefficient of General liquidity of the company.

For a detailed analysis into consideration, necessarily accept parameters NPV, PI, IRR, however, for the preliminary analysis is used $K_{\text{зл}}$.

E.3. *Image of the consumers*, are the benefits that the company receives from the cooperation: with well-known corporations or individuals; with financially sound customers; with the consumers who for the most part are loyal to the company. These benefits appear in the form of the growth of positive image of the company, the positive attitude to it of economic contractors and contact audiences. The estimated parameters are: cooperation with famous corporations and individuals; financial viability (sustainability) of the consumers; the share of loyal consumers and the like.

E.3.1. *The prestige of consumers* is defined by the evaluation of cooperation with famous corporations and individuals, and is carried out according to the following characteristics and scale, as shown below:

- the absence of well-known corporations and individuals (0 points);
- the company plans to establish relationships with known corporations or individuals (1 point);
- the company is in the process of negotiations on joint activities with well-known legal corporations and individuals (2 points)
- the company signed a cooperation agreement with the well-known legal corporations or natural persons (3 points);
- the presence of certain legal corporations or individuals among the consumers (4 points);
- the presence of well-known legal corporations and individuals among the consumers and business partners (5 points).

The evaluation is translated into normalized according to fig. 11.5.

E.3.2. *Financial viability of the consumers* is defined according to the following principle: for legal corporations – the payment is made in a timely manner, in accordance with the terms of the contract; for physical persons – according to the the share of products purchased by them in the company that is marketed as products of the highest price segment.

The consumers are loyal who always prefer the product of the analyzed enterprise to the competitors' products.

The evaluation is conducted by specialists of the analyzed company. The loyalty of the consumers and their quantitative parameters are determined in the course of specially organized marketing research. The evaluation of the parameters 3.2 and 3.3 are relative (normalized).

E.4. *Socio-ecological image of the enterprise* is evaluated by two expert groups: public and state institutions. The level of socio-environmental image is evaluated on the basis of the analysis of the compliance of the activity of the enterprise to the standards of corporate social responsibility (respectively to the area). The elements of the evaluation of this component of the image: the institutionalization of socio-environmental policies; accounting system of socio-environmental programmes and

measures for their implementation, the complexity of the process of socio-environmental investments (table 11.3). The expert evaluation of the individual elements of the socio-environmental image is based on the specified characteristics and is carried out by specialists of the analyzed enterprise in accordance with the index and mark scales that are given in table. 1 and also formula (11.1). Their arithmetic mean is a generalized assessment of socio-environmental image. The received numerical score is translated into a normalized scale in fig. 11.3.

Table 11.3. Characteristics of the elements of evaluation of socio-environmental image (formed on the basis of [22; 23])

Elements of the evaluation	Characteristics
E.4.1. Institutionalization of the socio-ecological policies	the presence of the special document that identifies socio-environmental policy of the enterprise; the presence of the special unit responsible for the implementation of socio-environmental programs of the company; consolidation of key social policy provisions in the collective agreement
E.4.2. The system of accounting to socio-environmental programmes and measures of their implementation	the presence of annual financial reports prepared in accordance with international standards; implementation of international standards of social responsibility
E.4.3 The complexity of the process of socio-environmental investments	implementation of measures for the protection of the health and safety of staff; environmental activity and resource saving; support of fair business practices; development of local communities

E.5. The *visual image of the company*. Experts in the assessment of a visual image are consumers, members of the public and plant personnel. The evaluation indicators are presented below.

E.5.1. *Corporate identity* of the company is assessed according to the scale:

- the absence of a corporate style of the company (0 points);
- the beginning of work on the formation of corporate style (1 point);
- the presence of individual components of the corporate style (2 points);
- -existing corporate style needs improvement (3 points);
- the presence of a corporate style, but there is a need to expand the scope of its use (4 points);
- the presence of style and its constant use in the complex of marketing communications (5 points).

The overall evaluation is performed by the formula (11.1), it is transferred to a normalized according to the scale in fig. 11.3.

E.5.2. *The level of use of complex image building marketing communications* is evaluated according to the scale:

- lack of any information about the company (0 points);
- data about the enterprise are contained only in a general reference (1 point);
- the presence of the website of the company, its partial update, General information about the company in thematic directories and other resources (2 points);
- the available range of marketing communications needs improvement (3 points);
- the use of a complex of marketing communications needs to expand its tools (4 points);
- the use of a full range of marketing communications (5 points).

Let us analyze the elements of the corporate image of the company.

I.1. *The image of the leader.* The experts in the evaluation of the image of the head can be: consumers, investors, company employees and other economic partners and contact audiences. The evaluation parameters of the image of the head are divided into 3 groups (table. 11.4).

Table 11.4. Characteristics of the elements of evaluation of the image of the head (constructed based on [24, 25])

Elements of the evaluation	Characteristics
I.1.1. Professional qualities	<ul style="list-style-type: none"> - professional knowledge; - professional skills; - competence; - the ability to accumulate and upgrade their professional experience; - the degree of implementation of the experience at the position
I.1.2. Business qualities	<ul style="list-style-type: none"> - organization; - responsibility; - initiative and resourcefulness; - autonomy of decision-making; - authority; - good communication skills; - the quality of the final result
I.1.3. Moral and psychological qualities	<ul style="list-style-type: none"> - humanity; - the ability to self-evaluation; - ethical behavior; - justice; - honesty; - ability to adapt to new conditions; - leadership qualities

The assessment methodology is similar to paragraph E.4.

I2. The evaluation of the staff image may be carried out by the experts of representatives of the various contact groups: consumers, investors, etc. To the assessment characteristics we include: employment quality and psychological quality (tab. 11.5). The assessment of these mentioned elements is carried out in accordance with the scale given in table. 11.4.

Table 11.5. Characteristics of the elements of the evaluation of the staff image (built on the basis of [26; 27])

Elements of the evaluation	Characteristics
I.2.1. Professional qualities	qualification; experience; ability to work; creative initiative
I.2.2. Business qualities	organization, discipline
I.2.3. Moral and psychological qualities	honesty; integrity; responsibility; discipline; good communication skills

The evaluation is carried out similarly to item I.1.

I.3. The evaluation of the organizational culture and socio-psychological climate (OC and SPC) of the enterprise is carried out by the experts from the staff and managers, and also persons involved from outside. The important point is the comparison of the estimates that will give the opportunity to analyze perceptions that are formed about the inner element of the image. The assessment of organizational culture and socio-psychological climate is carried out by expert method on the basis of the methods proposed by Ladanov I.D. The author proposes an improvement of this technique that allows you to get more information about the object and to draw conclusions regarding the level of its image.

29 statements are proposed for evaluation, which are combined in 4 groups, that are the elements of the organizational culture and SPC which should be evaluated: labor activity; internal communications; management; motivation and morale.

Among the proposed claims there are no issues related to the traditions of the enterprise and the availability of social package for the staff. Therefore, to evaluate the image OC and SPC the author proposes to include appropriate questions in the section of motivation and morale (table. 11.6).

We propose to carry out the evaluation of each element according to the scale, given in table. 11.3. After that, each item is assigned a weight, and further we define the general indicator of the level of OC and SPC.

Table 11.6. Characteristics of the assessment elements of the organizational culture and socio-psychological climate ([24], modified) (marked proposed features)

Evaluation elements	Characteristics
Labour activity	<ol style="list-style-type: none"> 1. An opportunity is given for the new employees to learn the specialty. 2. The opportunity is given to the staff to acquire additional qualifications. 3. The adequate and transparent system of nomination for higher positions is established. 4. The working places are fully equipped. 5. The work of staff is an interesting one. 6. The work load is optimal
Internal communications	<ol style="list-style-type: none"> 1. The presence of clear instructions and rules of conduct for all categories of workers. 2. The system of internal communications is established. 3. There is a cultivation of a variety of forms and methods of communication (business contacts, meetings, information printouts, etc.). 4. The lack of obstacles in obtaining in-house information. 5. There is an encourage for two-way communication. 6. There is an encourage to the direct contact
Features of the management	<ol style="list-style-type: none"> 1. The activities of staff is clearly and thoroughly organized. 2. Taking timely and effective decisions. 3. Staff participation in decision-making. 4. There is a formed professional (sophisticated) evaluation of employees. 5. The disciplinary action is only an exception. 6. There are solutions to conflict situations, taking into account all the realities of the situation. 7. The practice of delegation of authority to lower echelons of management. 8. The trend towards innovation
Motivation and moral climate	<ol style="list-style-type: none"> 1. The absence of complaints of employees regarding wages. 2. The desire and initiative receive rewards. 3. Maintaining good relations between workers. 4. Maintaining good relationship between employees and management. 5. The attention to individual differences of workers. 6. Encouraging the desire to work. 7. Cooperation and mutual respect between employees of different departments. 8. The sense of pride among employees for their organization. 9. Fun workers available social package, which provides the enterprise*

$$K_{\text{ОКСПК}} = Q_{\text{ТД}} \cdot V_{\text{ТД}} + Q_{\text{БК}} \cdot V_{\text{БК}} + Q_{\text{ОУ}} \cdot V_{\text{ОУ}} + Q_{\text{ММК}} \cdot V_{\text{ММК}}, \quad 11.12$$

where $Q_{\text{ТД}}$ – Is a scoring parameter «labour activity»;

$V_{\text{ТД}}$ – the weight of the parameter «labour activity»;

$Q_{\text{БК}}$ – score of the parameter «internal communication»;

V_{BK} – the weight of parameter «internal communication»;
 Q_{Oy} – evaluation of the parameter «features of the management»;
 V_{Oy} – the weight of the parameter «features of the management»;
 Q_{MMK} – the evaluation of the parameter «motivation and morale»;
 V_{MMK} – the weight of the parameter «motivation and morale».

The values Q_i are determined according to the formula (11.1). Scoring K_{OKCCK} is transferred to a normalized scale in fig. 11.5. The checking of the the adequacy of the formed criteria base and the system of performance indicators, and a developed methodological approach to the analysis of the image were performed at the industrial enterprises of Sumy region, specialising in the design and manufacture of machinery and equipment. As the object of analysis the engineering enterprise LLC «Design Bureau «Ukrspetsmash» and LLC Turbomash, were taken.

The results of the analysis gave reason to develop a set of recommendations for managing development of new subsystems, components and elements of the image of the industrial facilities to ensure their success in the market.

On the basis of systematic analysis and synthesis of both domestic and foreign developments, theoretical and methodological basis of quantitative and qualitative analysis are improved and the criterial base and system of indicators for the assessment of subsystems and components of the external and internal image of an industrial enterprise as well as of their individual components and elements are formed.

The formal dependences for the direct evaluation of the elements of the components of the image, and also the scale for expert qualitative and quantitative assessment of individual elements are proposed. The scheme of reduction to a single dimension of the evaluations, determined by different scales is developed. The scheme of coagulation of evaluations of individual items in the complex assessments of the individual components and the integrated assessment of external and internal parts of the image of the company are developed. The exact composition of the contact audiences and economic counterparties, which perform expert evaluation of the elements of the image has been clarified. The parameters and estimates of the constituent elements of the external and internal image to be evaluated has been identified and systematized. The results of approbation of the developed methodological approach at the machine-building scientific-production enterprises in Sumy confirmed its effectiveness and adequacy to the tasks of analysis of the image of the industrial enterprise with the purpose of formation of a system of measures for improving it.

The obtained results significantly deepen the basis of the analysis of the image of the industrial enterprises and create preconditions for the formation of organizational-economic mechanism of management of image according to the results of its diagnostics. Further studies should be aimed at developing a formalized approach to the management of the image of an industrial enterprise according to the results of diagnostics of a condition of separate subsystems, components and their elements.

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11.4. Tourist information system organization for sentimental cultural tourism

Tomczewska-Popowycz N.Ie.

Tourism is one of the most profitable areas of the world's economy. Tourism provokes people's interest to meet the world. One of the purposes to travel is getting knowledge (information) about specific places and the past.

The problem of effectiveness and management of the system of tourist information is relevant for the whole world, where tourism is being developed. Scientists work on different issues, connected with the tourist marketing and information: tourist information centers Havryliuk A. [13], models of tourist information search Fodness D., Murray B. [7]; Luo M. [10], systems of tourist information and marketing Merski J., Piotrowski J. [11], Kruczek Z., Walas B. [9] and others. However, there is a small amount of researches dedicated to the particular types of tourism and preparation of the tourist informational background for them.

The target of the research is to present the tourist information sources among the Polish tourists who came to Lviv. The author suggests the ways to develop the system of tourist information for

sentimental cultural tourism which refers to the ideas of sustainable development.

G. Piwnik [12] gives a definition of tourist information as presenting any data, which is interesting for a tourist, for example about the tourist or para-tourist (accommodation, gastronomy, communication, information about travel agencies' offers, etc.) base, about tourist values, healing values and unfavorable elements of tourism.

W. Gaworecki [7] assumes, that tourist information should include not only information but also activity, which will promote the effective traffic of tourists.

According to the Polish Tourist Organization A. Gordon [8] tourist information should be understood referring to the three perspectives: as an ordered collection of data for the providers and consumers of tourist service; as system, which grasps the network of tourist centers and tourist information points; and as methodology for collecting, processing, checking the data and access to it.

The information includes the whole range of properties: it should be clear, available, fulfilling, adequate for making decisions, accurate, reliable and relevant. First of all, rational decision taking demands sufficient information. It is a necessary element during and after the trip, in the course of pre-travel preparation. Moreover, it is a need for increasing the psychological and mental development of tourists, and it grows significantly after satisfaction of other basic needs Kruczek Z., Walas B. [9].

The need for tourist information is expressed as the demand for paid and free of charge information, required for making decision about the place, time, type, conditions and outlining the program of the trip. This information is essential for the effective travelling plan.

Tourist information is on the list of non-economic resources, which influence the tourism development, at the same time limiting the phenomenon of spontaneous tourism. It is also important to take into account, that receiving information for individual tourists or groups is restricted by their perception. Not only the content, but also the form of providing information is very important, in order to make it reach the tourists.

There quantity of information on tourism is very important, and it is increasing as the new tourist destinations appear. Marketing and tourist information base, analysis and scientific researches in this area are significant for implementation of the policy in tourism area. Tourist information has become an indispensable product for the functioning of tourism, as an important part of the world's economy.

Thanks to application of innovative methods of management and organization, there is an opportunity of positive influence on tourism development in towns and regions, and enhancing the tourist flow. Due to some factors, the system of tourist information is not complete and stable. Frequent reorganizations of tourist management system and incompetence of some people, who take decisions on regional and local level are among those factors.

One of the tourism types, the development of which depends on the access to information, is sentimental cultural tourism. The appropriate development of tourism information strategy for this type of tourism will lead to the increasing the tourist flows.

Sentimental cultural tourism as sustainable tourism.

There was an idea in «Agenda for XXI century» (1992) that tourist industry has a great potential and could make a significant contribution to the sustainable development of all world's regions. This program of actions, which was approved during the UN conference on environment and development in Rio de Janeiro, explains sustainable development as a development, meeting the today's needs, without preventing the next generations from satisfying their needs. So in 1996, UNWTO gave the first definition of sustainable tourism as «tourism leading to managing all the areas in a way that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment, biodiversity and host communities». Moreover, the UNWTO Concept of Sustainable Development says, that sustainable tourism is also a process that «meets the needs of the present without compromising the ability of future generations of travelers to meet their own needs» Fennel [1]. The Concept of Sustainable Development is based on the ecological, social and economic principles, which are also the background of sustainable tourism.

According to Ralf Buckley [2], sustainable tourism should be based on the optimal using of nature resources, preserving its variety of cultural traditional values, and it should be also based on the multicultural understanding. From the economic point of view – to provide the long-term processes which benefit the society.

Basing on the researches of R. Harris and others[3], the sustainable tourism strictly depends on the ability of multiplying financial benefits, received from all the participants involved in the tourism sector, including the ability of supporting social, cultural and natural heritage. It means that the types of tourism should be developed taking into account various aspects. The above mentioned functions of sustainable development can be achieved with the help of such type of tourism as sentimental (nostalgic) tourism.

The concept of sentimental cultural tourism.

The sentimental (nostalgic) tourism is based on historical and cultural heritage. These travelling motives are achieved with the help of tourism, the aim of which is to visit the country of one's or ancestors' birth. This type of tourism is especially important for migrants – it lets the people, who were born outside the country, have a straight contact with it, and it makes a contribution to national consciousness, allows maintaining national traditions in a foreign country with the help of science and mother tongue, also maintaining religious and cultural traditions or sightseeing Panasiuk [5].

Sentimental (nostalgic) tourism becomes more and more popular also because of globalization, which is connected with simplification of border crossing procedures. People emigrate to work, study etc., and vice versa: it is easier for people, who have emigrated long time ago, to visit the country of their origin. The growth of life expectancy makes older people more active. They practice such type of tourism as well.

Analyzing the concept of «sentiment», one can say that sentimental tourism is connected with the places, which provoke traveller's sympathy. That could be places, connected with romantic literature (e.g. Eastern Borderlands for the Polish) or trips to the specific country because of passion to the language melody or lifestyle, which a certain nation has. The concept of «nostalgia» refers to the homesickness, when there is no opportunity to live in the motherland (according to Polish dictionary <http://sjp.pwn.pl>). It could be also a melancholy for the places connected with childhood, grandmother's village where one was spending holidays.

As it is possible to note, the motives of travelling for these notions are different, so I offer to understand sentimental cultural tourism as several types of tourism:

- nostalgic tourism – trips, connected with the return to places of specific emotional value and nostalgia. It is nostalgic ethnic tourism which refers to the homesickness to motherland or place of origin;
- sentimental tourism should be understood as trips, connected with interests and hobbies or sympathy to a specific place (for example, affection for places described in the romanticism literature, e.g. «Switez» by Mickiewicz).

The concept of ethnic identity search in tourism could be mentioned in case of visiting the places where important events for the specific ethnic group took place (e.g. famous battles, the places where well-known ancestors were born or had their activity, etc.).

Diaspora tourism can be understood as foreign trips to the country of origin; this type of tourism refers to the all travels connected with

coming to motherland in order to visit family and friends, but also on business, educational and other purposes.

Genealogical tourism – is a process of family roots search with the help of archives, libraries and museums, or a desire to trace the genealogical tree, search for places, connected with ancestors: their life and search for places of their burial.

Polish sentimental tourism on the territory of Western Ukraine.

The concept of «Eastern Borderlands» means the territory which belonged to the eastern part of the Polish Republic. A lot of famous Poles were born and worked there, for instance: Słowacki, Lem, Orzeszkowa, Zapolska, Schulz, Fredro and others. Kings and Polish military commanders were born there too: Żółkiewski, Koncepcowski, Sobieski and others, in addition to well-known professors of universities and technical high schools, painters and religious leaders.

The First and Second World Wars have led to Polish transmigrations from the territory of eastern border. As a result of Yalta agreement in 1945, according to the post-war borders, a reasonable part of eastern Poland was divided between Lithuania, Belarus and Ukraine, in other words, has become a part of Soviet Union.

According to the information from Public Opinion Research Server, each seventh Pole has a direct relative born in Eastern Borderlands, or was born himself on this territory Hermann [4]. This means that there are from 4,3 to 4,6 million people at the age 18+, who have the Eastern Borderland's genealogy. Lots of Poles feel homesickness and connection with the territory of today's Western Ukraine because of their origins and long-time history.

There are lots of cultural sites on the territory of Eastern Borderlands, also connected with other nations: Jewish, Armenians, Czechs, Germans, etc. That makes the place unique and has a perspective for the development of European cultural routes and touristic products.

Identity in sentimental cultural tourism.

Sentimental cultural tourism is connected with travelling which aims to search and visit the traditional cultural heritage. Such type of trips influence saving of cultural heritage: castles, residences, churches, monuments, etc. These elements are important for the identity of cultural landscape. It is essential for the sentimental tourists to see the cultural sites as they have heard about them from the ancestors on this territory and as they remember them from the childhood. Some of them come to Ukraine because of the interest to the literature and history. Episodes from the book «With Fire and Sword» took place in Zbaraj, and the whole Trilogy written by Henryk Sienkiewicz has a connection with lots of places, including famous Kamianets-Podilskyi. So it is very important

that the places, valuable for the Poles' minds, remain identical. Another example could be necropolises. The most famous one in Ukraine is Lychakiv Cemetery, where Cemetery of Lviv Eaglets is located. This cemetery was destroyed after the Second World War, but in 2005 it was re-opened by the presidents of Ukraine and Poland. Many well-known people of different nationalities were buried there.

There are also monuments created before the World War I in Ukraine. One of the most famous is a monument of Slowacki in Kremenets from the year 1909 and monument of Mickiewicz in Lviv. They join the cultural landscape of regions and witness the history, connected with those regions.

Each Polish tourist has different purposes of coming to Lviv but at least one of them refers to sentimental cultural tourism. As it was mentioned before, each seventh Pole has Eastern Borderland's origins but usually doesn't have an opportunity and enough information for searching the place connected with ancestors.

Tourist information sources for Polish tourists who came to the Western Ukraine.

The questionnaire was held in August 2016 in Lviv among the Polish tourists. 76 correctly filled questionnaires were received. This cannot be a representative sample but it allows analyzing the condition of incoming tourism and using the sources of tourist information among Polish tourists in the Western Ukraine.

A half of respondents are women. More than a half of respondents have higher education and have a job (figures 11.6-11.7). Most of the respondents are in the age group of 25-44 years old (31%) and 45-64 years old (29%). A reasonable amount of tourists are retired people, who are more than 64 years old (21%). A quite big percent of tourists who answered the questionnaire (42%) have Eastern Borderland's origins. The questions referred to the purpose of travel too. Most of Polish tourists (80%) in Lviv have come to see the places connected with the Polish history, and 19% have come in order to search and/or visit the places connected with their families. 9% of tourists were engaged with routes search and genealogy.

The main sources of tourist information for the said tourists was Internet (63% of respondents) and family or friends, who have already been to Western Ukraine (51%). There were several options to choose in the question about the tourist information sources. 38% of respondents marked that they have used the city guides and/or information from the tour guides.

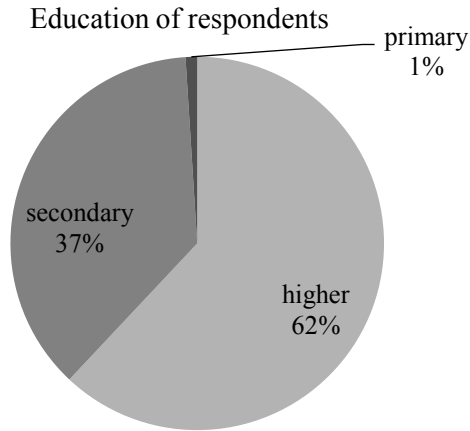


Figure 11.6. Education of respondents

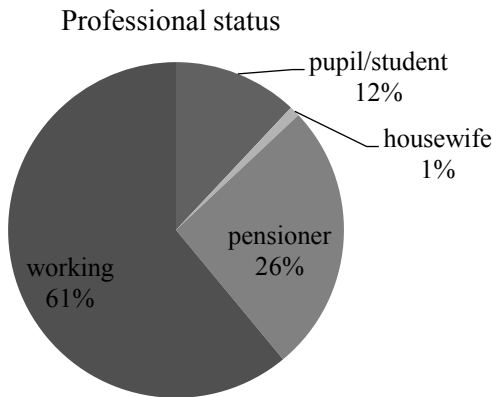


Figure 11.7. Professional status of respondents

Most of the Polish tourists have come to Ukraine in order to see the Polish heritage. The main source of tourist information for them was Internet and friends, who have been to Ukraine. So, existence of tourist information centers, which give information in Polish, is very important so that the information could be spread among friends and relatives, who would also like to visit Ukraine.

A certain part of tourists was searching for the places connected with their ancestors. At present, there is no genealogical database in the

Internet, which could help the Poles to find information about the places, connected with their family and the places of their burial in Ukraine. Comparing to the experience of Ireland, where this type of tourism is very popular, Ukraine also has an opportunity to enhance the tourist flow, but it would require an information base. Development of sentimental cultural tourism, including genealogical tourism, provokes a development of tourist flow in small towns and could engage the local population. It is worth learning from the western countries, where private and public sector collaborate for the tourism development. Therefore, a virtual tourist center of western Ukraine in Polish language should function. An important factor is creating a database about ancestors and giving an opportunity to explore the genealogical tree, also posting necessary information about places for visiting, connected with ancestors. In addition, information about touristic objects which are depicted in Polish literature could be interesting. For instance, mentioned in novels «Ogniem i mieczem», Krasinski's «Nie-boska komedia» and others. Also, information about places which are important for the national consciousness: places of vital battles, activity of famous Poles etc.

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11.5. Manage contacts with customers sports services

Kowalski S.

Sports market is a collection of actual or potential buyers of the product sports. In the consumer behavior in the market, it is appropriate to distinguish the accuracy of economic and psychological, as the first decide about the possibility of buying, while the second determines the willingness to buy.

The sports division of the market into smaller parts called segments took place in the seventies. Selecting for market segments should be the criteria of traceability, communication skills, measurability, capacity, availability and cost effectiveness. To segment was identifiable, it must be clearly fading into the market segment, created by the community of consumers with homogeneous, different from other groups' needs.

The main theses of the article are:

- fans are customers of the club and require proper sports product suited to their needs;
- the need fans are varied, depending on the segment to which they belong;
- you can manage groups of anti-social activities through a voluntary.

There is a need for the supporters of public education through positive actions of local character. Research conducted in 2016 focused on the elements and create a management model fans as sports services customers. This model was shown in the survey results.

Problems of marketing in sport in the context of the management of sports organizations demonstrated in the work of scientists such as, for example, Dudała J. [1, 3], Klisiński J. [9], Gelernicki J. [11] G. Schilling [2], Stephan CW Stephan WG [12] and Sznajder [13] M. Jarwis [5].

Sports market is a collection of actual or potential buyers of the product sports. In the consumer behavior in the market, it is appropriate to distinguish the accuracy of economic and psychological, as the first decide about the possibility of buying, while the second determines the willingness to buy.

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There is no average consumer sports. Its profile is changing the sport, place of residence, life situation and a number of other factors [9].

The union of sports organization with a specific segment should also be legible enough to objectively inform buyers about the products offered.

Football fans are a person who is interested in a public sport. Actively participates in events related to his favorite sports discipline. For fans include: audience shows sports halls, stadiums and other facilities, but also watching sport in the media or people mentioning about the discipline. The role of a faithful fan should be trying to support their team in both situations, both good and bad.

There are plenty of reasons why young people are fans. They are: tradition, devotion to the club colors and club history. Then there are friends, devoted to the same subject, you can rely on [4].

Among the fans can extract the most characteristic groups are «hooligans» (ie. Hoolsi) and «ultras» and «picnics».

Hooligans – the name borrowed from the name of Hooligan (or Hoolihan) Irish family of petty thieves who live in the late nineteenth and early twentieth century in the London borough of Southwark. Hooligans usually worked in small artistic groups, giving them a physical advantage over the individual passers-by, as well as a sense of power and impunity.

Another group is called. ultras. «Ultras» is a term of organized groups of supporters, mostly European and South American football teams. Is directly derived from the name of reactionary political groups existing after World War II, seeking to keep the colonies in Algeria.

These groups deal with during the matches fixtures which utilize elements such as flags on sticks, banners, streamers, confetti, balloons and cardboard forming choreography, as well as elements of pyrotechnics: flares, strobes, volcanoes, smoke bombs, various types of fires, etc.

Movement «Ultras» born in the 60s in Italy as a kind of response to the British move «Hooligans». Both groups supported their team, but in different forms. Unlike groups of hooligans, not who avoid the fight with fans of other teams, a group of ultras their attachment to the club manifested mainly through choral melodic songs and spectacular pyrotechnics, and lighting of match.

Among the supporters should clearly distinguish the so-called. picnics. «Picnic» is a term fan who comes to matches but not involved deeper in motion sports fans. «Picnics» is a group of opponents of the stadium brawls, standing in opposition to the hooligans. «Picnics» although the least active, are the probably the most numerous group of consumers stadium. Buy passes or tickets in the more expensive sectors, and the wealth of their portfolios allows for the issuance of more significant sums on sports memorabilia or consume during the show.

Analyzing the behavior of buyers of products of sport and divide them into different groups, it is worth paying attention to the motives of participation in sporting spectacles. Matthew D. Shank stands following recitals leaning fans to watch a sporting event:

- increase self-esteem;
- detachment from everyday life;
- the attractiveness of the sport event;
- emotions;
- economic value;
- aesthetic value;
- the need for affiliation;
- development of family and social ties [13].

Fan is a person fully identifies with his favourite team. When a team wins fans also feel the victors but the loses very often turn away from them, feeling touched failure occurred. In case of victory the athlete or club fans say: «We won!» and when met with failure then claim that: «They lost!».

Participation in the sporting arena allows you to take a break from everyday life. It has long been known also that the it will be more attractive the higher the trigger interest among fans.

Walter G. Stephan W. Stephan Cook and point to the fact that stereotypes can have a detrimental impact because shape our expectations about the behavior of other people. If these expectations are negative, we begin to expect undesirable behavior on the part of the representatives of the other group [12];

- most often spend their free time among themselves and rather reluctant to spend with people from «outside»;
- they have their own hierarchy of values. Their point of reference is a club who cheer. They appreciate fidelity colors of the club and a commitment to the city, from which it derives the club;
- have for tolerance of people who have come into conflict with the law;
- particularly hostile to the police; even the most hating a group of hooligans can unite and fight shoulder to shoulder with the police.

Hooligans take patterns of Western Europe, for example. Longer wear club insignia that were not recognized; arrange with each other to fights in secluded places, drawing inter alia on mobile phones and the Internet [10].

Despite the knowledge of model behavior antisocial groups is specified in the research ways of cooperation with these groups.

Fan behavior can be divided into those that take place during the sport event and those that take place outside of it. The main aims of the

article is to identify and analyze the behavior, knowledge of their causes and methods of eliminating anti-social behavior.

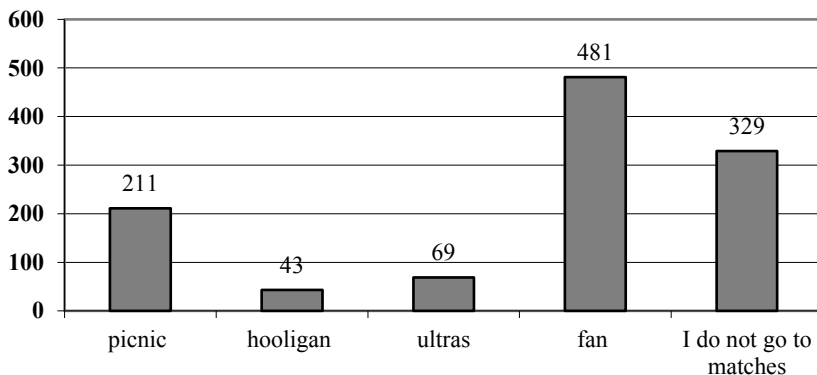


Figure 11.8. Declarations affiliation to specific groups of fans
[Source: Own study based on research]

Most sports fans in general is not at matches. These are passive recipients. In the following are «fans», then they define themselves as «picnics» and the least is the «hooligans» and «ultras».

A team sport often related to anti-social behavior. There is no one simple recipe for combating hooliganism hooligans. To limit the need for action in many areas, ranging from education of young people in the family and school, to ensure an adequate base (monitoring grandstand, numbered seats in the stadiums, etc.). They are also needed to allow the project to reach the most aggressive hooligans (cooperation of the clubs with the fans, the setting up of street workers). It should also put great emphasis on the training of staff responsible for safeguarding the sporting events [1].

In the first case about: unsportsmanlike doping, crossing borders right in the stadium, verbal aggression and physical. In the case of behavior outside the stadium are to let: destruction of property, acts of hooliganism in violation of immunity, incitement to hatred, racism and the like. In each of these areas, a sports club by managing contacts with the fans may be subject neutralizing these behaviors or canceling the effects of such behavior.

The greatest animosity in Poland include:

- animosities between of Warsaw (Legia) and Kraków (Wisła, Cracovia);
- animosities between Poznan (Lech) and Wrocław (Silesia);
- animosities between Poznan (Lech) and Szczecin (Pogoń);

- animosities between Upper Silesia (Ruch Chorzów, Górnik Zabrze, GKS Katowice, Polonia Bytom, GKS Tychy) and Dąbrowskie Region (Zagłębie Sosnowiec);
- animosities between Pomerania (Pogoń) and Tri-City (Arka Gdynia and Lechia Gdańsk);
- animosities between Kielce (Korona) and Radom (Radomiak).

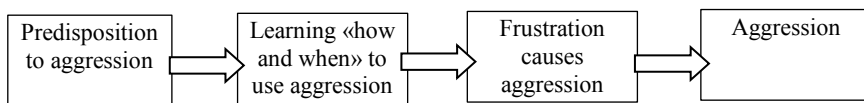


Figure 11.9. Hereditary predisposition to aggression and their way to aggression in sport [5]

The solution of this problem is to break the anonymity of hooligans by the numbering of seats in stadiums, registered ticket sales, the introduction of identifiers and a TV monitor stands. The crowd ceases to be the crowd. Each corresponds with a name for what he did. Toward this solution, Polish law is slowly moving [3].

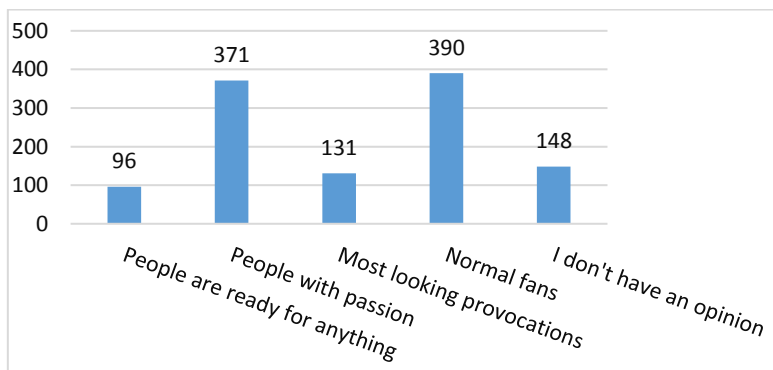


Figure 11.10. Evaluation of active fans as a collective [Source: Own study based on research]

The study active fans are referred to generally as «normal people» and «the people with passion», but there are also opinions that «they are looking for a provocation to the fighting» and «they are ready for anything». For a sports club that image is unfavorable, because it distracts other groups of supporters.

To mitigate the causes of aggression in the bud match should be clean, and the heads of the clubs should be fair. Fans have insight into

backstage competitions, they know a lot of people: athletes, activists and journalists, which often provide information. And with extreme aggression they react if they suspect that the game was sold [2].

An important role in eliminating anti-social phenomena play all the employees of the club, activists, players, coaching staff and the hired protection and announcers. Their aim is to avoid a situation sensitive, calming potential ringleaders and the response and information about the consequences of anti-social behavior (firing flares, incorrect inscriptions on the banners, curses sports fans and another prohibited behaviour).

Manage relationships with supporters should take a particular cell of a club or a person delegated to these contacts.

It is essential to plan your competition. Such that on the same day did not take place in the same area a few matches of the so-called. higher risk.

In the context of anti-social behavior outside the stadium fans they should know that anti-social behavior by the club will be stigmatized and condemned. In contacts with organizations of fans it must be clearly stated. An example is also eliminating the negative effects of marketing anti-social behavior by the club RKS Rakow Czestochowa. After painting at the newly renovated bunker slogans referring to the club he recalled the story of the 7th Infantry Division and the defense against the Nazis in September 1939, while disassociating themselves from the perpetrators devastation. Then the club repaired the damage and appealed to the hooligans, not to do in the future [6].

Such activities are aimed to educate supporters club in the spirit of respect for the history and common ownership. Far from a situation in which elevations will be free from inscriptions pseudosportowych, but it contacts the club with the fans, make the young, rebellious man committed to the idea of a combined sports will not destroy someone else's property and common. He will not do this if it is deprived of any support from other fans and the club. Awareness of what helps the club and what it disturbs allows you to eliminate or at least minimize anti-social behavior.

Similar socially positive effects of cooperation is with the fans and the club, which consists of participation in charitable activities. An example of such action is the action carried out by the Association of Supporters Lechia Gdańsk «Lion of the North» and a group of Ultras Lechia Gdańsk. As part of this action October 16, 2015 they have assembled them funds to support treatment Maxi, a small fan from the village of Chelm. During the collection managed to collect 4236.21 zł and 10.08 euro, 2 Norwegian Kroner, 2.80 pounds, 2 rubles, 1 Indian rupee, 0.75 dollar, 10 cents in Lithuania [8]. It should be emphasized that a large role in the communication process between the club and the fans play a modern

media, including social networks and Web sites. But it was the sound of this action will result in the media image enhancement. In many clubs managing to stop at the information on the Web.

At the local level, in the lower class divisions, is also visible reluctance of clubs to communicate with the fans involved, and it stems from ignorance about the negative effects (impact on attendance) and smaller funds for the operation of the club.

Conclusions and directions for further research.

Representatives of football clubs know that the fan could harm their teams. Clubs need to finance very costly infrastructure for the safety and monitoring of stadiums and cannot be held responsible for the shortcomings partners in ensuring safety. It is also associated with marketing costs and damages by image. Active supporters prefer deter anti-social behavior of other fans fearing for the safety of themselves and their loved ones.

According to many heads of the clubs the same restrictions and sanctions will not solve the problem, because fans need to talk and educate them. It fans the team must understand the drinks business, and we need to eliminate anti-social behavior in their environment.

An overview of how to influence the most aggressive fans proves that it is possible to interact club of those responsible for the most aggressive group. This cooperation should take place at the level of building respect for the club colors, awareness of the consequences of anti-social behaviour of its fans, the image of the club on the outside and education in respect for common property and that of others. In addition to activities damping aggression it is also important place for the use of energy involved fans to work in associations of fans, active participation in charity events and politics of the club's image.

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Розділ 12

Innovations in logistics as a response to business environment changing

12.1. Modality of commercial logistics implementation at trade enterprises

Honchar L.A.

Theoretical aspects of the efficiency of commercial logistics for retailers make it possible to conclude that the efficiency of commercial enterprises can be achieved through the introduction of commercial logistics that will facilitate clear communication of all the movement of goods from producer to final consumer at minimal cost. Thus, the importance of developing a mechanism introduction of commercial logistics rises.

There are many definitions of «mechanism», that clarify it, specify it and also complement it. They can be represented as a system of formal and informal methods, forms, levers, control functions of economic relations.

The term «mechanism» as a category is borrowed from technical vocabulary and has been used in the economic literature for a long time, but it always requires clarification and justification. According to the fundamental principle of this concept, the mechanism is seen as a system of bodies designed to convert the movement of one or more solids into the right movement of other solids. Naturally, the input element that receives boost from the engine, and the output, which is useful result of the mechanism, is exuded [1 p. 133]. Other scientists say that the main task of the designer is to arrange the elements and to build their cooperation in order to achieve the «exit» essential values of all essential parameters with minimal energy [2, p. 144].

By definition A. Kuhlman, the primary phenomenon, final phenomenon, and the whole process that occurs between them, are the elements of the economic mechanism [3, p. 13].

In the analysis of economic and social processes, M.S. Doronina proves that any company, on the one hand, always has a set of «input» conditions that cause the formation of any mechanism, but on the other hand, there is a set of «output» ones – economic and social processes that generate the appropriate mechanism [4, p. 130]. Complex organized

system that processes the developed input conditions into the desirable processes is the generalizing mechanism.

O.A. Gavryshkiv provides organizational and economic mechanism of system of ensuring competitiveness for a small enterprise according to block diagrams (fig. 12.1) and emphasizes that its development is justified by using such approach into practice [5, p. 213-214].

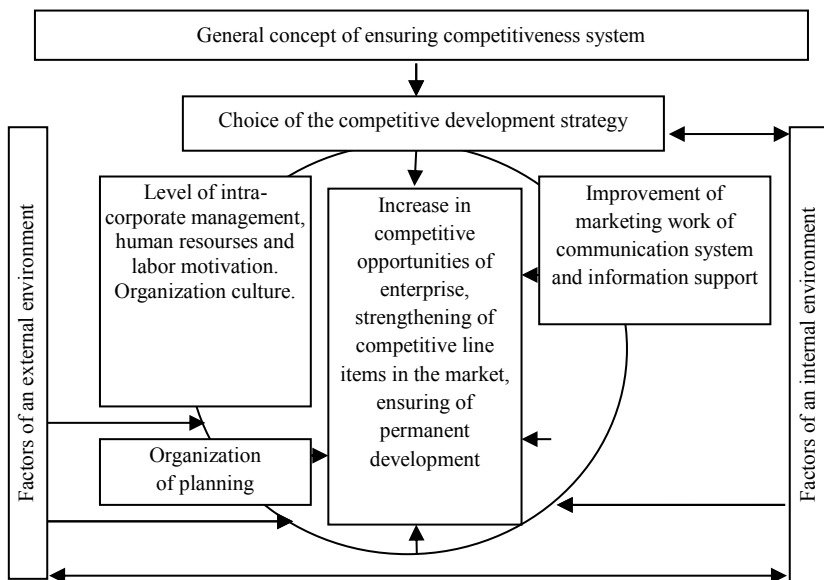


Figure 12.1. Integrated flowchart of organizational and economic mechanism

Each individual target block trust must enter the enterprise management system. From every direction, recorded in a separate block, specific goals and steps to achieve them are defined, resources are allocated, control system is established.

This approach should be agreed with, it should be adapted to determination of the mechanism of the implementation of commercial logistics of retail enterprises, according to the fact that system of its elements will be appointed to convert incoming resource flows in the initial trade ones.

We should agree with other author [6, p. 203] that the main problem that occurs during the creation and setup of socio-economic mechanism is to find a rational combination of mechanical formal rules and proce-

dures of organizational technology as well as social and economic incentives that would cause the maximum interest and responsibility of all categories of workers in ensuring a high level of efficiency and quality of achievement of goals of the production system.

Thus, it is possible to claim that the basis of any mechanism is a process that can be both subjective (influence of the subject on object) and objective (influence of economic laws, without the intervention of the subject) nature and consists of a set of actions toward achieving the desired result.

If it is about a mechanism for ensuring the efficiency of the retail enterprise, in general, and trade logistics, in particular, delivery with minimal costs should be arranged by management.

So the mechanism of implementation of commercial logistics, as noted in our previous studies [7], is advisable to consider from the following items:

- improvement of organizational and structural provision of commercial logistics;
- interaction of subsystems of commercial logistics.

In the first case it is advisable to propose an organizational management structure which would ensure commercial efficiency of logistics retailers.

In the development of management theory process, several types of organizational structures are defined, the main of which is linear-functional and divisional. To ensure flexibility of managing of large commercial enterprises, the basic organizational structures are supplemented with matrix and project- (process-) oriented ones.

Linear-functional organizational structure provides the vertical division of labor, i.e. grouping staff by functional areas where control is exercised by vertical hierarchy from senior management to staff grassroots level. The functions of planning, monitoring, recording and analysis focused on the upper echelons of management.

The advantages of linear-functional organizational structures include: the stimulation of professional specialization of staff of logistics management, clear separation of functional responsibilities of staff, lack of duplication of logistics functions by other divisions of the enterprise, improvement of the efficiency of logistics infrastructure facilities and material and financial resources during performance of certain functions of logistics, improvement of coordination within individual logistics functions, creation of staff career and professional development.

However, the linear-functional organizational structure has the following disadvantages: it stimulates functional isolation, increases the

number of cross-functional conflicts, reduces the effectiveness of communication by the increased number of interactions between individual departments, is not conducive to the implementation of integrated logistics technologies, it complicates the planning, analysis and control of complex logistics indicators, it also generates double management – within the enterprise and inside logistics services.

Divisional organizational structure is an association of independent linear-functional structures that serve a certain territory or implement product specialization, and management is performed from a central office.

Advantages of divisional structures are: mobile adaptation to environmental change, focus on operational decision-making and development of new markets and technologies, successful functioning with non-price competition, rapid solutions to complex cross-functional issues and diversification within the enterprise. A significant drawback of divisional structure is the increase in quantity of managerial staff and, consequently, duplication of logistics administration functions.

Based on this, we can draw attention to imperfections of linear-functional and divisional structures of logistics management for the integration of the logistics process and ensuring of cross-functional coordination.

Therefore, some commercial enterprises have begun to implement matrix organizational structures of logistics management. The use of such structures is connected with the need to adapt to changes in the market, processing of large amounts of information and limit in financial and human resources.

Matrix organizational management structure is a combination of linear-functional and project structures that provides dual subordination of local performers – executives and managers of the definite project.

The advantages of a matrix organizational structure include: strengthening of cross-functional and inter-organizational logistics coordination, centralized allocation of resources in logistics projects, maintenance of the advantages of linear-functional organizational structure, increased structure of adaptation to external changes, intensification of motivation logistics of staff and responsibility for the outcomes of activities, intensification of level of logistics integration process at commercial enterprises.

The disadvantages of this structure are: the possibility of conflict between linear-functional departments and project logistics structures, complication of adoption procedures of management decisions in logistics and distribution of authorities between project managers and heads of departments, violation of the principle of command unity.

The development of integrated logistics concept promotes the emergence of new types of organizational structures, focused on the implementation of logistics processes and specific logistics projects.

The problems, connected with the introduction of new logistics technologies, limited resources, the need for real-time logistics management, cross-functional tasks and inter-organizational coordination, more effective use of highly skilled logistics staff, needs transition to structures of horizontal governance, based on project or process approach.

The peculiarity of the project or process-oriented organizational structures is their temporary use for a particular complex task. For implementation of the project-oriented organizational structure, the project team, headed by project manager, is created. After completion of the project, staff returns to their functional units and temporary staff is dismissed.

Implementation of the project-oriented organizational structure leads to compaction of the structure and horizontal management style logistics. This expands the authorities of logistics management personnel, that enables the middle management unit of logistics services to solve the problem. This structure provides direct subordination of all project logistics management, promotes flexibility of project management, reduces the number of communications, improves logistics coordination.

The disadvantages of the project-oriented organizational structure are: the possibility of duplication of functions and reduction of project resource efficiency, inconsistent implementation of general principles of business operation, lack of motivation of temporary staff and negative competition between teams of several logistics projects running simultaneously.

Thus, during application of project-oriented organizational structures, which provides the transition into horizontal structure of logistics, such rules must be followed:

- hold arrangements for the implementation of the logistics process, not for performance of individual logistics functions;
- use the minimum quantity of division to perform the whole logistics process of the company;
- create division that are the main components of logistics services and logistics business in general;
- encourage efficient work of division financially, to encourage improvement in general, not the individual know-hows;
- maximize contacts with suppliers and customers;
- inform and train all employees without restricting them in information.

Proceeding from written above, for retailers the project-oriented organizational structure is considered to be appropriate, as it provides a transparent management and efficiency in the current economic conditions that are influenced by deep structural changes and imbalances between production and consumption.

To ensure the efficiency of business logistics in many trade corporations, responsibility for various activities in the commercial logistics sphere is assigned to different departments, namely the Department of Marketing, procurement department, sales department etc. that leads to attempt of each department to optimize its performance, even though that functions of transportation, inventory management, warehousing, formation of purchase orders are interrelated. Interdependence has different effects on the efficiency of the company. Thus, the decline in inventories positively affects the on value of costs related to storage. However, it may decrease the amount of goods due to the absence of certain headings or their required quantity. In this situation, you there should be an additional order, unscheduled deliveries, which will eventually lead to increased costs. Therefore, management decisions of various structural departments should be well-coordinated.

Therefore, it is possible to claim that the conceptual problem of logistics is to optimize business flow processes in commercial enterprises, which need to be solved through structural designing of logistics chains that should provide: maximum simplicity and clarity of passing processes; introduction of modern technology; structuring of a workplace system for each employee; clear definition of competences and responsibilities of each structure.

In this sense, for the tasks in retail establishments, Logistics departments at the retails should be created.

Logistics activities aimed at integrating of basic logistics processes and cross-functional coordination, indeed, for support of interrelation with manufacturers (suppliers), with all functional departments of retailers to solve complex, conflict problems at different levels of management.

The main functions of logistics are considered to be:

- monitoring of the external environment and internal operation of commercial enterprise;
- simulation of logistics processes and chains;
- formation of logistics flows;
- justification of criteria of assessing of management effectiveness of flow processes;
- monitoring for the implementation of logistics processes at the enterprise.

Creation of logistics department on purpose of accurate communication of all processes of goods movement from manufacturer to final user with minimal losses enables to ensure the effective functioning of logistics system.

Integration of logistics department with other functional departments allows to ensure the most complete account of temporal and spatial factors in the optimization of commodity, financial and information management to achieve strategic and tactical objectives of commercial enterprise in the market of goods and services.

Another component of the mechanism of implementation of commercial logistics at retail enterprises is associated with two major complex subsystems – functional subsystem and providing one.

Separation of functional subsystems is connected with functional areas of logistics and motivated by the need to improve the management level of the logistics process in the components of business logistics (inventory, purchasing, warehousing, transportation, maintenance and services). The object of management of functional subsystems are the main and related flows. In retail trade, trade flows are considered to be among the most important flows, and informational, financial, service flows are among the collateral ones.

Of course, it is possible to combine product flow and commodity stocks, being based on the fact that the material flow at the trade enterprise are goods that are in a state of motion and to which is the logistic activities (loading, unloading, transportation, sorting, etc.) are referred to, but, if the product is not in a state of motion, it moves to the reserve.

However, it would be incorrect because, according to their purpose, inventories should provide a normal and continuous process of care, and therefore it is a separate substance.

Goods flow is more capacious concept, because it shows the process of moving goods from the subject that offers them to retailers, to the final consumer.

So in retail trade, in system of commercial logistics, categories of goods flow and commodity stocks are considered separately.

In relation to the logistic system, goods flows are internal and external, and input and output ones.

Internal goods flow is created by the implementation of logistics operations with the goods directly in the logistics system.

External flow moves towards external due to the trade enterprise environment. Goods that are relevant to the enterprise, refer to the category of external flows.

Input goods flow enters the logistics system from the environment, and the output – on the contrary, from the logistics system into the environment.

The main parameters of goods flows are: nomenclature, range and quality of goods; overall characteristics; weight characteristics; physical and chemical characteristics of the goods; characteristics of the packaging; conditions of the purchase and sale agreement; conditions of transportation and insurance; cost characteristics.

One of the main, related to trade flows, are informational flows that can be internal and external, horizontal and vertical, input and output towards logistics system.

Informational flow can outpace the goods one, it can go with it or follow it, being directed towards trade flow or towards the opposite one. The indicators that characterize the informational flow are the sources of its origin, the direction of the flow, speed of its transmission and reception of information, the intensity of the flow.

Financial flows are the directed movement of financial resources in logistics systems and between them to ensure the promotion of goods flow. In relation to the logistic system, external flows (outside the existing logistics system, can be input and output) and internal flows (located in the logistics system and may vary depending on the performance of logistics operations) are distinguished.

Service flows are a combination of different types of activities, processes and operations of functional subsystems of trade enterprise that provide communication «producer-consumer», meeting needs both external and internal customers.

If the object of management of the functional subsystems are the main and related flows, the object is to minimize costs at the management of these flows.

Ensuring minimization of costs while managing goods flow and those that refer to them is possible only in the optimization of purchases process, storage and transportation of goods, because they are the basis of logistics costs and occupy 25% or more of total costs.

Along with functional subsystems, it is accepted to allocate providing ones, including members of the logistics process and methodological support, informational support, legal support and staff providing that are part (unit) of mechanism of commercial logistics implementation.

The interaction of functional and providing subsystems that are in the same market environment (figure 12.2), defines the ways of implementation of commercial logistics at trade enterprises and determines its effectiveness.

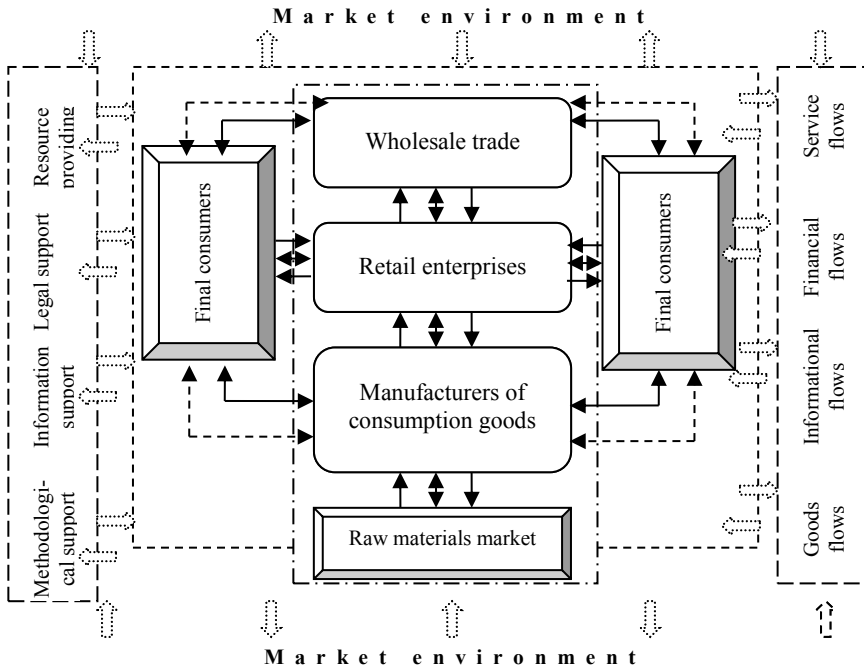


Figure 12.2. Interaction of subsystems of mechanism of implementation of commercial logistics at retail enterprises

To create an effective system, direct interaction of subsystems providing its management, where each participant performs its function, and mediated goes through information, trade, financial, service flows (in the diagram – shown by dashed lines), is a necessary condition.

This approach is explained by the fact that the production of goods and services and ensuring their availability to consumers requires a close relationship both with consumers and major suppliers, intermediaries, that are included in the delivery channel (logistics system) of enterprise. Therefore, block of mechanism of implementation of commercial logistics, shown at fig.2, shows how providing subsystems as subject of commercial logistics (enterprises of retail trade, enterprises of wholesale trade, producers of consumer goods, raw materials market, final consumers) and functional subsystems as objects of trade logistics (trade, financial, information, service flows) are interconnected.

Methodical support is a methodical positions that constitute the theoretical basis of calculations of indicators and definition of procedures of

specific functional subsystem of commercial logistics. Information support provides presence of internal and external information, sufficient for holding diagnosis and evaluation of state enterprises. Legal support of commercial enterprises includes legislative and regulatory acts governing the creation and use of the potential of the enterprise. Staffing with energetic and skilled professionals is an important mean of solving majority of problems of organisation of modern trade process. In this regard, this element was highlighted as a factor of business success.

Improvement of contained unit of the mechanism of implementation of commercial logistics at enterprises of retail is conducted in terms of the interrelation between the functional and providing subsystems, because the quality of their relationship is paramount, so the problem should be solved in two ways: the optimal organization inside the subsystem and the establishment of adequate interconnection between individual subsystems.

This approach will provide adaption of the enterprise to changes in the market environment, quality of control, reliability, cooperation and solution of problems for effective mechanism for implementation of commercial logistics at enterprises of retail, and, consequently, its effectiveness.

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12.2. Innovations in the logistical system of an enterprise-entity engaged in foreign economic activities

Pitel N.Ya., Alioshkina L.P.

The modern development of the Ukrainian economy caused by the negative impact of the global financial and economic crisis requires the development and adoption of effective radical solutions. These solutions should be aimed at stabilizing economic processes in industrial and social spheres and improving the competitiveness of the national economy as a whole, its leading industries and individual business entities, in particular. The basis of these processes can be a change from distressed engineering capability of domestic enterprises to new innovative technologies based on a variety of advanced progressive ideas.

In the recent past, innovation was seen as a result of scientific and technical progress but under modern conditions innovations are considered to be one of the most important value drivers of scientific, financial, organizational and production sectors. Indeed, the combination of these

factors guarantees the desired economic effect. Moreover, the experience of many countries shows that enhancing innovation promotes the trend pickup, optimizes production structure, improves living standards in the country and, most importantly, identifies targets for further development.

One of effective ways of the economic development of a company and reaching the success both in the markets of Ukraine and abroad is the implementation and use of innovations in the logistical system. They are the key to success in improving the quality and competitiveness of products and entering new performance levels. Using innovations in logistics allows implementing enabling technologies of product distribution, high production technologies, modern technical and transport facilities, equipment, advanced management decisions on the development of strategy and tactics of the logistical activity of the enterprise.

Fundamentals of the logistical system management of the enterprise are covered in the works of Yeletenko O.V. [4], Tkachuk O.M. [12] and Alkem V.G. [1]. Khvyshchun N.V. [13] and Larina R.R. [9] studied the impact of logistics on the effectiveness of operation of the business. Chukhrai N.I. [14], Afanasenko I.D. and Borisova V.V. [2], Boldyreva L.M. [3] and many others researched issues of an innovative approach to logistics. However, despite the significant amount of studies, questions remain still unsolved related to innovations in the logistical system of an enterprise-entity engaged in foreign economic activities.

This problem has led to the formulation of the research objective, namely: justification for the innovation in the logistical system of an enterprise-entity engaged in foreign economic activities.

In the context of globalization, computerization and informatization of the global economy one of the main conditions for the preservation of competitive positions by the Ukrainian companies in the market is the efficient use of its resources (material, financial, labor, energy, information, intellectual and time resources) by business entities. Given this the domestic enterprises need structural adjustment and technical re-tooling. This can be achieved as a result of the development of the innovative management system of material, financial and cocurrent flows based on the logistical concept. The main difference of this logistical approach from the usual management system is a change in the subject to management. If usually separate material objects were considered the subject to management, the logistical flow becomes the subject to management after using the logistical approach.

Globalization processes and activation of foreign economic activities of the Ukrainian enterprises contribute the crucial role and place of the

logistical system in providing long-term profitability of foreign operations. Logistics has a powerful strategic resource and thus can contribute to the stabilization and development of the economy both the whole country and individual regions and enterprises. State of its development and efficiency depend on the level and pace of upgrading and they are determinants of the economic growth. Improving the logistical system management with an innovative approach leads to increased efficiency of functioning of the material production as a whole.

Analyzing from the business perspective, logistics ensures the implementation of foreign economic strategy of the enterprise with the most suitable costs of labor, financial, material, information, energy and other resources. Considering the perspective of logistics, there is the optimization of options of main and cocurrent resource flows of a particular enterprise-entity engaged in foreign economic activities operating as a separate system (or a part of a particular logistical system which is considered a single entity). The development of the modern enterprise is to introduce new ideas, technologies, production methods, innovative products and services. Therefore, the optimization of the efficiency of its individual business units also requires constant updating, reorganization, restructuring, finding new ways of doing business and management. In activities of domestic enterprises the logistical activity occupies a special place because it is possible to provide competitive advantages by optimizing costs and time of customer service.

Forming, developing and improving logistical activities at the level of the enterprise-entity engaged in foreign economic activities it is important to examine in depth all the possible factors of influence and individualization of innovations. Science is developing and there are new inventions in engineering and technologies that have been successfully used in logistics. This minimizes production costs, increases promoting and efficiency of the supply chain of an enterprise. In logistics, there is always a potential conflict: time or money, while through the innovative approach it is possible to achieve reductions of both expenditures (costs) and time and also to produce added value for the customer. Given the fact that today the world is experiencing crisis processes, innovations in activities of the enterprise-subject of international business operations will strengthen competitive positions for potentially more stable and stronger enterprises than ever before and remove weaker companies from the market. As a result, this has a positive impact on the quality of products and services beneficial to consumers [10, p. 105].

With the establishment of an innovative model of Ukraine's economic development, incentives and effective provision of innovative processes at the enterprise level are of particular importance. Indeed, development

and implementation of innovations are prerequisites for competitiveness and economic stability of the enterprise and improve financial indicators. This can be achieved primarily providing effective marketing support and suitability of innovations for the optimization of logistical operations, in particular, such as delivery, production, storage, packaging, loading and unloading, transportation, and so on. The factors that indicate an objective need to integrate the principles of logistics and innovations are [7, p. 72]:

- integration and globalization of world markets in capital, goods and services, on the basis of which there are integration of business processes and management system of decision-making (focus on the use of synergistic relations in micro and macro scales);
- increasing competition in domestic and foreign markets, so it is necessary to possess significant competitive advantages;
- increase in market differentiation (differentiation of needs in consumer preferences of customers, individualization of market segments, diversification of products, etc.);
- constant development of technologies, especially in the field of information, promotion of products and their handling;
- growth of the entrepreneurial and innovative activity in business and operations and market activity of modern enterprises;
- reduction of product life cycles;
- increasing capacity of enterprises through the use of new technologies;
- minimization of costs (material, financial, labor costs, and time consumption) while maximizing profits.

Today, the market requires new approaches to meet the growing needs of consumers and the efficient use of labor, material, financial and time resources. Through innovations the enterprise creates competitive advantages and is able to expand its market to fill the vacant niche.

The concept of innovation includes the process of development, implementation and operation of the productive-economic, social and organizational capacity that is the basis of the innovation. There are the following types of innovations:

- food innovations provide creating new products or services focused on demand which is formed;
- technological innovations are the improvement of methods of production of existing goods and services;
- market innovations are the development of new working methods on the market;
- organizational innovations are based on improving organizational governance structures.

At the national level prerequisites for innovative development are formations of the modern innovation infrastructure [5]: development of the scientific basis for innovations, growth in demand for innovations and scientific and technological activities, networking between research institutions and manufacturing enterprises to speed up the commercialization of scientific achievements.

Functioning and efficient logistical system development of the enterprise-entity engaged in foreign economic activities related to the use of innovations of various kinds, with changes in the organizational structure, using highly efficient technologies of merchandising, advanced engineering and transport facilities, embodiment of modern management solutions to develop strategy and tactics of logistical activities. Innovations as a key component of the successful development of logistics must be implemented comprehensively in such major sectors of the logistical system of the enterprise-entity engaged in foreign economic activities (fig. 12.3).

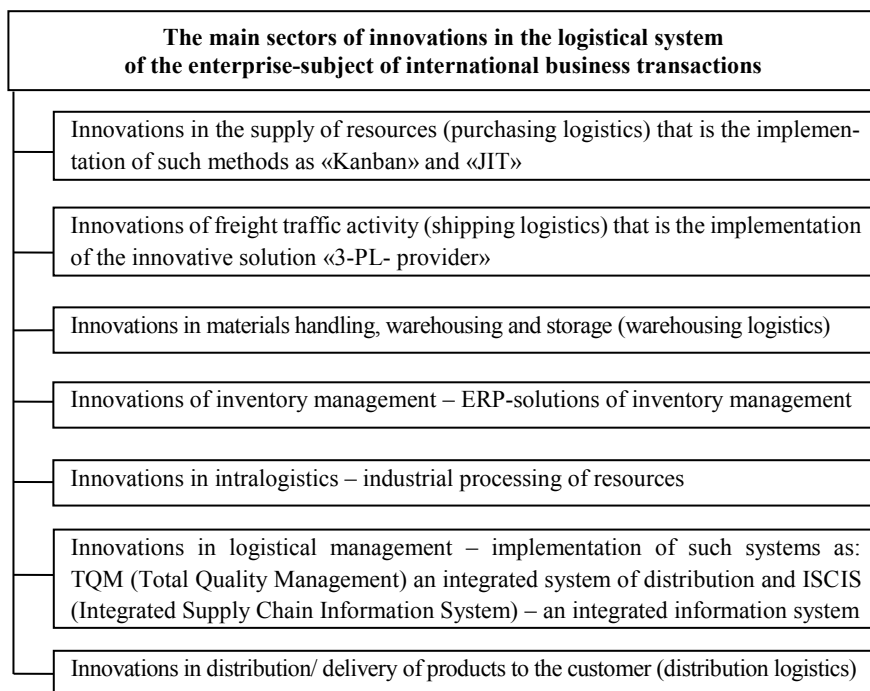


Figure 12.3. The main sectors of innovations in the logistic system of the enterprise-entity engaged in foreign economic activities (author’s interpretation under [3, 7, p. 73])

The logistic system is a complex subject which concert and coordinates the activities of many resource flows and finished products. Thus, it provides a coordinated work of all subsystems of the enterprise increasing productivity and minimizing costs. The effective implementation of innovations on each of the individual parts of the logistic system will enable the company to achieve synergy, optimize costs and efficiently use all kinds of resources. The transition of the economy to the innovative development strategy and its implementation at the level of every enterprise needs to develop appropriate mechanisms and takes place in several stages [8, p. 130]: determining key parameters of evaluation by which distribution of enterprises will be implemented, defining characteristic features of a particular group to establish the current level of reliability, substantiation of tools of a flexible system of response to changes, recommendations on management to improve reliability providing active use of innovations in economic and commercial activities of the enterprise and its logistical system. The global impetus to innovation processes is the evolution of the international trade and active use of e-business models. Under these conditions it is important to maintain a dynamic balanced connection between resource planning, customer relationship management, production planning and corresponding supply chain systems of partner supplies for enterprises-entities of the international business. A significant complication of the global supply chain which involves all enterprises engaged in export-import operations forces companies monitor closely and seek solutions to such problems as ensuring the reliability of logistical services; adjustment of logistics costs; tracking information on flow of goods and order fulfillment in real time. As a result, the focus on innovation of the logistic system for the enterprise is no less important than the focus on innovation of the production of goods. So, organizing activities of the company, it is necessary to consider all aspects of interaction: procurement, production and sales. Indeed, «the business architecture of the enterprise formed to focus on the support of integrated logistics is a prerequisite for effective changes in tactics, strategy and sometimes in the organization's mission» [6].

Studying the issue on the implementation of innovations in the development of the logistic system, we cannot avoid new (at that time in developed countries and today for many Ukrainian companies) logistic technologies (innovations) which were widely used by foreign companies.

Thus, innovations in the logistic system include the implementation of the world famous MRP system (MRP resource) that is «a computerized method focused on the product which aims to minimize stocks and stick to delivery schedule». An improved version of this system (MRP II) has a wider application than MRP one because it can be used not only for

planning material resources but also for labor, financial resources and production facilities. MRP system can be implemented prospectively when the demand for the output material resources is highly dependent on consumer demand for final products. MRP I system can be used with a wide range of material resources (multipurpose outbound material flows).

Another equally important innovation that can be implemented in the logistic system of the company (after MRP and MRP II) is ERP system (Enterprise Resource Planning). It is a business management system that is supported by multi-module application software and integrates all departments of separate functional areas of the company. ERP is a term coined by Gartner Group Research to describe control systems. Advantages of ERP in the logistic system of the enterprise-entity of international business operations are: reducing cost price by improving productivity; reducing time of introduction of goods and services on the international market; reducing the number of production operations; reducing depot stocks; improving the quality of products; increasing awareness of leadership; improving the quality of forecasting and planning; formalization of business processes and integration of all departments [3].

In recent years, management systems of warehousing and shipping are also considered innovative in logistics. Therefore, we consider application of DRP important (Distribution Requirements Planning). It is the control over supplies and manual supervision techniques in which MRP principles are applied for distribution of stocks.

One of important and promising innovations nowadays is the introduction of administrative innovations in the development of the logistic system of the enterprise. These innovations include outsourcing, benchmarking, vendor associations, cooperatives of shippers and others. Outsourcing is a strategic use of external resources to solve problems that are traditionally given by internal resources of the company. It is a management strategy according to which the implementation of non-key functions relies on external (third) party which is a specialized professional service provider. Benchmarking involves the standard of efficiency, quality or advantage in its basis in respect of which all kinds of business are evaluated, measured and positioned. Thus, in particular, logistic activities are considered relative to best competitors in the branch and best companies in other branches.

Also, innovations are possible in the distribution and supply of products to customers. To reduce the time between order receiving and shipment of products allows consumers to use computer equipment.

Nowadays, efficient consumer response systems are widely used among logistic technologies in the distribution.

At present, with the implementation and procurement of goods, respectively, each manager must decide on the introduction of production-prospective innovations in procurement activities in the logistic system concerning changes in the list of vendors, establishment of own new production units-sources of goods, increasing their capacity and production volumes leading to changes in the organizational structure of the logistic system.

A special role in the development of enterprises engaged in international business belongs to infrastructural innovations, particularly related to the creation of a variety of warehouse facilities – logistic centers. Indeed, technical and technological innovations at these facilities will be connected with the reconstruction of buildings and redevelopment of warehouses, their equipping with appropriate warehouse and handling equipment, modern management tools, creating micro logistic system of warehousing logistics. Also, an infrastructural innovation within logistics can be considered further network deployment of trading objects of the retail sector – shops, supermarkets – in retail chain stores.

An excellent innovative solution in the transformational change of the logistic system can be the development of a variety of organizational, technical and technological means and measures for the support of an e-shop. Its organization will lead to the need for trade innovations, in particular, inclusion of relevant communication and software in the logistics for processing customer orders in «online» and their fulfillment by organizing the delivery of goods purchased by customers [11].

An innovation associated with the establishment of the logistic information system of inventory management, product supply and distribution within the overall information system of the entity is important in the logistic system of the enterprise. Thus, the main ideology of such innovations in logistics will be the desire to ensure efficient, strategic, tactical and operational process management of movement of material, information, financial and other flows in the process of commodity circulation both in the institutional framework of the enterprise and beyond them. In the future it will lead to the sustainable development.

An innovative approach to the management of the logistic system in the enterprise is an effective tool that can provide increasing efficiency and reliability, balance changing demand, high cost of production and other problems caused by the influence of internal and external environment. Due to the mobilization of all resources and rationalizing their use there is a harmonization of all flows at the enterprise level and directly in terms of the logistic system. Implementation of

innovations at all levels of the logistic system is aimed at finding problems, their solving, and, consequently, increasing production, investment and export potential by searching for hidden reserves and unused opportunities [8, p. 134].

Conclusions. Logistic activities of the enterprise in the context of globalization require constant development and improvement. After all, innovations in technical equipment, technologies, information security and management of supply, production and sales significantly simplify the production cycle and increase the efficiency of production and economic and commercial activities. Therefore, the main sectors of the logistic system should be focused on the integrated implementation of innovations and their integration into the overall development strategy. It will achieve synergy, optimize costs and efficiently use all kinds of resources. Under conditions of constant internal and external changes the implementation of innovations will improve logistics and increase the efficiency and intensity of use of resources to facilitate the accumulation of competitive strengths. Indeed, innovations reinforce positions of stable and sustainable businesses and eliminate weak firms from the market. It positively affects the quality of goods and services and therefore it is profitable for consumers.

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12.3. Logistics of flow processes

Harmider L.D.

Adaptation of Ukrainian economy to a market conditions of managing has exacerbated the problems of efficiency of management solutions even further, as it changed the order and content of internal and external communications of the company itself. A significant qualitative change in terms of production and economic, organizational, managerial, financial, economic, social - political activity has been made. Considering that companies are deeply responsible for the strategy, the tactics of the development and survival, validity of effective methods of implementation of decisions takes particular significance. The basis of firmness of the enterprises in market conditions is their active and flexible response to change of external actions and internal factors, constant introduction of technical and technological innovations in the production process. In terms of long-payments crisis, the lack of elaborate fiscal and investment policy, enterprises are forced to find the reserves in order to increase organizational efficiency within the system. The functioning of enterprise, in meaning of separate microbiological systems, is based on the relationship of material, financial, informational and labor flows, and is represented as the best form of organizational system. Position of authors in this issue is that the possible increase of efficiency of management decisions lies in the synthesis of modern achievements of management, based on coordination of decisions and principles, methods and approaches, proposed by logistics.

The issues of logistic management are inextricably linked with the objects and purposes of the study, since the alleged analysis of the specifics of logistic flows appears from the need of incensement of the allocation efficiency of economic resources that operate in the socio-economic systems. The functional range of general management theory, formed by Ukrainian and foreign authors such as A. Hadjinsky [1] A. Novikov [2], V. Sergeev [3] A. Harnov [4] A. Butryn [4] A. Fomenko [12] and others lies in the heart of this distribution. The integration of general management theory, providing with the most efficient resources allocation through the implementation of complex functional management enables to achieve organizational goals, with the principles of logistics and specifics of logistic approach, ensures to achieve organizational goals much better. The implementation of this integration is carried out in the analysis of flow systems and subsequent synthesis, which is provided with their interrelation and interchangeability.

Highly appreciating the achievements of the scientists in the study of logistic approach to management, it is necessary to note the following: the guidelines for implementing a systematic approach to resource management methodology, based on logistics methodology are not considered sufficiently; fundamental works, devoted to use of logistic approach in the management of resources, recreated in Ukrainian conditions, etc. are absent. The urgency of these problems, their insufficient study led to the choice of theme and formulation of research objective.

Summary of researchers' works in areas, related to the subject of our research, shows that there is an objective need in use of systematic approach to the management of flow processes and the formation of an appropriate methodology. This problem is rather narrowly seen in studies in the field of logistics, which does not allow to realize the possibilities, offered by the union of these areas, based on integrated logistics paradigm, in full measure. Recently, logistic approach, based on streams or on stream processes, is used in most scientific studies.

As analysis of scientific literature shows, flows (physical or economic), are considered to be an object of studying of logistics rather than processes in the majority of works [1-3]. It is pointed that any activity where a set of processes or events has an alternate sequence in space and in time, can be the object of the logistics in studies of A.P. Harnova and N.S. Kireyev [4], therefore, it is possible to use different options for organizing and managing of such activity on specific criteria. It can refer to different flow processes, including material, financial, transport, informational and labor. As it is noted in the work of A.G. Butryna [5], «despite the rapid development of the theory and practice of logistics, the category of» flow «remains poorly studied». The most common definition is: «The flow is a collection of objects that are perceived as the solid one, which exists as a process at a certain time interval and is measured in absolute terms for a certain period» [6- 7].

The appearance in the logistics of such an object as labor flows is a merit of such scholars as S. Uvarov, E. Mathe, D. Tyske. According to researchers, labor flow is an element of movement of labor, which has a number of parameters, characteristics that must be defined with the purpose of further research of labor flows.

From this perspective, human resources development is represented by us as a socio-economic process-flow in the form of the movement of resources-results, types of activities-consumption due to stages of the development cycle (figure 12.4).

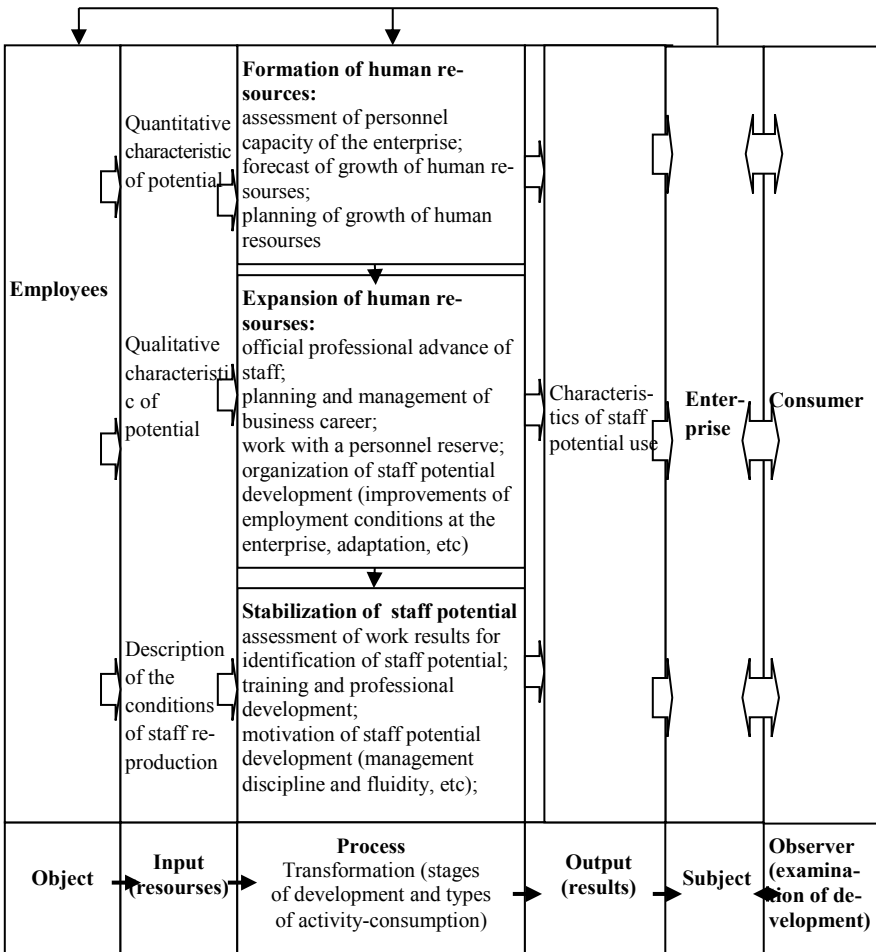


Figure 12.4. The model of the development potential of the company according to the logistic approach

Resources-results characterize a certain set of characteristics of human resources, reflecting the quality and other state and staff functioning. For example, there are quantitative resources-results, qualitative resources-results of staff potential of the company, description of staff use, which can and must have the generalized and necessary concrete form and shape at the enterprise. This selection makes it possible to specify the subject area and to specify the object of knowledge in dynamics on the whole from general to concrete. At the same time they can also be

classified by forms according to the law of power conservation: useful results-resources (performing or performed works), losses, unprofitable, harmful resources-results, reserves of resources-results, results with plus, zero, minus. All types of activities-consumption generally display functional activity of the enterprise in the process of transformation of resources-results. All kinds of transformation of resources-results are carried out in types of activity-consumption. They are also covered with the possibility to conduct researches from general to specific under certainty and to classify them, according to the law of power conservation. Cycles and stages of development, in their turn, reflect the start, the order of change – sequence, direction of movement, the end movement and transformation of resources-results, types of activity-consumption that are characteristic for the development potential of the company.

There is also the possibility to determine the degree of efficiency of each stage, of the whole cycle, of each resource-result and activity-consumption. As a result, knowledge of staff potential development and its components is a complex, with the interrelation of resources-results, types of activities-consumption in dynamics due to specific cycles and stages of development on a new-holistic level.

Together they create a holistic adequate idea of the development process, reflecting the structure in a quantitative and qualitative way, form, content, direction and frequency in continuous motion – dynamics. The development as a creative process, aimed at changing direction and speed of the flow of free energy (power utility) in space and time. This change is achieved through the implementation of the ideas that arise in the minds of people.

Thus, the development of human resources is proposed to be viewed as a sequence of stages of development (formation, expansion and stabilization), including a set of actions that attract resources and are managed to transform inputs into outputs.

Process approach is not just a description of the sequence of actions to transform something.

For the process, apart from the technology of performance, requirements for inputs and outputs, resource requirements (personnel, work environment, information, etc.), criteria for evaluation of process and satisfaction of its clients should be defined. For each process, the «owner», who will be responsible for the efficiency of the process, should be determined. And the most important - before you submit any activity as a process, you must ensure that this activity brings the company's additional cost (that is, firstly, performance of value for the customer, and secondly, this activity is appropriate in terms of its implementation cost). For example, just select «key competences» that bring more

additional cost to the business, and manage both processes. All defined processes must have its owners. They should have all resources that are necessary for process performance.

Thus, the basic elements of the process are:

1. Participants of process: all active and passive members of the working group, whose interests are hooked with change (it is possible to judge about its nature, scale and coverage by number of stakeholders) occurring in the enterprise, refer to them.

2. The subject (initiator) of process, one of the participants that has significant available resources that allow to maintain momentum and direction changes for a long time. The initiator of the process is able to make a major impact on the course of change by creation of conducive environment to achieve the expected result. The impact that is initiated on the process, cannot even be perceived as one, causes certain changes against will and interests of the initiator. Among other factors, it can stimulate widespread cases of control loss of control initiator by changes caused by him.

3. Reasons of process. The reason is the inherent process and it is an internal source. These changes are influenced by factors (causes of process) [7].

4. Observer - formal or informal member of staff; a source of cognitive process parameters. Reflecting a process, observer, based on scientific approach, seeks to recognize the logic of the process, touching upon the importance of the fact of its occurrence, and produces some imaginary diagram of understanding and explains the observations in the event that makes an examination of human resource capacity to meet the criteria of standards of staff development. The observer is mainly a passive participant of the process, giving an idea of his character, gives to it some meaning and significance.

In relation to the level of the logistics system, labor flows can be divided into incoming, outgoing, outgoing-rotary. Since the link of logistics system, due to definitions [3], can be seen at every level of economic activity, including the micro logistic systems at the enterprise level, that, when considering the input, output, and output-rotary labor flows in relation to level logistics system will present the same set of properties, structure and characteristics, in relation to the link of logistics system there will be the same structure a set of properties and characteristics as in relation to the logistics system as a whole. Note that for incoming labor flows should a source of their appearance should be provided, which can be both external and internal in relation to the logistics system, so link of logistics system is one of its elements.

At the entrance of the scheme initial object is based, that subjects to further transformation, taking place at intermediate stages. In the end we can see an object with new, predetermined and desired properties. The initial object is given by system characteristics, the presence of which is controlled by means of standardized monitoring and measuring procedures [8]. As in any system fluctuations are always possible and not all properties of the object are under control, it is necessary to organize constant feedback between subject and object, and the properties of the final product should be set with taking into consideration the range of acceptable values. Quantitative and qualitative characteristics of human capacity often act as the initial object of transformation. [9] Conversion to the final object is made by using tools of development of staff potential, depending on stage of development (formation, use and stabilization of staff capacity) [8]. The end result of the transformation is the formation of characteristics of use of human resources [9].

Overall the flow process of development of potential of the company, in our view, should consist of complex elements that ensure the development of the company in accordance with its objectives. During the movement of personnel potential it is advisable to allocate the infield management of certain operations and functions of the process that will ensure effective, both in terms of content and in terms of the direction, the target formation and transformation of human resources. In conclusions, we agree with Fomenko A.V., namely, human resources should be of required standard of quality and quantity, based on the task and move destination [10]. Aimed at implementing the objectives of the enterprise, flows of staff capacity must implement their functions in the right place at the company or element of the environment, associated with it. Arrival of staff potential flow at each stage of their displacement must be at the right time. Application process approach to management of the development of human capacity aims to maximize its implementation and to give further development and self-realization, provided lower overall, including time costs to the staff.

We should agree that process exists due to needs of the consumer and is used for satisfaction of these requirements. Application process approach begins with the processes that relates primarily to the needs of external customers. They are called «processes that are focused on the consumer» [11]. Due to our position, the development of human capacity is a process that focuses on the consumer both external and internal (enterprise as a consumer of this process). Therefore, to assess the quality of the process, external and internal examination of the development of human capacity is used. But, we should pay attention to the important part of the development of human capacity – it is those who carry out an

examination of human resource capacity (fourth element of the process – the observer). On the one hand, we talk about the internal observer, that the examination of human resource capacity makes the enterprise. On the other hand it is the external observer, that the examination of human resource capacity makes the consumer. In both cases, the nature of expertise is in assessing the quality of service according to the standard of service.

In the process of operation of socio-economic systems, flows of different resources interacts each other, which can be different depending on the results and stage of the production process. Labor flows are characterized by the highest degree of interaction with other resource flows, as converting of any resources is impossible without labor flows. Therefore, relatively to other resource flows, labor flows that interact with the material flows, labor flows that interact with the information flows, labor flows that interact with financial flows and in the field of education labor flows that interact with labor flows can be distinguished.

The analysis of certain types of logistics flows, of course, is important for achieving goals of the company. However, as noted above, we cannot forget the importance of labor flows synthesis of other logistics flows into the only system that ensures the implementation of logistic approach to management of economic resources. The relevance of this research requires formation of fundamental analysis and functioning of the system of resources organizations at the micro and macro levels, necessary for effective social and economic development of society. The significance of research is determined with the fact that dynamism, complexity and uncertainty of the environment of modern enterprises, highlighted above, requires the adoption of preventive operational decisions on resource allocation of organizations including labor, based on the concept of system approach to management. Only in this case, the current requirements for adaptability of organizations of any level necessary for their existence and development can be implemented.

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12.4. Innovations in the logistical system of an enterprise-entity engaged in foreign economic activities

Latunova D.A.

Companies, which operate in various sectors in conditions of hard competition, have to concentrate its activities on the main business and trust the non-core assets (transportation, warehousing and others) to specialized companies. That is why in modern conditions more and more companies transfer the non-core or non-profit business processes to a specialized company. It reduces the overall cost of production, switch all the attention directly to the main activities of the enterprise, and it will lead to the production of more competitive products and the possibility of increasing the quality of the end-user service.

Analysis of recent studies and publications. A lot of foreign and domestic experts, including Ayvazyan Z.S. [1], Anikin B.A. [2] Gottshgalk P. [4], Gunter A. [5], Daft R. [6], Dybskaya V.V. [7], Zaitsev E.I. [7], Zolotov V.A. [8], Ivlev A. [9], Kalendzhyan S.A. [10] Krikavsky E.V. [11], Kurbanov A.H. [12], Lezhenko V.A. [21], Lozovsky L.S. [16] Mikhaylov D.M. [14], Polyakov V.V. [13], Pospetch L.Z. [15], Ruda I.L. [2], Rusnak A. [17], Starodubtsev E.B. [16], Sergeev V.I. [7], Streligova A.N. [7], Filina F.N. [18], D. Haywood [19] Chornopiska N.V. [11], Chukhray N.I. [11, 20], Shapoval S.S. [21], Shcherbakov V.V. [22] and others have studied the problem of the formation of the theoretical foundations of outsourcing. Anikin B.A. [2], Gunter A. [5], Dybskaya V.V. [7], Zaitsev E.I. [7], Krikavsky E.V. [11], Lezhenko V.A. [21], Ruda I.L. [2], Chornopiska N.V. [11], Chukhray N.I. [11, 20], Shapoval S.S. [18], Shcherbakov V.V. [22] and others have just studied the issue of logistics outsourcing.

However, the lack of consensus about the definition of the essence of the concept of «logistics outsourcing» promotes the continuation of the examination of this issue.

Therefore, the aim of this study is to analyze and systematize the main approaches to understanding the essence of the concept of «outsourcing», the establishment of compliance with the existing definitions of outsourcing and logistics outsourcing to modern requirements and the disclosure of the content of the new concept of «logistics outsourcing».

The concept of «logistics outsourcing» itself appeared recently, that is why we offer to determine how domestic and foreign scholars interpret the term «outsourcing». In modern literature, there are many interpretations of the term «outsourcing», which is verbatim from English «outer source using» means the use of an external source or resource [3]. Most business sources treat this term as getting of long-term contractual agreements about providing of the necessary services for the transfer of certain businesses manufacturing services to third parties. It should be noted that the term «outsourcing» means long-term, long-term contractual relationship between the customer and the contractor in which the outsourcer adapts its own resources (intellectual, industrial and technical, technological, etc.).

In economic literature outsourcing is considered as a part of the transferring of certain functions or business processes in the implementation of «a third part». We will present the approaches to the definition of «outsourcing» below in table 12.1.

As it can be seen from table 12.1, most authors investigating this issue are divided into two groups: the first are considering outsourcing as a transfer of business processes to a third part, others are studying how to optimize the outsourcing enterprise.

Among the authors only Zolotov V.A. [8] provides a broader definition of the term «outsourcing», which brings together two groups of definitions, and treats outsourcing as optimization of the enterprise due to the transferring of non-core work to outside organizations.

The above mentioned definitions allow to do the following conclusions:

1. The main feature of outsourcing is focus on the effect on the service, rather than the service itself.
2. Outsourcing is characterized by a high level of confidence between the participants and the reliability of transactions, because responsibility is delegated.

These reasons improve the work of the enterprise and allow to focus on main business, develop new directions of development which require

attention, to adapt quickly to a changing environment, to improve their competitive position in the market conditions.

Table 12.1. Systematization of approaches to define the essence of outsourcing

Group of definitions	Definitions	Source
Outsourcing as a transmission of one of the functions of a third part	The transmission of the traditional non-core functions of the organization (such as accounting or advertising activities) to outer performer – outsourcers, contractors, highly skilled experts of the third-party company. Kind of cooperation	Reisenberg B.A., Lozovsky L.S., Starodubtsev E.B. [10]
	Transfer to another company (the subcontractor) the order to perform certain operations, such as the location of production components, the performance of certain works and other activities on the «side»	Krikavsky C.V., Chornopiska N.V., Chukhray N.I. [9]
	Reduction or renouncement of its own business process, mainly non-core or non-profit for the company and transfer it to the specialized companies	Shapoval S.S., Lezhenko V.O. [17]
	Transferring of certain supporting functions to a third part, who specializes in the conforming field of activity	Ayvazyan Z.S. [1]
	Implementation of individual functions (manufacturing, service, information, financial, logistical, administrative, etc.), business processes (organizational, financial, economic, industrial, technical, marketing), foreign organization has the necessary resources on the basis of long-term agreement	Anikin B.A., Ruda I.L. [2]
	Optimization of the activity of the company by focusing on main business and transfer of non-core works to external specialized organizations (outsourcers) on a contractual basis	Zolotov V.A. [6]
	Organizational solution that optimizes business system configuration based on «quality – consumption – ownership»	Ivlev A.G. [7]
	Sale of own capacities for the implementation of all business processes (repair, accounting); transition to the acquisition of the relevant products or services on the side	Kalendzhyan S.O. [8]
	Business technology involving transfer of specialized firms (outsourcing companies) processes or functions within their business along with the responsibility for the result of these processes	Mikhailov D.M. [11]

Table 12.1 continuation

Group of definitions	Definitions	Source
Outsourcing as an optimization of the enterprise organization	Transferring of IT-assets, leased facilities, staff and management responsibilities to third part organizations	Gottshgalk P. Soli-Seter H. [3]
	Involving a third part to solve the problems in the relationship with the external environment, as well as internal problems related on the implementation of specific business processes or the use of high technologies, such as information	Polyakov V.V., Schenin R.K. [12]
	The form of business organization directed to optimize all the resources of the business system, from point of view of economic expedience, assurance and improvement of the competitive ability of strategic interest associated with the transferring of certain services (functions, operations, activities, powers) and the assets of another entity that has a certain specialization or competence based on long-term relationships	Pospech L.Z. [13].
	Transferring the relevant intermediaries of certain internal operations, allowing almost instantly receive the significant cost savings and improve product quality	Daft R. [5].
	Transmission processes and functions to another company (or agent) by the client to carry them out	Jermaine R., Gunter A. [4].
	Transferring to a third part certain tasks, business functions or business processes, which are usually not a part of the main activity of the company, but, nevertheless, are necessary for the normal functioning of the business	Rusnak A.V. [14].
	This is the conclusion of the contract with a third part to transfer its responsibility for the implementation of business processes or functions	Filina F.N. [15].
	Transferring of internal divisions of the enterprise and all of its assets in the organization of the service provider, offers to provide some kind of service for a specified time at a specified price	Heywood D.V. [16].
	Refusing from own business process and obtaining services on the implementation of the business process in the «third part»	Shcherbakov V.V.

The logistics outsourcing in modern conditions must be regarded as one of the main logistics strategies of industrial and commercial enterprises. After all, the desire to reduce inventory, optimize the traffic flows, to react quickly to changes in request and manage the supply chain. It

is an integral part of the logistics of the company and determines the outsourced logistics as an integral component in the current market conditions and, as a consequence, logistics outsourcing concept is discussed in the research and business community. It is also caused by objective reasons for the intensive development of the logistics service market, as well as the opportunity of reducing the costs by using outsourcing and concentration of business organization on key competences [18]. Nevertheless, the concept of logistics outsourcing is not an ambiguous interpretation and is often used as a term for various forms of cooperation.

In foreign literature, along with the concept of «logistics outsourcing» they use the term «third-party logistics» (TPL) or «3rd party logistics» (3PL). It refers to the provision of logistics services to the shipping and storage of the address to the order management and tracking of the movement of goods. The functions of 3PL-provider are organization and traffic management, accounting and inventory management, preparation of import and export documentation and freight, warehousing, cargo handling, delivery to the last consumer [23].

So 3PL-provider is a company-outsourcer which provides a full range of logistics services essential for the promotion of products throughout the supply chain, which enables the client (company) to get the whole set of logistics services to meet all customer needs for logistics services. These services include everything from accounting reserves production, warehousing, transportation to the preparation of documents and delivery to the final consumer.

Other scholars, such as Dybskaya V.V., Sergeev V.I., Zaytsev E.I., Sterligov A.N. [7] believe that the logistics outsourcing is a strategy for management of the company, not just a kind of partnership, where outsourcing implies a certain internal corporate restructuring processes and external relations the focus of the supply chain.

Russian scientists, for example, N.I. Chukhray, used to determine the logistics outsourcing concepts such as «outsourcing of logistics processes» and «Contract Logistics». These concepts mean using of an outside firm which is engaged in distribution – Carrier, a warehouse of the company or firm, managing transport – to perform all or some of the functions of the organization receiving services in the field of content management and distribution of products to the market. Range of outsourcing in the logistics supply chain scope can be narrow, limited the purchase of certain functions, such as transportation or storage, or wide, which covers the complete agreement concerning the management of the entire supply chain [20].

Despite the diversity of views of modern scientists we can identify common features characteristics of different views and authors, namely:

- some functions of logistics activities and full activity of the company are outsourced;
- outsourcer takes responsibility in all stages of the supply chain;
- logistics outsourcing - a long-term agreement that provides a contractual relationship between the customer and the outsourcer;
- logistics outsourcing is used to optimize costs and resources in the enterprise.

Considering all the above mentioned, we can offer the following comprehensive definition of logistics outsourcing: it is the process of delegating separate logistical functions or business processes on a long-term contract basis to optimize the activity of the enterprise and reduce production-technological, intellectual and economic costs, as well as adequate resources. Conclusions and prospects for further research. The approaches to the definition of the term «outsourcing» were analyzed and systematized in this work. They define outsourcing as the transferring one of the functions of the organization and as optimization of the enterprise. The essence of logistics outsourcing was investigated. As a result it was found that the majority of foreign scientists, along with the term «logistics outsourcing», take «third-part logistics», while domestic scientists consider «logistics outsourcing» as the transfer of logistics functions to specialized companies.

The own approach to the definition of logistics outsourcing was offered. Prospects for further research are directed to develop methods and tools to ensure specific guidelines.

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APPENDICES

This monograph continues the series of books, that have released the results of International scientific-practical conference «Innovations marketing and innovations in marketing». The scientific results that are presented in the monograph reveal the theoretical-methodological and methodical aspects of innovative development management at different levels of aggregation (individual enterprise or establishment, industry, national economy, etc.) on the basis of innovation marketing, which is considered as the activity which has been directed on search of new spheres and ways of the enterprise potential use, on this basis new products (goods or services) development and technologies of their promotion on the market in order to meet the consumers' needs and demands more effectively than competitors way due to this, getting profits and ensuring the long-term survival and development in the market.

The authors covered a fairly wide range of theoretical and methodological problems that hinder of the creation processes management and innovation diffusion, the tools and methods for innovation management and marketing innovation improvement. In particular, the problems relating to: the innovation place and role and innovation activities in the economic growth processes are clarified; the mechanism of innovative development market-oriented management is improved; the innovation business social responsibility, overcoming the contradictions between the environment growth and preservation, or even improvement; the innovation marketing and logistic creation and implementation as a tool for promoting innovation development and etc.

The different scientific school's representatives' approaches from different perspectives reveal certain aspects of the organizational-economic mechanism of innovative development marketing management are presented in the book. This approach, despite some contradictory approaches, allows to reveal fully the peculiarities of mechanism components functioning and their elements, to identify existing conflicts and to find ways for effective resolving them. Many years experience in the monograph preparation and publication has shown that each of them complements and builds upon the innovation management theory and marketing innovation and innovative marketing, identifies the relevant areas for the further research. A number of authors' ideas and scientific achievements that have been outlined in the previous monographs, have been developed in the further studies and have been successfully defended the master's or doctoral theses.

The last editions were written in the Ukrainian language that limited the readership and were not allowed to convey the authors' ideas and achievements of a wide readers circle, first of all, the foreign one. Writing a monograph in English the authors goal was to expand the readers circle due to the English-speaking scholars and practitioners who are interested in the subject, to familiarize them with the scientific results. The unbiased critical reviews will allow to adjust the research direction, taking into account global trends, to consider these tendencies in the further studies. On the other hand, the authors try to include English-speaking scientists in their studies and hope that they will participate in next further editions.

The authors do not claim to be peremptory of their findings and recommendations and will greatly appreciate the colleagues' critical comments that will be taken into account in the further studies.

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MARKETING, MANAGEMENT,
AND INNOVATIONS**

Illiashenko, S.M., Strielkowski, W. (eds.)

Published by Prague Institute for Qualification Enhancement

**Pražský Insitut zvyšování kvalifikace
Trnkovo nám. 1112/2
152 00 Praha 5
Prague, Czech Republic
IČ: 04265611, DIČ: CZ04265611**

ISBN 978-80-906210-0-8

1st edition

640 pages

Prague 2016