SCHOOL OF PROJECT MANAGEMENT

STUDY PACK

FOR

PROJECT PROCUREMENT MANAGEMENT

AND

PROJECT STAKEHOLDER MANAGEMENT

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Chapter 1

An Introduction to Project Management

Objectives

The purpose of this training is to introduce key project management terms and concepts to provide a common language for discussion, including what is:

- ✓ A project
- ✓ Project management
- ✓ Project success
- ✓ A project manager
- ✓ A project management plan

Successful project management has several significant characteristics. To understand the value of project management, it is necessary to understand the fundamental nature of a project; the core characteristics of project management processes; how success is evaluated, the roles, responsibilities, and activities of a project manager and the expertise required; and the context in which projects are performed.

What is a Project?

The fundamental nature of a project is that it is a "temporary endeavour undertaken to create a unique product, service, or result."

Projects are distinguished from operations and from programs.

The temporary nature of projects indicates a definite beginning and end. The end is reached when the project's objectives have been achieved or when the project is terminated because its objectives will not or cannot be met, or when the need for the project no longer exists. Temporary does not necessarily mean short in duration. Temporary does not generally apply to the product, service, or result created by the project; most projects are undertaken to create a lasting outcome. For example, a project to build a national monument will create a result expected to last centuries. Projects can also have social, economic, and environmental impacts that far outlast the projects themselves.

Every project creates a unique product, service, or result. Although repetitive elements may be present in some project deliverables, this repetition does not change the fundamental uniqueness of the project work.

An ongoing work effort is generally a repetitive process because it follows an organization's existing procedures. In contrast, because of the unique nature of projects, there may be uncertainties about the products, services, or results that the project creates. Project tasks can be new to a project team, which necessitates more dedicated planning than other routine work. In addition, projects are undertaken at all organizational levels. A project can involve a single person, a single organizational unit, or multiple organizational units.

Temporary Endeavour

To be temporary signifies that there is a discrete and definable commencement and conclusion; the management of a project requires tailored activities to support this characteristic, as such, a key indicator of project success is how it performs against its schedule that is, does is start and end on time.

Unique Deliverable

The uniqueness of the deliverable, whether it is a product, service, or result, requires a special approach in that there may not be a pre-existing blue print for the project's execution and there may not be a need to repeat the project once it is completed. Uniqueness does not mean that there are not similarities to other projects, but that the scope for a particular project has deliverables that must be produced within constraints, through risks, with specific resources, at a specific place, and within a certain period; therefore, the process to produce the deliverable as well as the deliverable itself is unique.

Progressive Elaboration

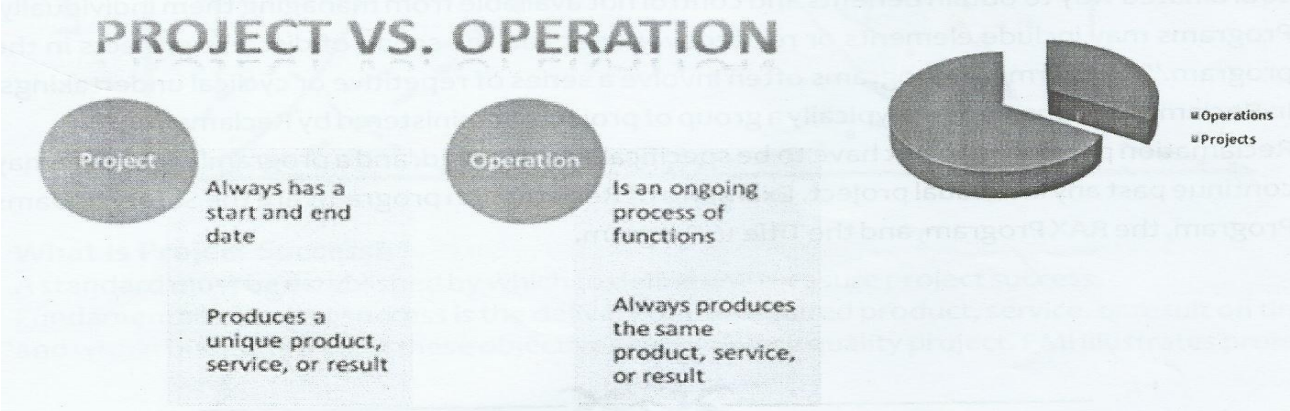
This unique process and deliverable produces the third characteristic of a project: progressive elaboration. Project management is a group of interrelated processes, implemented in a progressively elaborative manner, in which to produce the deliverable. Progressive elaboration is the revealing and focusing of details through time. For example, in the engineering design process, a general and broad concept may be a starting point for the design team; but through the design process, the concept is narrowed to a specific scope and is further elaborated to achieve the completed design; moreover, it may continue to be elaborated and not be finalized until the product, service, or result is delivered.

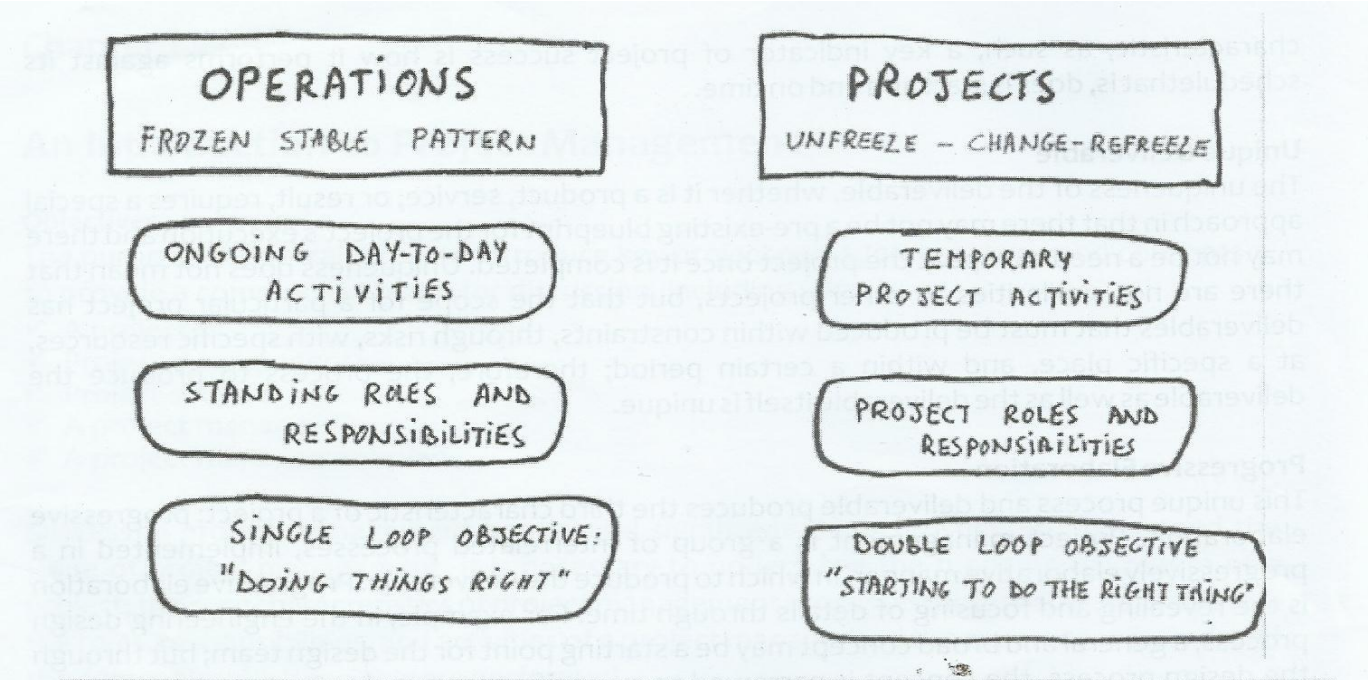
A project can create:

- ✓ A product that can be either a component of another item or an end item in itself,
- ✓ A capability to perform a service (e.g., a business function that supports production or distribution),
- ✓ A result such as an outcome or document (e.g., a research project that develops knowledge that can be used to determine whether a trend is present or a new process will benefit society).
- ✓ An improvement in the existing Product or service lines (e.g., A Sigma Project Undertaken to reduce Defect)

A Project versus an Operation

The operations of an organization are continuing and repetitive activities that are executed to achieve its mission and sustain the business, but without a definable end to their performance and without a unique output that is, it is not produced or provided only once.



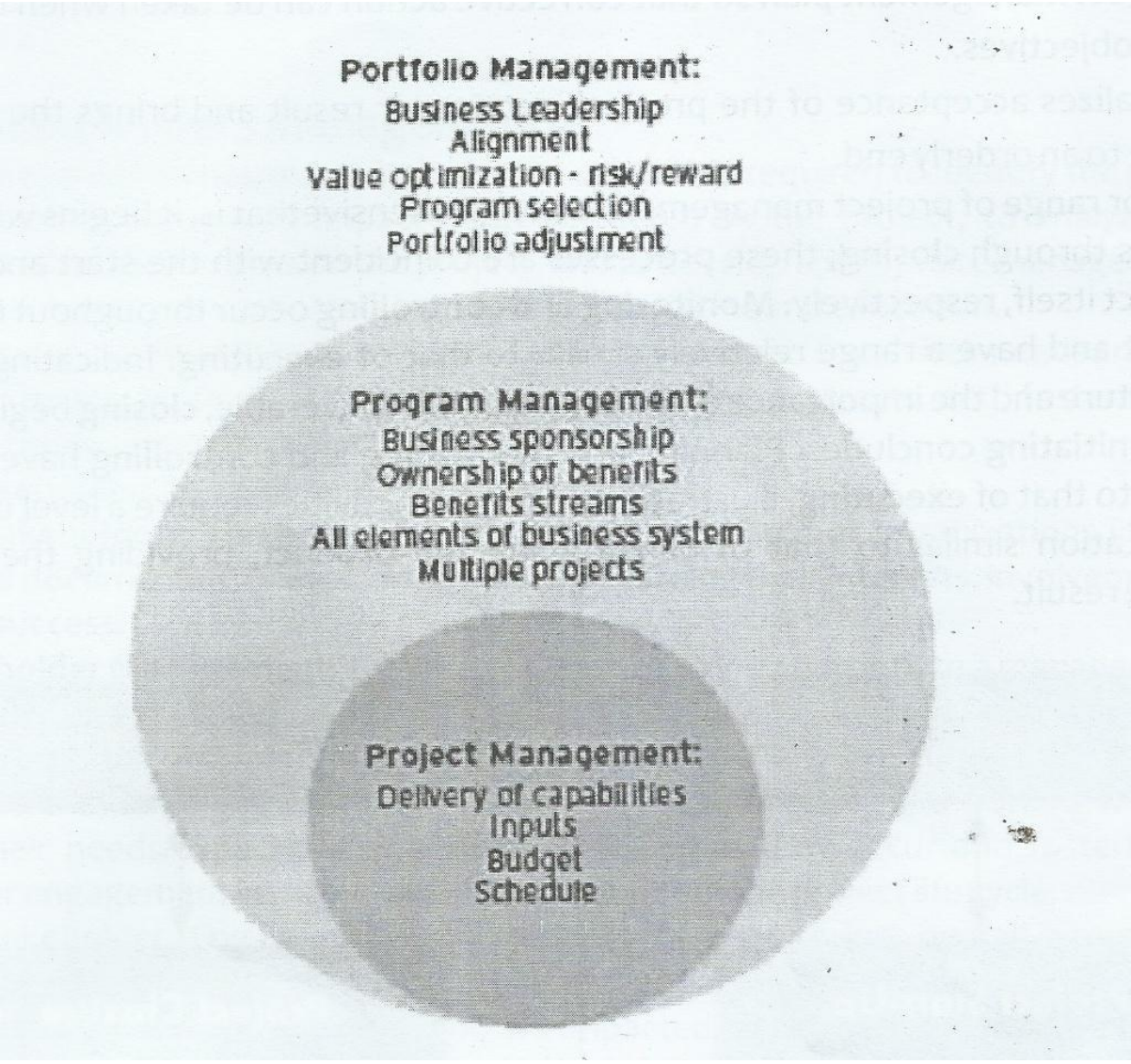


Constraints	Operations	Projects
Existence	Permanent	Temporary and unique
Scope	Continous and repetitive	First time, Terminates after finishing objectives
Time	No Time Span defined. Its ongoing	Definite Time Span
Budget	Operations have to maintain a specific profit margin	Project has to stick with a definite budget

A Project versus a Program

A project differs from a program in that "a program is a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually. Programs may include elements or related work outside the scope of discrete projects in the program." Furthermore, programs often involve a series of repetitive or cyclical undertakings. In Reclamation, a program is typically a group of projects administered by Reclamation.

Reclamation programs do not have to be specifically authorized, and a program's schedule may continue past any individual project. Examples of Reclamation programs are the Safety of Dams Program, the RAX Program, and the Title 16 Program.



What Is Project Management?

"Project management is the process of the application of knowledge, skills, tools, and techniques to project activities to meet project requirements." That is, project management is an interrelated group of processes that enables the project team to achieve a successful project. These processes manage inputs to and produce outputs from specific activities; the progression from input to output is the nucleus of project management and requires integration and iteration. For example, a feasibility report could be an input to a design phase; the output of a design phase could be a set of plans and specifications. This progression requires project management acumen, expertise, tools and techniques, including risk management, contingency development, and change control.

Process Groups

The project management process groups are initiating, planning, executing, monitoring and controlling, and closing.

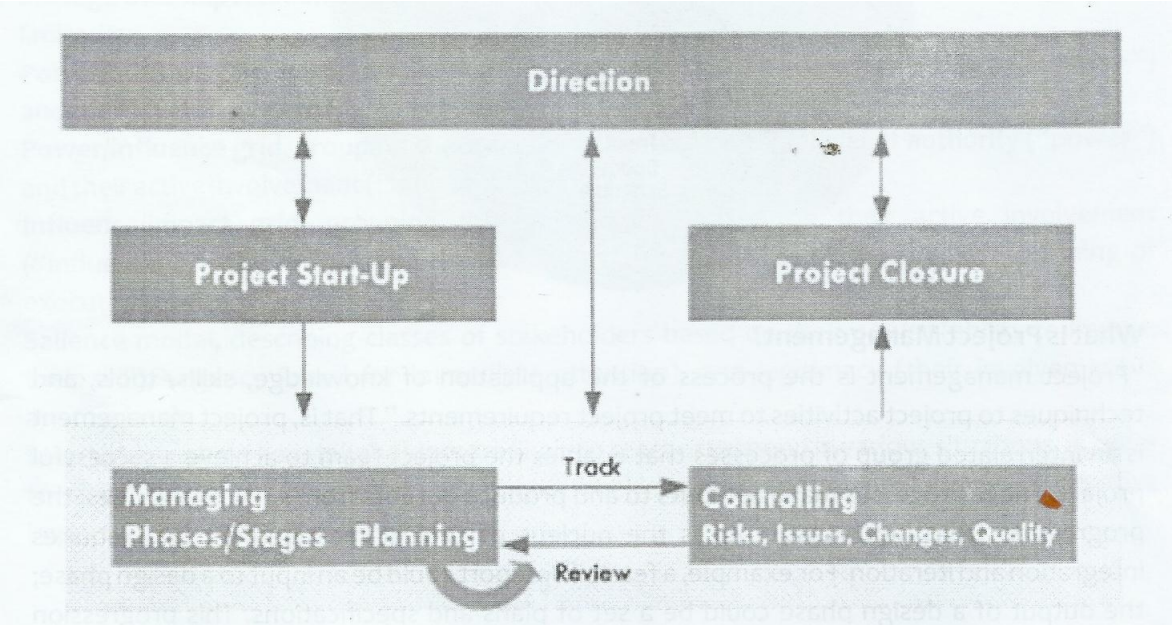
Initiating defines and authorizes the projector a project phase.

Planning defines and refines objectives and plans the course of action required to attain the objectives and scope that the project was undertaken to address. Executing integrates people and other resources to carry out the project management plan for the project.

Monitoring and controlling regularly measures and monitors progress to identify variances from the project management plan so that corrective action can be taken when necessary to meet project objectives.

Closing formalizes acceptance of the product, service, or result and brings the project or a project phase to an orderly end.

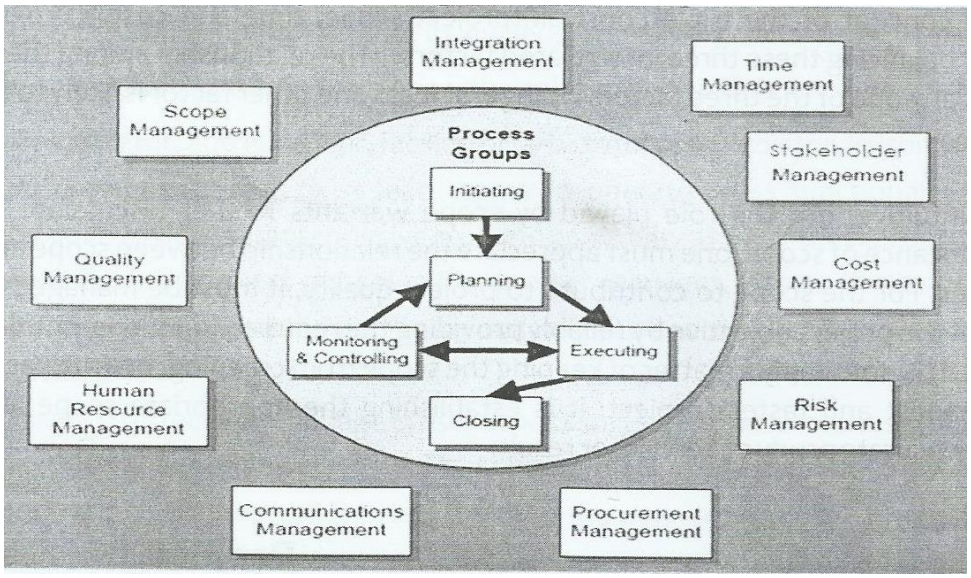
The breadth or range of project management is comprehensive that is, it begins with initiating and continues through closing; these processes are coincident with the start and end of the specific project itself, respectively. Monitoring and controlling occur throughout the duration of the project and have a range relatively similar to that of executing. Indicating a project's temporary nature and the importance of the timing of the deliverable, closing begins relatively shortly after initiating concludes. Planning and monitoring and controlling have a collective depth similar to that of executing, illustrating that these activities require a level of effort and have a implication similar to that of constructing the product, providing the service, or producing the result.



Process Group Interaction

The level of interaction of the five processes indicates a strong relational dependence not exclusive of one another. One process does not simply end and the next one begins. The presence of this interrelationship and range is a function of progressive elaboration. Projects are executed in increments and details are exposed and developed through the progression of time objectives are developed, discoveries are made; investigations, studies, and surveys are completed; analysis is performed; constraints are changed; resources are amended; contingencies are exercised; changes are managed; risks are mitigated; and Force Majeure (unforeseeable or unpreventable circumstances) occurs.

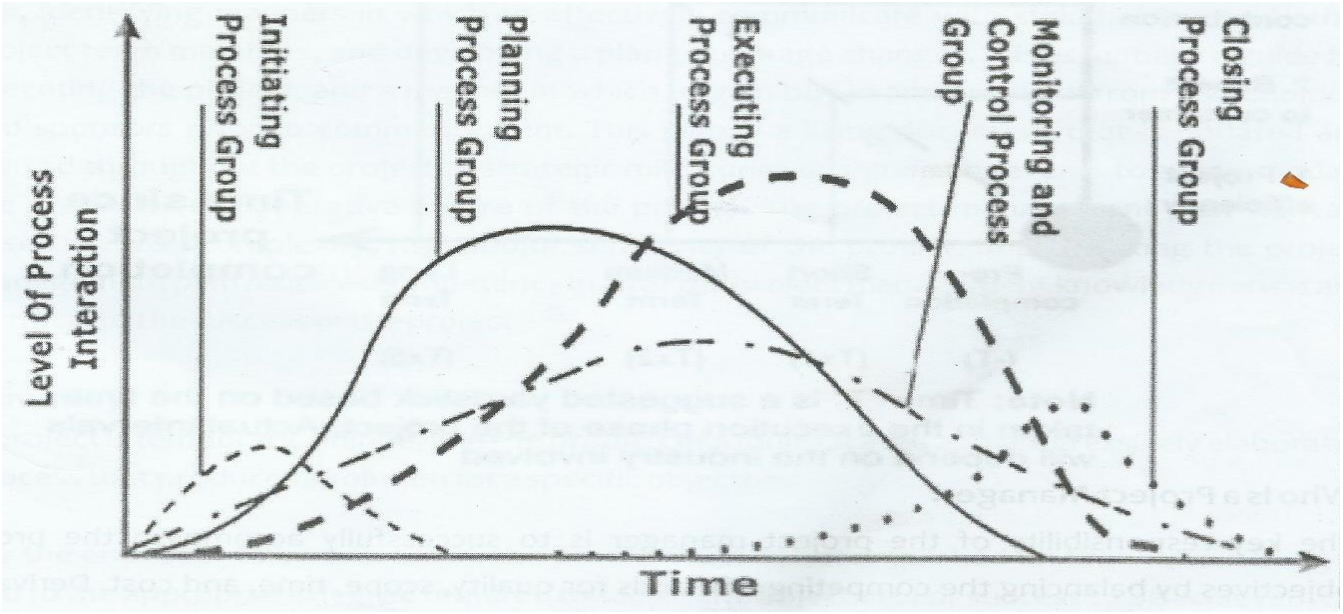
To manage the breadth or range of a project, active and proactive project management is required throughout the duration of the project. It cannot be simply initiated and/or planned and left alone; it must be continually planned and monitored and controlled. Sustained reactive project management is indicative of incomplete or absent planning and/or monitoring and controlling.



Project Phases versus Process Groups

Project management process groups are not project phases. In fact, the process groups may need to be repeated for each phase, such as study, programming engineering, procurement, construction, and commissioning. A process group or project phase is not discrete; they are interdependent and require integration.

Also, project management must ensure continuity as a project progresses through processes and phases.

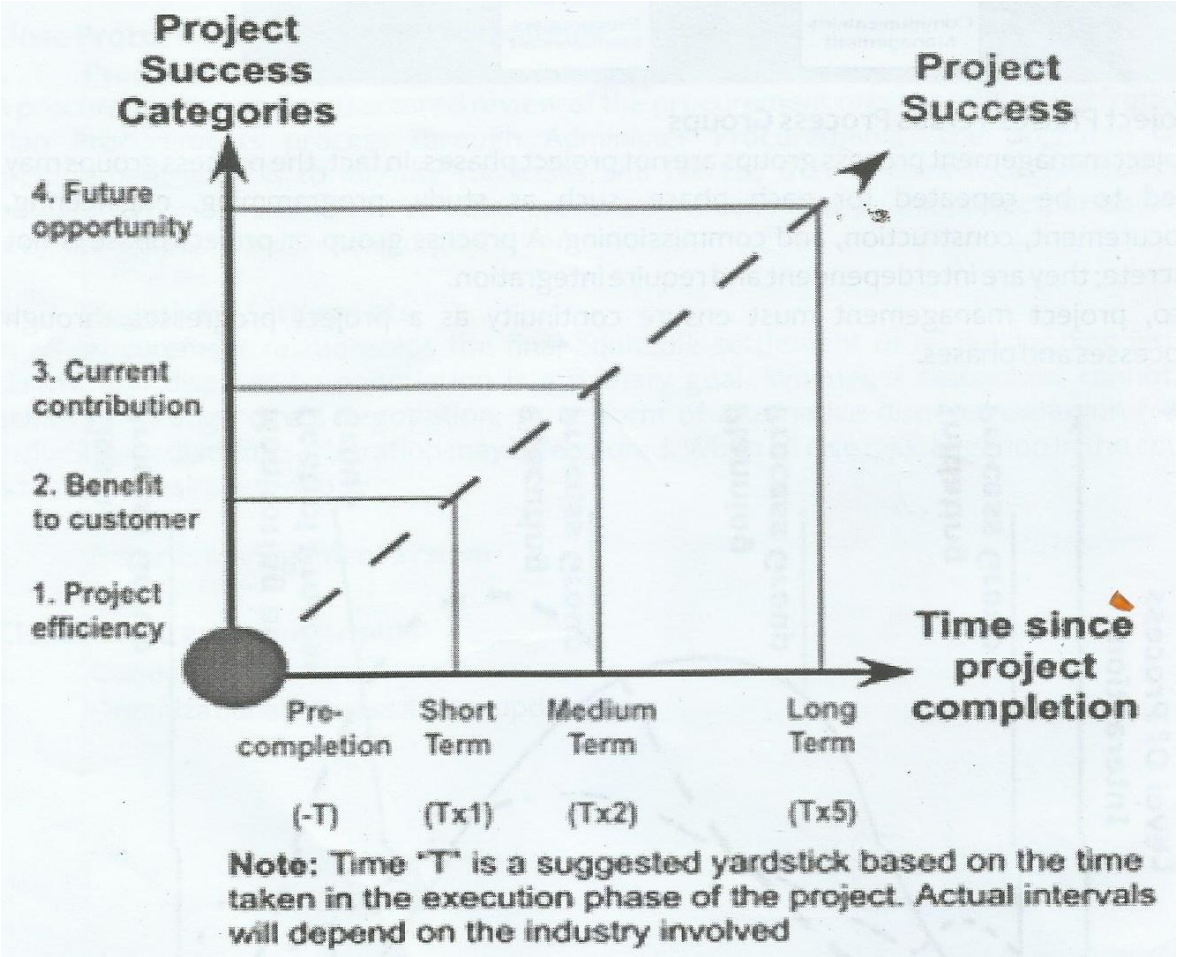


What Is Project Success?

A standard must be established by which to define and measure project success. Fundamentally, project success is the delivery of the required product, service, or result on time and within budget. To meet these objectives is to deliver a quality project. PMI illustrates project quality through the concept of the triple constraint project scope, time and cost.9 Project quality is affected by balancing these three interrelated factors. "The relationship among these factors is such that if any one of the three factors change, at least one other factor is likely to be affected."

Cost and time are intuitive, but the role played by scope warrants further discussion. To understand the significance of scope, one must appreciate the relationship between scope and the project objectives. For the scope to contribute to project quality, it must be managed to meet the demands of the project objective by reliably providing the required functions, nothing more or nothing less. It is not simply a matter of keeping the scope from creeping, or a

matter of completing the cheapest and fastest project; it is establishing the appropriate scope and delivering the commensurate product, service, or result.



Who is a Project Manager?

The key responsibility of the project manager is to successfully accomplish the project objectives by balancing the competing demands for quality, scope, time, and cost. Derivative responsibilities include identifying the project requirements; establishing clear and achievable objectives; and adapting the specifications, plans, and approach to the different concerns and expectations of the various stakeholders. Fundamentally, the project manager must direct the project from its inputs, through its nucleus, to delivery of its outputs. In order to accomplish these multifaceted responsibilities, the roles of the project manager include that of a leader, administrator, entrepreneur, facilitator, arbitrator and mediator, liaison, and coordinator.

The project manager must lead teams to operate cross functionally towards a common objective while assuring cohesiveness and continuity as the project

progresses through project processes and project phases. “The project manager acts as the key catalyst to stimulate effective communication and coordination between design, procurement and construction activities.”
In order to effectively manage these responsibilities and assume these roles, a project manager must have experience in the following project management knowledge areas: project integration, scope, time, cost, quality, human resources, communications, risk, and procurement management.

What Is a Project Management Plan (PMP)?
A project management plan is a fundamental tool for the project manager deliver the project successfully. This document is a strategic and formalized roadmap to accomplish the project’s objectives by describing how the project is to be executed, monitored and controlled, which includes creating a project work breakdown structure, identifying and planning to mitigate risk, identifying manners in which to effectively communicate with stakeholders and other project team members, and developing a plan to manage changes. It is essentially a guide for executing the project, and a manner in which to gain buy-in and approval from stakeholders and sponsors prior to commencement. This plan is a living document that is updated and revised throughout the project at strategic milestones or significant events to accommodate the progressive, elaborative nature of the project. The project management plan will vary based on size, complexity, risk, and/or sensitivity of the project. Implementing the project management plan requires competency in all of the project management knowledge areas and is critical to the success of the project

Summary
A project is temporary, unique, and the product of a multifaceted and progressively elaborated process that produces a solution for a specific objective.

For the endeavor to be successful, the project must be accomplished on time, within budget, and to the appropriate degree required to satisfy the objective. For success to be achieved, the project manager must be skilled and operate in an environment which enables a project team to function. Excellence in project management should be viewed as the positive trend in the performance of successful projects.

Chapter 2

Project Life Cycle and Organization

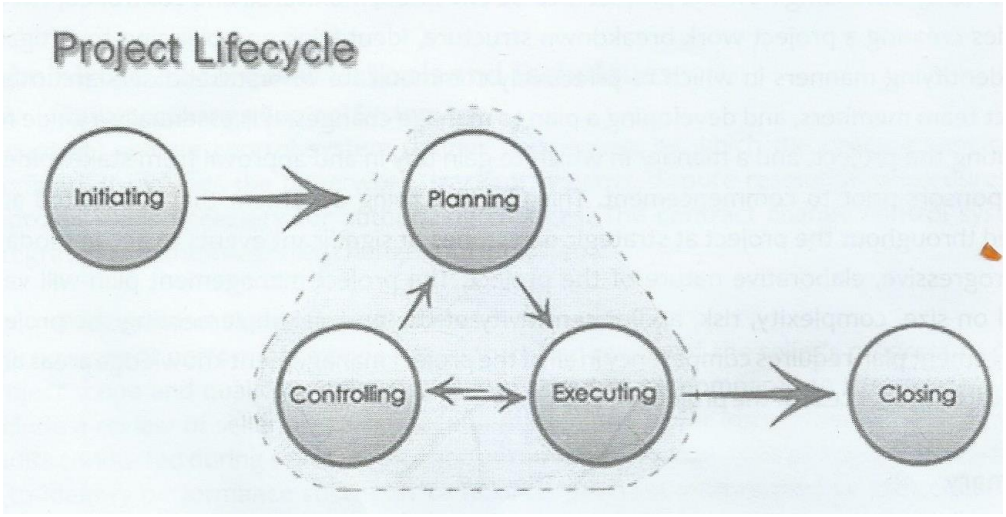
The project life cycle Overview

A project life cycle is a collection of generally sequential and sometimes overlapping project phases whose name and number are determined by the management and control needs of the organization or organizations involved in the project, the nature of the project itself, and its area of application.
Projects and project management take place in an environment that is broader than that of the project itself. It is imperative to understand these environments and structure approaches that would enhance project success.

- ✓ Divides the project into phases that provide better management
- ✓ Deliverable usually approved before the work starts on the next phase, but sometimes a subsequent phase is begun prior to approve of the previous phase (Fast Tracking)
- ✓ Cost are low at the start and higher towards the end and drop as the project closes
- ✓ Project life cycle VS Project management process

Project Life Cycle:

- ✓ Describes what you need to do to achieve the project object (to do the work for the project)
- ✓ Phases are known as project life cycle



Project Management Process

- ✓ Describe what you need to do to manage the project to achieve the project objective and meet the requirements
- ✓ Cost and Staffing Levels across the Project Life Cycle
- ✓ Impact of Variable Based on Project Time

Project Phases

- ✓ Project phases are divisions within a project where extra control is needed to effectively manage the completion of a major deliverable.
- ✓ Project phases are typically completed sequentially, but can overlap in some project situations. Project Phase is not a Project Management Process Group.

Project Governance Across the Life Cycle

Project governance provides a comprehensive, consistent method of controlling the project and ensuring its success. The project governance approach should be described in the project management plan. A project's governance must fit within the larger context of the program or organization sponsoring it.

Within those constraints, as well as the additional limitations of time and budget, it is up to the project manager and the project management team to determine the most appropriate method of carrying out the project. Decisions must be made regarding who will be involved, what resources are necessary, and the general approach to completing the work. Another important consideration is whether more than one phase will be involved and, if so, the specific phased structure for the individual project.

The phase structure provides a formal basis for control. Each phase is formally initiated to specify what is allowed and expected for that phase. A management review is often held to reach a decision to start the activities of a phase. This is especially true when a prior phase has not yet completed. An example would be when an organization chooses a life cycle where more than one phase of the project progresses simultaneously. The beginning of a phase is also a time to revalidate earlier assumptions, review risks and define in more detail the processes necessary to complete the phase deliverable(s).

For example, if a particular phase does not require purchasing any new materials or equipment, there would be no need to carry out the activities or processes associated with procurement.

A project phase is generally concluded and formally closed with a review of the deliverables to determine completeness and acceptance. A phase-end review can achieve the combined goal of obtaining authorization to close the current phase and start the subsequent one. The end of a phase represents a natural point to reassess the effort underway and to change or terminate the project if necessary. A review of both key deliverables and project performance to date to a) determine if the project should continue into its next phase and b) detect and correct errors cost effectively should be regarded as good practice. Formal phase completion does not necessarily include authorizing the subsequent phase. For instance, if the risk is deemed to be too great for the project to continue or if the objectives are no longer required, a phase can be closed with the decision to not initiate any other phases.

Business Value

This Concept is unique to each organization. Business Value is defined as the entire value of the business; the total sum of all tangible and intangible elements. Examples of tangible element include monetary assets, fixtures, stakeholder utility. Examples of intangible elements include goodwill, brand recognition, public benefit, and trademarks.

Depending on the organization, business value scope can be short- medium- or long term. Value may be created through the effective management of ongoing operations. However, through the effective use of portfolio, program and project management, organizations will possess the ability to employ reliable established processes to meet strategic objective and obtain greater business value from their project investments.

Though some organizations are not business driven every organization conduct business related activities,

Stakeholders

- ✓ Stakeholders are persons or organizations who are active involved in the project or whose interests may be positively or negatively affected by the performance or completion of the projects, they may also exert influence over the project, its deliverable, and the project team members.
- ✓ The project management team must identify both internal and external stakeholders in order to determine the project requirements and expectations for all parties involved.

- ✓ The PM must manage the influence of the various stakeholders in relation to the project requirements to ensure successful outcome.

What are stakeholders?

- ✓ Project Sponsor
- ✓ Project Manager
- ✓ Project Management Team
- ✓ Project Team Members
- ✓ Program Manager
- ✓ Portfolio Manager
- ✓ Program manager

Key Stakeholders

- ✓ Customer/User
- ✓ Performing Organization
- ✓ Influences
- ✓ Stakeholder Analysis

Stakeholders must be identified, have their needs and expectations understood and managed, and be communicated with frequently in order to complete the project successfully.

Organizational Structures

Organizational Structure is an enterprise environmental factor which can affect the availability of resources and influence how projects are conducted. Organizational Structures range from functional to projectized, with a variety of matrix structures between them. The following table shows key project related characteristics of the major types of Organizational Structures.

The classic functional organization is a hierarchy which each employee has one clear superior. Staff members are grouped by specialty at the top level. Each department will do its project work independent of other departments.

Matrix Organizations are a blend of functional and projectized characteristics. Weak matrices maintain many of the c/s of a functional organizational, and the project manager role is more of a coordinator or expediter than that of a true project manager. Strong matrices have many of the c/s of the projectized organization, and can have full true project managers with considerable authority and full time project administrative staff. While the balanced matrix organization recognizes the need for a project manager, it does not provide the project manager with the full authority over the project and project funding.

At the opposite the projectized organization shown in figure , team members are often co located most of the resources are involved in project work, and project managers have a great deal of independence and authority. lt often have departments either report directly to the project manager or provide support services to the various projects.

Many organizations involve all these structures at various levels as shown in the figure (Composite Organization) to coordinate between various projects.

PROJECT ROLES & EXPECTATIONS

- Customer/Business
- Project Sponsor
- Project Manager
- Project Steering Committee
- Project Team Members
- Other Stakeholders

Customer/Business

The organization or individual receiving the final product
Responsible for business requirements that must be met

Project Sponsor

Manager/Executive with demonstrable interest in the outcome of the project
Responsible for securing spending authority and resources for the project

Ideally, highest-ranking manager possible appropriate for the project size and scope

- ✓ Champions the project.
- ✓ Ultimate decision-maker for the project.
- ✓ Provides support for the Project Manager.
- ✓ Approves major deliverables.
- ✓ Signs off on approvals to proceed to each succeeding project phase.

Project Manager

- ✓ Responsible for ensuring that the Project Team completes the project
- ✓ Develops the Project Plan with the team
- ✓ Manages the team's performance of project tasks
- ✓ Secures acceptance and approval of deliverable from the Sponsor and Stakeholders
- ✓ Monitors performance and takes corrective actions when needed

Project Steering Committee

- ✓ Representatives from stakeholders.
- ✓ Review and approve major protect decisions or deliverable.
- ✓ When escalation reaches this level, make decisions on project issues and change requests.

Project Team

Responsible for executing tasks and producing deliverable:

- ✓ As outlined in the Project Plan.
- ✓ As directed by the Project Manager.
- ✓ At the level of effort or participation defined for them.

Vendor

- ✓ Contracted to provide additional product or services the project requires.
- ✓ PM manages relationship.
- ✓ May be part of Project Team.

Other Project Stakeholders:

Individuals and organizations actively involved in the project, or with interests that may be positively or negatively affected as a result of the completion of the project.

Chapter 3

Project Procurement Management

Project Procurement Management includes the processes necessary to purchase or acquire products, services, or results needed from outside the project team. The organization can be either the buyer or seller of the products, services, or results of a project.

Project Procurement Management includes the contract management and change control processes required to develop and administer contracts or purchase orders issued by authorized project team members.

Project Procurement Management also includes administering any contract issued by an outside organization (the buyer) that is acquiring the project from the performing

Center for Risk Modeling and Simulation organization (the seller), and administering contractual obligations placed on the project team by the contract.

Project Procurement Management processes:

1. Plan Procurements: The process of documenting project purchasing decisions, specifying the approach, and identifying potential sellers
2. Conduct Procurements: The process of obtaining seller responses, selecting a seller, and awarding a contract
3. Administer Procurements: The process of managing procurement relationships, monitoring contract performance, and making changes and corrections as needed.
4. Close Procurements: The process of completing each project procurement.

The Project Procurement Management processes involve contracts that are legal documents between a buyer and a seller.

A contract represents a mutually binding agreement that obligates the seller to provide the specified products, services, or results, and obligates the buyer to provide monetary or other valuable consideration.

The agreement can be simple or complex, and can reflect the simplicity or complexity of the deliverables and required effort.

A procurement contract will include terms and conditions, and may incorporate other items that the buyer specifies to establish what the seller is to perform or provide. It is the project management team's responsibility to make certain that all procurements meet the specific needs of the project while adhering to organizational procurement policies. Depending upon the application area, a contract can also be called an agreement, an understanding, a subcontract, or a purchase order. Most organizations will have documented policies and

procedures specifically defining the procurement rules and specifying who has authority to sign and administer such agreements on behalf of the organization.

Although all project documents are subject to some form of review and approval, the legally binding nature of a contract usually means that it will be subjected to a more extensive approval process.
In all cases, the primary focus of the review and approval process is to ensure that the contract language describes the products, services, or results that will satisfy the identified project need. The project management team may seek support early from specialists in contracting, purchasing, law, and technical disciplines. Such involvement can be mandated by an organization's policies.
The various activities involved in the Project Procurement Management processes form the life cycle of a contract. By actively managing the contract life cycle and carefully wording the terms and conditions of the procurements, some identifiable project risks can be avoided, mitigated, or transferred to a seller.
Entering into a contract for products or services is one method of allocating the responsibility for managing or sharing potential risks.
A complex project can involve managing multiple contracts or subcontracts simultaneously or in sequence. In such cases, each contract life cycle can end during any phase of the project life cycle.

Plan Procurements

Plan Procurements is the process of documenting project purchasing decisions, specifying the approach, and identifying potential sellers. It identifies those project needs which can best be, or must be, met by acquiring products, services, or results outside of the project organization, versus those project needs which can be accomplished by the protect team.
This process involves determining whether to acquire outside support and, if so what to acquire, how to acquire it, how much is needed, and when to acquire it. When the project obtains products, services, and results required for project performance from outside the performing organization, the processes from Plan Procurements through Close Procurements are performed for each item to be acquired.
The Plan Procurements process also includes consideration of potential sellers, particularly if the buyer wishes to exercise some degree of influence or control over acquisition decisions. Consideration should also be given to who is responsible for obtaining or holding any relevant permits and professional licenses that may be required by legislation, regulation, or organizational policy in executing the project.

Plan Procurements: Inputs

1. Scope Baseline
2. Requirements Documentation
3. Teaming Agreements
4. Risk Register
5. Risk-Related Contract Decisions
6. Activity Resource Requirements
7. Project Schedule
8. Activity Cost Estimates
9. Cost Performance Baseline
10. Enterprise Environmental Factors
11. Organizational Process Assets

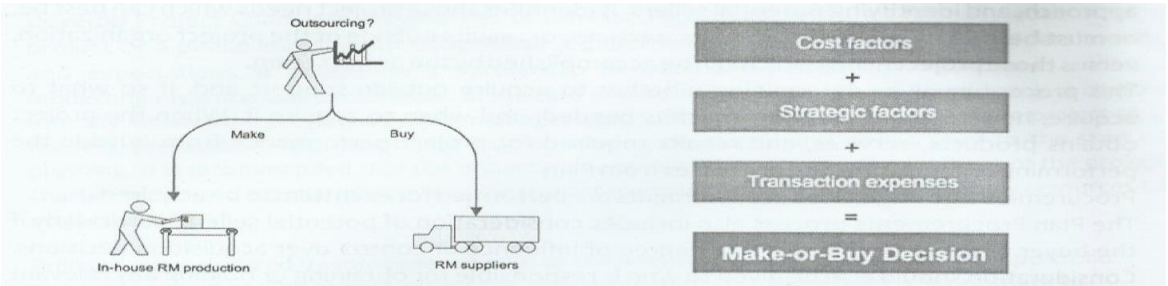
Plan Procurements: Tools and Techniques

1. Make-or-Buy Analysis

A make-or-buy analysis is a general management technique used to determine whether particular work can best be accomplished by the project team or must be purchased from outside sources.

Sometimes a capability may exist within the project organization, but may be committed to working on other projects, in which case the project may need to source such effort from outside the organization in order to meet its schedule commitments.

Budget constraints may influence make-or-buy decisions. If a buy decision is to be made, then a further decision of whether to purchase or lease is also made. A make-or-buy analysis should consider all related costs; both direct costs as well as indirect support costs. For example, the buy-side of the analysis includes both the actual out-of-pocket costs to purchase the product, as well as the indirect costs of supporting the purchasing process and purchased item.



	Alternative 1 (Make Internally)		Alternative 2 (Buy from Outside)		Differential Amount	*Alternative 1 Is*
Variable costs						
Cost to buy from outside	$ 00		$ 700,000 [a]	=	$(700,000)	Lower
Direct materials	300,000	–	0	=	300,000	Higher
Direct labor	160,000	–	0	=	160,000	Higher
Manufacturing overhead	100,000	–	0	=	100,000	Higher
Fixed costs						
Factory equipment lease	110,000	–	110,000	=	0	
Factory building rent	290,000	–	290,000	=	0	
Production supervisors' salaries	140,000	–	90,000 [b]	=	50,000	Higher
Total production costs	$1,100,000	–	$1,190,000	=	$ (90,000)	Lower

1. Expert judgment

Expert technical judgment will often be used to assess the inputs to and outputs from this process.

Expert purchasing judgment can also be used to develop or modify the criteria that will be used to evaluate seller proposals. Expert legal judgment may involve the services of legal staff to assist with unique procurement issues, terms, and conditions. Such judgment, including business and technical expertise, can be applied to both the technical details of the acquired products, services, or results and to various aspects of the procurement management processes.

2. Contract Types

The risk shared between the buyer and seller is determined by the contract type. Although the firm-fixed-price type of contractual arrangement is typically the preferred type which is encouraged and often demanded by most organizations, there are times when another contract form may be in the best interests of the project. If a contract type other than fixed- price is intended, it is incumbent on the project team to justify its use. The type of contract to be used and the specific contract terms and conditions fix the degree of risk being assumed by the buyer and seller.

All legal contractual relationships generally fall into one of two broad families, either fixed- price or cost reimbursable. Also, there is a third hybrid-type commonly in use called the time and materials contract. The more popular of the contract types in use are discussed below as discrete types, but in practice it is not unusual to combine one or more types into a single procurement.

a. **Fixed-price contracts.** This category of contracts involves setting a fixed total price for a defined product or service to be provided. Fixed-price contracts may also incorporate financial incentives for achieving or exceeding selected project objectives, such as schedule delivery dates, cost and technical performance, or anything that can be quantified and subsequently measured. Sellers under fixed-price contracts are legally obligated to complete such contracts, with possible financial damages if they do not. Under the fixed-price arrangement, buyers must precisely specify the product or services being procured. Changes in scope can be accommodated, but generally at an increase in contract price.

✓ **Firm Fixed Price Contracts (FFP).** The most commonly used contract type is the FFP. It is favored by most buying organizations because the price for goods is set at the outset and not subject to change unless the scope of work changes. Any cost increase due to adverse performance is the responsibility of

the seller, who is obligated to complete the effort. Under the FFP contract, the buyer must precisely specify the product or services to be procured, and any changes to the procurement specification can increase the costs to the buyer.

✓ **Fixed Price incentive Fee Contracts (FPIF).** This fixed-price arrangement gives the buyer and seller some flexibility and that it allows for deviation from performance, with financial incentives tied to achieving; to metrics. Typically such financial incentives are related to cost, schedule, or technical performance of the seller. Performance targets are established at the outset, the final contract price is determined after completion of all work based on the seller's performance, Under FP contracts, a price ceiling is set, and all costs above the price ceiling are the responsibility of the seller, who is obligated to complete the work.

✓ Fixed Price with Economic Price Adjustment Contracts (FP-EPA). This contract type is used whenever the seller performance period spans a considerable period of years, as is desired with many long-term relationships. It is a fixed-price contract, but with a special provision allowing for pre-defined final adjustments to the contract price due to changed conditions, such as inflation changes, or cost increases (or decreases) for specific commodities. The EPA clause must relate to some reliable financial index which is used to precisely adjust the final price. The FP-EPA contract is intended to protect both buyer and seller from external conditions beyond their control.

b. **Cost-reimbursable contracts.** This category of contract involves payments (cost reimbursements) to the seller for all legitimate actual costs incurred for contracts work, plus a free resenting seller profit. Cost-reimbursable contracts may also include financial incentive clauses whenever the seller exceeds, or falls below, defined objectives such as costs, schedule, or technical performance targets. Three of the more common types of cost-reimbursable contracts in use are Cost Plus Fixed Fee (CPFF), Cost Plus Incentive Fee (CPIF), and Cost Plus Award Fee (CPAF).
A cost-reimbursable contract gives the project flexibility to redirect a seller whenever the scope of work cannot be precisely defined at the start and needs to be altered, or when high risks may exist in the effort.

✓ Cost Plus Fixed Fee Contracts (CPFF). The seller is reimbursed for all allowable costs for performing the contract work, and receives a fixed fee payment calculated as a percentage of the initial estimated project costs. Fee is paid only for completed work and does not change due to seller performance. Fee amounts do not change unless the project scope changes.
✓ Cost Plus Incentive Fee Contracts (CPIF). The seller is reimbursed for all allowable costs for performing the contract work and receives a predetermined

incentive fee based upon achieving certain performance objectives as set forth in the contract. In CPIF contracts, if the final costs are less or greater than the original estimated costs, there the buyer and seller share costs from the departures based upon a pre-negotiated cost sharing formula, e.g., an 80/20 split over/under target costs based on the actual performance of the seller.

✓ Cost Plus Award Fee Contracts (CPAF).The seller is reimbursed for all legitimate costs, but the majority of the fee is only earned based on the satisfaction of certain broad subjective performance criteria defined and incorporated into the contract. The determination of fee is based solely on the subjective determination of seller performance by the buyer, and is generally not subject to appeals.

c. **Time and Material Contracts (T&M).** Time and material contracts are a hybrid type o contractual arrangement that contain aspects of both cost-reimbursable and fixed-price contracts. They are often used for staff augmentation, acquisition of experts, and any outside support when a precise statement of work cannot be quickly prescribed.

These types of contracts resemble cost-reimbursable contracts in that they can be left open ended and may be subject to a cost increase for the buyer. The full value of the agreement and the exact quantity of items to be delivered may not be defined by the buyer at the time of the contract award. Thus, T&M contracts can increase in contract value as if they were cost- reimbursable contracts. Many organizations require not-to-exceed values and time limits placed in a T&M contracts to prevent unlimited cost growth. Conversely, T&M contracts can also resemble fixed unit price arrangements when certain parameters are specified in the contract. Unit labor or material rates can be preset by the buyer and seller, including seller profit, when both parties agree on the values for specific resource categories, such as senior engineers at specified rates per hour, or categories of materials at specified rates per unit.

Cost Reimbursable (CR)	Known Scope	Share of Risk	Incentive for Meeting Milestones	Predictability of Cost
CR with Fixed Fee	Medium	Mostly Project	Low	Medium-high
CR with Percentage Fee	Medium	Mostly Project	Low	Medium-high
CR with Incentive Fee	Medium	Mostly Project	High	Medium
CR with Award Fee	Medium	Mostly Project	High	Medium
Time and Materials	Low	All Project	Low	Low

Plan Procurements: Outputs

1. Procurement Management Plan
2. Procurement Statements of Work
3. Make-or-Buy Decisions
4. Procurement Documents
5. Source Selection Criteria
6. Change Requests

Conduct Procurements

Conduct Procurements is the process of obtaining seller responses, selecting a seller, and awarding a contract. In this process, the team will receive bids or proposals and will apply previously defined selection criteria to select one or more sellers who are qualified to perform the work and acceptable as a seller.

On major procurement items, the overall process of requesting responses from sellers and evaluating those responses can be repeated. A short list of qualified sellers can be established based on a preliminary proposal.

Conduct Procurements: Inputs

1. Project Management Plan
2. Procurement Documents
3. Source Selection Criteria
4. Qualified Seller List Seller Proposals
5. Project Documents
6. Make-or-Buy Decisions
7. Teaming Agreements
8. Organizational Process Assets

Conduct Procurements: Tools and Techniques

1. Bidder Conferences

Bidder conferences (sometimes called contractor conferences, vendor conferences, and pre bid conferences) are meetings between the buyer and all prospective sellers prior to submittal of a bid or proposal. They are used to ensure that all prospective sellers have a clear and common understanding of the procurement (both technical and contractual requirements), and that no bidders receive preferential treatment. Responses to questions can be incorporated into the procurement documents as amendments. To be fair, buyers must take great care to ensure that all prospective sellers hear every question from any individual prospective seller and every answer from the buyer.

2. Proposal Evaluation Techniques

On complex procurements, where source selection will be made based on seller responses to previously defined weighted criteria, a formal evaluation review process will be defined by the buyer's procurement policies. The

evaluation committee will make their selection for approval by management prior to the award.

3. Independent Estimates

For many procurement items, the procuring organization may elect to either prepare its own independent estimate, or have an estimate of costs prepared by an outside professional estimator, to serve as a benchmark on proposed responses. Significant differences in cost estimates can be an indication that the procurement statement of work was deficient, ambiguous, and! or that the prospective sellers either misunderstood or failed to respond fully to the procurement statement of work.

4. Expert Judgment

Expert judgment may be used in evaluating seller proposals. The evaluation of proposals may be accomplished by a multi-discipline review team with expertise in each of the areas covered by the procurement documents and proposed contract. This can include expertise from functional disciplines such as contracting, legal, finance, accounting, engineering, design, research, development, sales, and manufacturing.

5. Advertising

Existing lists of potential sellers can often be expanded by placing advertisements in general circulation publications such as selected newspapers or in specialty trade publications. Some government jurisdictions require public advertising of certain types of procurement items, and most government jurisdictions require public advertising of pending government contracts.

6. Internet Search

The internet has a major influence on most project procurements and supply chain acquisitions in organizations. While many commodities, components, and off-the-shelf-items can be quickly located and secured at a fixed-price on the internet, the high-risk, highly complex, procurement effort that must be closely monitored cannot be obtained by this means.

7. Procurement negotiations

Negotiations clarify the structure, requirements and other terms of the purchases so that mutual agreement can be reached prior to signing the contract. Final contract language reflects all agreements reached. Subjects covered should include responsibilities, authority to make changes, applicable terms and governing law, technical and business management approaches, proprietary rights, contract financing, technical solutions, overall schedule, payments, and price. Negotiations conclude with a contract document that can be executed by both buyer and seller.

Conduct Procurements: Outputs

1. Selected Sellers
2. Procurement Contract Award

The major components in a contract document will vary, but will sometimes include the following:

- ✓ Statement of work or deliverables,
- ✓ Schedule baseline,
- ✓ Performance reporting,
- ✓ Period of performance,
- ✓ Roles and responsibilities,
- ✓ Seller's place of performance,
- ✓ Pricing,
- ✓ Payment terms,
- ✓ Place of delivery,
- ✓ Inspection and acceptance criteria,
- ✓ Warranty,
- ✓ Product support,
- ✓ Limitation of liability,
- ✓ Fees and retainage,
- ✓ Penalties,
- ✓ Incentives,
- ✓ Insurance and performance bonds,
- ✓ Subordinate subcontractor approvals,
- ✓ Change request handling, and
- ✓ Termination and alternative dispute resolution (ADR) mechanisms. The ADR method can be decided in advance as a part of the procurement award.

3. Resource Calendars
4. Change Requests
5. Project Management Plan updates
6. Project Document updates

Administer Procurements

Administer Procurements is the process of managing procurement relationships, monitoring contract performance, and making changes and corrections as needed.

Both the buyer and the seller will administer the procurement contract for similar purposes. Each must ensure that both parties meet their contractual obligations and that their own legal rights are protected. The Administer Procurements process ensures that the seller performance meets procurement requirements and that the buyer performs according to the terms of the legal contract. The legal nature of the contractual relationship makes it imperative that the project management team is aware of the legal implications of actions

taken when administering any procurement. On larger projects with multiple providers, a key aspect of contract administration is managing interfaces among the various providers. Due to varying organizational structures, many organizations treat contract administration as an administrative function separate from the project organization. While a procurement administrator may be on the project team, this individual typically reports to a supervisor from a different department. This is usually true if the performing organization is also the seller of the project to an external customer.
Administer Procurements includes application of the appropriate project management processes to the contractual relationship(s) and integration of the outputs from these processes into the overall management of the project. This integration will often occur at multiple levels when there are multiple sellers and multiple products, services, or results involved. The project management processes that are applied may include, but are not limited to:

Administer Procurements: Inputs

1. Procurement Documents
2. Project Management Plan
3. Contract
4. Performance Reports
5. Approved Change Requests
6. Work Performance Information

Administer Procurements: Tools and Techniques

1. Contract Change Control System

A contract change control system defines the process by which the procurement C2fl be modified. It includes the paperwork, tracking systems, dispute resolution procedures, and approval levels necessary for authorizing changes. The contract change control system is integrated with the integrated change control system.

2. Procurement Performance Reviews

A procurement performance review is a structured review of the seller's progress to deliver project scope and quality, within cost and on schedule, as compared to the contract. It Can include a review of seller-prepared documentation and buyer inspections, as well as quality audits conducted during seller's execution of the work. The objective of a performance review is to identify performance successes or failures; progress with respect to the procurement statement of work, and contract non-compliance, which allow the buyer to quantify the set er's demonstrated ability or inability to perform work. Such reviews may take place as a part of project status reviews which would include key suppliers.

3. Inspections and Audits

Inspections and audits required by the buyer and supported by the seller as specified in the procurement contract can be conducted during execution of the project to verify compliance in the seller's work processes or deliverables. If authorized by contract, some inspection and audit teams can include buyer procurement personnel.

4. Performance Reporting

Performance reporting provides management with information about how effectively the seller is achieving the contractual objectives.

5. Payment Systems

Payments to the seller are typically processed by the accounts payable system of the buyer after certification of satisfactory work by an authorized person on the project team. All payments should be made and documented in strict accordance with the terms of the contract.

6. Claims Administration

Contested changes and potential constructive changes are those requested changes where the buyer and seller cannot reach an agreement on compensation for the change, or cannot agree that a change has occurred. These contested changes are variously called claims, disputes, or appeals.

Claims are documented, processed, monitored, and managed throughout the contract life cycle, usually in accordance with the terms of the contract. If the part themselves do not resolve a claim, it may have to be handled in accordance with alternative dispute resolution (ADR) typically following procedures established in the contract. Settlement of all claims and disputes through negotiation is the preferred method.

7. Records Management System

A records management system is used by the project manager to manage contract and procurement documentation and records. It consists of a specific set of processes, related control functions, and automation tools that are consolidated and combined as part of thc project management information system. The system contains a retrievable archive of contract documents and correspondence.

Administer Procurements: Outputs

1. Procurement Documentation
2. Organizational Process Assets updates
3. Change Requests
4. Project Management Plan updates

Close Procurements

Close Procurements is the process of completing each project. It supports the Close Project or Phase process, since it involves verification that all work and deliverables were acceptable. The Close Procurements process also involves administrative activities such as finalizing open claims, updating records to reflect final results and archiving such information for future use. Close Procurements addresses each contract applicable to the project or a project phase. In multi-phase projects, the term of a contract may only be applicable to a given phase of the project. In these cases, the Close Procurements process closes the procurement(s) applicable to that phase of the project. Unresolved claims may be subject to litigation after closure.

The contract terms and conditions can prescribe specific procedures for contract closure.

Early termination of a contract is a special case of procurement closure that can result from a mutual agreement of both parties, from the default of one party, or for convenience of the buyer if provided for in the contract. The rights and responsibilities of the parties in the event of an early termination are contained in a terminations clause of the contract. Based upon those procurement terms and conditions, the buyer may have the right to terminate the whole contract or a portion of the contract, at any time for cause or convenience.

Close Procurements: Inputs

1. Project Management Plan
2. Procurement Documentation

Close Procurements: Tools and Techniques

1. Procurement Audits

A procurement audit is a structured review of the procurement process originating from the Plan Procurements process through Administer Procurements. The objective of a procurement audit is to identify successes and failures that warrant recognition in the preparation or administration of other procurement contracts on4he project, or on other projects within the performing organization.

2. Negotiated Settlements

In all procurement relationships the final equitable settlement of all outstanding issues, claims, and disputes by negotiation is a primary goal. Whenever settlement cannot be achieved through direct negotiation, some form of alternative dispute resolution (ADR) including mediation or arbitration may be explored. When all else fails, litigation in the courts is the least desirable option.

3. Records Management System

Close Procurements: Outputs

1. Closed Procurements
2. Organizational Process Assets updates

Chapter 4

Project Stakeholders Management

Project Stakeholder management includes the processes required to identify the people, groups, ore organizations that could impact or be impacted by the project, to analyze stakeholders expectations and their impact on the project, and to develop appropriate management strategies for effective engaging stakeholders in the project decisions and execution.

Focus: Continuous communication with stakeholders to understand their needs and expectations, addressing isst.es as they occur, managing conflicting interests and fostering appropriate stakeholder engagement in project decisions and activities.

Project Stakeholders Management Processes include:

Identify Stakeholders: The process of identifying all people or organizations impacted by the project, and documenting relevant information regarding their interests, involvement, and impact on project success.

Plan Stakeholder Management: The process of developing appropriate a management strategies to effectively engage stakeholders throughout the project life cycle, based on the analysis of their needs, interests, and potential impact on project success.

Manage Stakeholder Engagement: The process of communicating and working with stakeholders to meet their needs/expectations, addressing issues as they occur T fostering appropriate stakeholder engagement in project activities throughout the project life cycle.

Control Stakeholder Engagement: the process of monitoring overall project stakeholder relationships and adjusting strategies and plans for engaging stakeholders.

Every project will have stakeholders who are impacted by or can impact the project in a positive way. While some stakeholders may have a limited ability to influence the project, others may have significant influence on the project and its expected outcomes.

Identify Stakeholders

Identify Stakeholders is the process of identifying all people, groups, or organizations that could impact the project or be impacted by a decision, activities or outcome of the project, and documenting relevant information regarding their interests, involvement, interdependencies, influence and potential impact on project success.

Most projects will have a large number of stakeholders. As the project manager’s time is limited and must be used as efficiently as possible, these stakeholders should be classified according to their interest, influence, and involvement in the project. This enables the project manager to focus on the relationships necessary to ensure the success of the project.

Identify Stakeholders: Inputs

- ✓ Project Charter
- ✓ Procurement Documents
- ✓ Enterprise Environmental Factors
- ✓ Organizational Process Assets

Identify Stakeholders: Tools and Techniques

1. Stakeholder Analysis

Stakeholder analysis is a technique of systematically gathering and analyzing quantitative and qualitative information to determine whose interests should be taken into account throughout the project.

It identifies the interests, expectations, and influence of the stakeholders and relates them to the purpose of the project. It also helps identify stakeholder relationships that c be leveraged to build coalitions and potential partnerships to enhance the project's chance of success.

Stakeholder analysis generally follows the steps described below:

Step 1: Identify all potential project stakeholders and relevant information, such as their roles, departments, interests, knowledge levels, expectations, and influence levels. Key stakeholders are usually easy to identify. They include anyone in a decision-making or management role who is impacted by the project outcome, such as the sponsor, the project manager, and the primary customer.

Identifying other stakeholders is usually done by interviewing identified stakeholders and expanding the list until all potential stakeholders are included.

Step 2: Identify the potential impact or support each stakeholder could generate, and classify them so as to define an approach strategy. In large stakeholder communities, it is important to prioritize the key stakeholders to ensure the efficient use of effort to communicate and manage their expectations. There are multiple classification models available including, but not limited to:

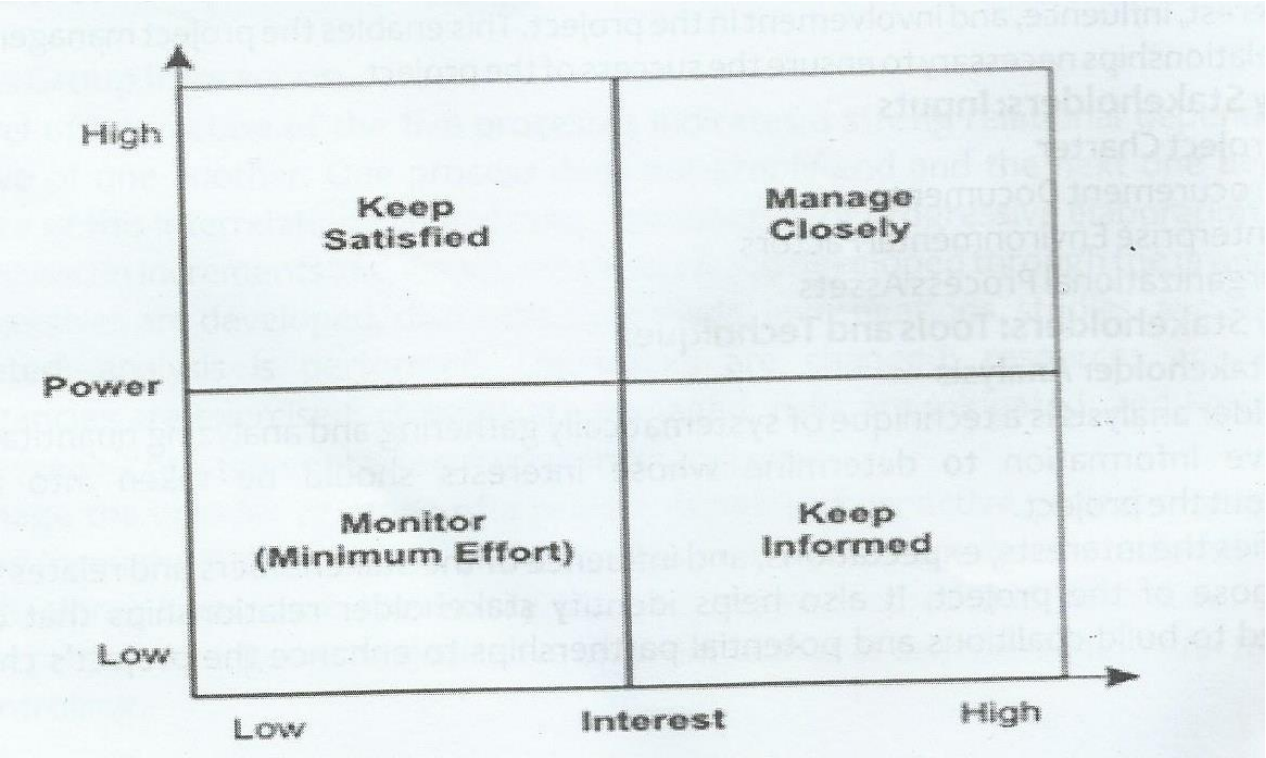
Power/interest grid, grouping the stakeholders based on their level of authority ("power") and their level or concern ("interest") regarding the project outcomes;

Power/influence grid, grouping the stakeholders based on their level of authority ("power") and their active involvement ("influence") in the project;

Influence/impact grid, grouping the stakeholders based on their active involvement ("influence") in the project and their ability to effect changes to the project's planning or execution ("impact");

Salience model, describing classes of stakeholders based on their power ability to impose their will), urgency (need for immediate attention), and legitimacy (their involvement is appropriate).

Step 3: Assess how key stakeholders are likely to react or respond in various situations, in order to plan how to influence them to enhance their support and mitigate potential negative impacts.



1. Expert judgment

To ensure comprehensive identification and listing of stakeholders, judgment and expertise should be sought from groups or individuals with specialized training or knowledge on the subject area such as:

- ✓ Senior management,
- ✓ Other units within the organization,
- ✓ Identified key stakeholders
- ✓ Project managers who have worked on projects in the same area (directly or through lessons learned),
- ✓ Subject matter experts (SM Es) in business or project area,
- ✓ Industry groups and consultants, and
- ✓ Professional and technical associations.

2. Meetings

Profile analysis meetings are project meetings designed to develop an estimate of major project stakeholders and they can be used to exchange and analyze information about roles, interest, knowledge, and the overall position of each stakeholder facing the project.

Identify Stakeholders: Outputs

Stakeholder Register

Plan Stakeholder Management

Plan Stakeholder management is the process of developing appropriate management strategies to effectively engage stakeholders throughout the project life cycle, based on the analysis of their needs, interests and potential impact on the project success.

Plan Stakeholder Management: Input

- ✓ Project Management Plan
- ✓ Stakeholder Register
- ✓ Enterprise Environmental factor
- ✓ Organizational process Assets

Plan Stakeholder Management: Tools and Technique

1. Expert judgement

Based on the project objectives, project manager should apply expert judgment to decide upon the level of engagement required at each stage of the project from each stakeholder.

2. Meetings

Meetings should be held with experts and project team to define the required engagement levels of all stakeholders.

3. Analytical Technique

The current engagement level of all stakeholders needs to be compared to the planned engagement levels required successful project completion. Stakeholder engagement the life cycle of the project is critical to the project success.

Engagement Level

- ✓ **Unaware:** Unaware of project and potential impacts
- ✓ **Resistant:** Aware of project and potential impacts and resistant change
- ✓ **Neutral:** Aware of project yet neither supportive nor resistant
- ✓ **Supportive:** Aware of project and potential impacts and supportive to change

Plan Stakeholder Management: Output

- ✓ Stakeholder management plan
- ✓ Project Management Update

Manage Stakeholder Engagement

Manage Stakeholder Engagement is the process of communicating and working with stakeholders to meet their needs! Expectations, addressing issues as they occur, and foster appropriate stakeholder engagement in project activities throughout the project life cycle. This is done in order to allow the project manager increase support and minimize resistance from stakeholders, significantly increasing the chances to achieve project success. This process involves:

1. Engaging stakeholders at appropriate project stages to obtain or confirm their continues commitment to the success of the project
2. Addressing potential concern that have not yet become issues and anticipating future problems that may be raised by stakeholders.
3. Clarifying and resolving issues that have been identified.

Manage Stakeholder Engagement: Input

- ✓ Stakeholder management plan
- ✓ Communication Management plan
- ✓ Change Log
- ✓ Organization process Assets

Manage Stakeholder Engagement: Tools and Techniques

1. Communication Methods

The methods of communication identified for each stakeholder in the communications management plan are utilized during stakeholder management.

2. Interpersonal Skills

The project manager applies appropriate interpersonal skills to manage stakeholder expectations.

For example:

- ✓ Building trust,
- ✓ Resolving conflict,
- ✓ Active listening, and
- ✓ Overcoming resistance to change.

3. Management Skills

Management is the act of directing and controlling a group of people for the purpose of coordinating and harmonizing the group towards accomplishing a goal beyond the scope of individual effort.

Management skills used by the project manager may include:

- ✓ Presentation skills
- ✓ Negotiating
- ✓ Writing skills
- ✓ Public speaking

Manage Stakeholder Engagement: Outputs

- ✓ Issue log
- ✓ Change Requests
- ✓ Project Management Plan updates
- ✓ Project Document updates
- ✓ Organizational Process Assets updates

Control Stakeholder Engagement

Control stakeholder engagement is the process of monitoring overall project stakeholder relationship and adjusting strategies and plans for engaging stakeholders.

The Key benefit of this process is that it will maintain or increase the efficiency and effectiveness of stakeholder engagement activities as the project evolve and its environment changes.

Control Stakeholder Engagement: input

- ✓ Project Management Plan
- ✓ Issue log
- ✓ Work Performance date
- ✓ Project Document

Control Stakeholder Engagement: Tools and Techniques

1. **Information Management System**
   An information system provides a standard tool for the project manager to capture, store and distribute information to the stakeholders. About the project cost, schedule progress and performance.
2. **Expert Judgment**
   To ensure comprehensive identification and listing of new stakeholders, reassessment of current stakeholders can be performed. Input should be sought from groups or individuals with specialized training or subject matter expertise.
3. **Meetings**

Control Stakeholder Engagement: Output

- ✓ Work performance information
- ✓ Change Request
- ✓ Project management plan update
- ✓ Project Document update
- ✓ Organizational process update