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*System error: An investigative study on the implementation
of the eUP project in the University of the Philippines*

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SYSTEM ERROR:
AN INVESTIGATIVE STUDY ON THE IMPLEMENTATION
OF THE EUP PROJECT IN THE UNIVERSITY OF THE PHILIPPINES

by

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We live in interesting times. This narrative is only a part of it. Thank you for helping us tell it.

DEDICATION

To the university's talents,
whose excellence and selflessness
are what make UP great

ABSTRACT

Bautista, R.J.C., and Subingsubing, K.Z.A. (2016). *System Error: An Investigative Study on the Implementation of the eUP project in the University of the Philippines*.

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This paper probed the implementation of the state-funded eUP project in the University of the Philippines (UP), which was promised to streamline bureaucratic processes by integrating all of the university's data into one information management system. Guided by the DeLone and McLean's Model of Information Systems Success and Open Systems Theory, the report assessed the efficacy and efficiency of the project through validated metrics in enterprise resource planning (ERP) implementation success.

Through extensive in-depth interviews and analyses of key project documents, the report found that the project's procurement activities violated Section 18 of the Government Procurement Reform Act by referring to ERP software Oracle in its terms of references.

While UP continues to invest in the modernization of its IT infrastructure, it remains heavily ill-prepared for the ambitious project. Poor project planning and management, and lack of or unclear administrative policies, caused severe delays and recurring glitches during the project's implementation, and instead aggravated the bureaucratic processes it sought to streamline. Furthermore, the impending termination of the university's legacy systems forced the exodus of disenfranchised talents.

The findings are in a four-part series written in a journalistic manner.

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CHAPTER I. INTRODUCTION

A. Background of the Study

The eUP project is the University of the Philippines' current program to unify and harmonize all of its information and communication technology (ICT) systems by 2016. According to incumbent University President Dr. Alfredo Pascual, the project is expected to "help promote the administrative efficiency of the university by speeding up academic and financial transactions, human resource operations, data collection, and report generation," thus creating an environment conducive for academic excellence.

Among the university's guiding principles stipulated under its charter, Republic Act 9500, are accessibility and responsiveness which emphasize the "breaking down" of bureaucratic walls and oneness through the creation of common standards of excellence, harmonized systems, and common and shared services across its eight constituent units (CUs).

So far, the university faces many challenges that stunt its growth as a leading figure in operational excellence: long queues during enrollment periods; slow, manual processing of transactions and documents; isolated information and communication systems across its CUs; inadequate ICT infrastructures; lack of or poor appreciation of ICT among teachers, students, and staff, among others.

As such, under Pascual's "UP Strategic Development Plan 2011-2017: The Path to Greatness" presented to the UP Board of Regents on Aug. 17, 2011, the university shall conduct a P752 million program to modernize its ICT capabilities starting in 2012.

The eUP project has five components: 1. policy formulation, organization, and mobilization, or the creation of system-wide policies on the acquisition and utilization of

ICT infrastructure and a University-wide ICT organization; 2. benchmarking and ICT audit, or the identification and audit of best ICT practices around the world; 3. acquisition/development and installation of appropriate information systems; 4. ICT infrastructure development; and 5. ICT competency building.

In April 2012, the university bidded out the system integrator for five of its information systems in accordance with the third component. These information systems were:

1. Student Academic Information System (SAIS). SAIS will process, update, and display student-related data needs, such as admissions, enrollment, advising, billing, and gradebook assignments.
2. Financial Management Information System (FMIS). FMIS will consolidate financial information used by various accounting and other offices across the university. It will also automate data entry to the generation of financial reports to ensure greater efficiency.
3. Human Resource Information System (HRIS). HRIS can simplify employee transactions and automate the management, tracking, and monitoring of employee data, such as attendance, benefits, leave credits, and performance monitoring.
4. Supplies, Procurement, and Campus Management Information System (SPCMIS). To be integrated in the FMIS.
5. Executive Information System (EIS). To be integrated in the SAIS, FMIS, and HRIS.

The Terms of Reference for the Procurement of Products and Services for Key Components of the eUP project specified that the purchase of these systems should not

exceed P135 million, while the software maintenance of such systems should not exceed P9.02 million starting on the second year. The University required the system integrator to use enterprise resource planning (ERP) systems from the American vendor Oracle Inc. for the eUP project's core information systems.

During the kick-off, eUP named Smart Communications as one of its major partners. A month later, ePLDT, a subsidiary of telecommunications giant Philippine Long Distance Company (PLDT) and sister company to Smart, won as sole bidder to integrate eUP's core systems throughout the UP System.

According to Pascual, the choice of Oracle's enterprise resource planning (ERP) systems was a result of a comprehensive ICT benchmarking study of various entities and institutions around the world—one that has yet to become publicly available to its stakeholders. These institutions, Pascual said, were the National University of Singapore and Ngee Ann University, which utilize Oracle ERPs.

At present, Diliman is implementing its Computerized Registration System (CRS), which in function is equivalent to SAIS. Critics of eUP have pointed out that replacing an already stable system will bring more costs to a tightly funded university.

In response, Pascual said it “does not make sense anymore for (UP) to develop its own software” when off-the-shelf systems are already adopted as best practice by other entities.

According to eUP's initial timeline, which was presented by UP Vice President for Planning and Development Dr. Elvira Zamora during its kick-off on March 12, 2012, the project was expected to launch in UP Manila and UP Open University in April 2012, followed by UP Los Baños, Diliman, and Baguio a month after.

By September 2012, initial modules of the various information systems (SAIS, FMIS, HRIS and SPCMIS) were expected to roll out to the various CUs in three phases, culminating with SAIS going live in UP Diliman, Baguio, Visayas, Mindanao and Cebu in November 2013. The project is expected to be fully functional by the end of Pascual's term in 2016.

While certain systems are already live in other CUs, implementation of Pascual's flagship project is still far from complete. Most CUs have yet to see the information systems. CUs such as UP Manila and Baguio that are already using SAIS, for example, report that the systems are bogged down by technical glitches and flaws in the module's design. In the case of UP Manila, for instance, glitches in the classification of student year levels prompted the administration to repeat the entire enrolment process.

Despite nearly four years in the making, the university has not released any publicly available progress report nor expenditure breakdown of the eUP program, prompting several forums and discussions among students and faculty about the costs and consequences of Pascual's touted legacy project.

B. Statement of the Problem and Objectives

Problem Statement

The University of the Philippines needs an efficient and unified ICT system to manage its ever-growing population's data and affairs. However, the efficiency and efficacy of the multi-million eUP project is yet to be seen as glitches and inaccurate prediction and coordination of necessary tasks hound its delayed implementation.

In particular, the study poses the following questions:

- What is the current capability of UP's technical and software development resources in every constituent unit?
- How did the university determine its ICT needs and capabilities to come up with a relevant ICT project?
- How has the current progress of the eUP project improved, if applicable, the bureaucratic processes in the university?
- How has the University strengthened its ICT infrastructure to support the eUP project?
- What were the factors behind the delayed full implementation of the eUP project?
- What difficulties did CUs face in the implementation of the eUP project?
- Is the cost of customizing and modifying eUP's core systems to suit the university's needs less than the cost of developing a homegrown information database or open-sourced systems?
- Was the budget earmarked for the eUP project prudently spent?

General Objective

To determine the optimal use of the university's resources—time, budget, and manpower—in implementing eUP, as well as establish the effect of the project on the university's constituents and homegrown ICT systems.

Specific Objectives

- To examine eUP's implementation progress in the university and the reasons behind its delayed implementation
- To assess the efficiency and efficacy of rolled-out eUP systems and databases as compared to existing in-house developments, such as CRS

- To analyze the costs and benefits of using off-the-shelf systems such as Oracle over open-sourced technologies or in-house ICT developments
- To determine the consequences brought by the project to UP's homegrown ICT initiatives

C. Significance of the Study

The University of the Philippines perennially faces the lack of state support in its academic endeavors every year. Since 2010, the premier state university receives an average of only half its proposed budget annually, prompting it to forego several projects or launch several income-generating projects that affect its public character.

Despite the university's tight budget, the Pascual administration has managed to shell out more than P750 million to finance its flagship project, eUP. As public interest in eUP grows during the final months of Pascual's term, a journalistic study may help shed light on the otherwise underreported project. As public watchdogs and public stewards, this study's researchers are compelled to assess the efficiency and efficacy of this big-ticket project on behalf of its largest benefactor: the people.

D. Scope and Limitations of the Study

The study determined the effects of the eUP project, since its implementation in 2012 to present, on the university's constituents, homegrown ICT systems and resources.

Out of the 12 major information systems being developed under the eUP program, the study focused on eUP's five core systems (SAIS, HRIS, FMIS, EIS, and SPCMIS) vis-à-vis its equivalent information databases currently existing in the UP system. This study did not delve in the other seven as these have yet to be developed by the eUP team.

Since the program is system-wide, the researchers also studied its current implementation progress in all eight CUs, as well as the effect of the project's changes on UP's existing homegrown systems developed in each campus. The report compared the ICT databases on the basis of financial feasibility, technical efficiency, and practicality to the university's needs and resources.

Lastly, this study discussed alternative implementation and action plans to the eUP project. The researchers explored initiatives done by UP's own students and faculty as well as noncommercial open-sourced technologies believed to cost less than ERPs sold in the market.

CHAPTER II. REVIEW OF RELATED LITERATURE

This chapter begins with a discussion on the history of enterprise resource planning projects abroad and studies on ERP successes and failures before looking into reports done on the eUP project and its information systems. This will help the reader understand the context of the project and comprehend the more complex concepts behind it.

A. Critical Success Factors in ERP Implementation

In this age of information, harnessing technology to harmonize and organize data is an imperative for any public or private institution.

With 54,000 students, 5,400 professors, and 8,800 administrative staff, the University of the Philippines needs an efficient management information system (MIS) to securely store its constituents' information and effectively utilize it in their affairs. An MIS "consists of an information technology infrastructure, application systems, and personnel that employ information technology to deliver information and communication services for transaction processing or operations and administration or management of an organization" (Davis, 2000).

The eUP project uses five information systems to manage the university's data: the Financial Management and Information System (FMIS), Student Academic Information System (SAIS), Human Resources Information System (HRIS), Supplies, Property, and Campus Management Information System (SPCMIS), and the Executive Information System (EIS). These are off-the-shelf enterprise resource planning (ERP) systems sold by Oracle. ERPs are designed to "integrate and streamline internal processes

by providing a suite of software modules that cover all functional areas of a business” (Koch, 2003, quoted in Finney and Corbett, 2007).

In essence, ERP systems integrate all systems of various departments and functions into a single computer system based on a single database to ease exchange of data and communication among departments (Aldammas and Al-Mudimigh, 2011). Such function is integral in advancing organizational efficiency in institutions, as they are able to provide information in a standardized, centralized, and cost-efficient manner (Olson, Chae, & Sheu, 2005).

However, ERP implementation is a huge and complex undertaking that needs careful planning and execution to ensure its successful implementation (Aldammas and Al-Mudimigh, 2011). ERP projects have the reputation of being “notoriously oversold and underdelivered” (Millman, 2004, cited in Olson, Chae, & Sheu, 2005, p. 9).

Four metrics can be used to determine the success of an ERP project (Schniederjans and Yadav, 2012):

1. Reduced cost. There must be a costs/benefits assessment and perceived financial costs to gauge the success of an ERP (p. 374). The integration of business functions should result in a significant operating and maintenance cost reduction.
2. Time allotted to the project. The project must be done within its projected time frame.
3. Performance of the system during implementation phase. The project must be done on time and within the budget. ERP architecture should be well-configured and fitted to the institution’s needs to ensure operability. Cross-functional coordination among organizations is also important to align interests and goals.

Users and developers must also be well-trained in the system to increase competitive advantages.

4. Benefits accrued to the organization due to implementation. The system must improve information transparency. It must also yield internal and external benefits such as faster information transfer, reduced transportation and logistics costs, increased responsiveness to customers, and greater flexibility and productivity (p. 368). It should also ensure that routine jobs can be automated by the system to aid processing and minimize human error.

Further literature has also discussed critical success factors (CSFs) in ERPs, which Rabaa'i (2009) defined as "a set of activities that need special considerations continual attention for planning for and implementing of an ERP system."

While the literature has been mostly fragmented, Rabaa'i identified and discussed the top 12 most cited CSFs from previous studies:

1. Top management commitment and support. ERP implementations must be viewed as a priority and a commitment by top management, by showing strong leadership, involving themselves in strategic planning, and working towards achieving success.
2. Change management. Change management strategies, such as reengineering or development of new business processes, are essential to for an institution to adapt and deploy ERP systems into its work processes.
3. Project management. An effective project management must define clear objectives, adhere to work plans and timelines, and provide adequate support and resources to ensure implementation success.

4. Business process re-engineering (BPR) and system's customization. According to Shehab et al. (2004, cited in Rabaa'i, 2009), there are two ways by which an institution may implement ERPs: by reengineering business processes to fit the functionality of the software, or by customizing the software to fit the organizational structure.
5. Training. Staff and employees must be trained on the new ERP systems so that they could understand how the systems work and how they may use these systems to aid their work.
6. ERP team composition. There must be a solid core team comprised of the organization's best and brightest individuals. They must have sound technical and business knowledge, as well as commitment to the project, to ensure the project's success.
7. Visioning and planning. Clear objectives, goals and visions, project requirements, and comprehensive planning should be developed within organizational goals to maximize ERP implementation.
8. Consultant selection and relationship. Knowledge transfer from consultants to the staff is essential to decrease vendor dependency. Moreover, they can also help staff the team, be the prime contractors, as well as audit the project.
9. Communication plan. According to Mendel (cited in Rabaa'i, 2009), not only the top management, but the whole organization, should be aware of the project's scope and the changes they bring into the workplace, so they may have a picture of how it could benefit or affect the organization.

10. ERP system selection. Because the ERP system is essentially what the organization will work with, a detailed requirements specification for ERP software selection will help in choosing the ERP system that would best fit the organization's goals, visions, and resources.
11. ERP systems integration. Organizations must integrate the ERP systems fully into their work processes for them to maximize its benefits.
12. Post-implementation evaluation. There must be an allowance for post-implementation evaluation with the use of established metrics and performance measures.

It is thus critical that these CSFs be present at all stages of the ERP implementation process to maximize success.

B. ERP Implementation in Higher Education Institutions (HEIs)

According to Duderstadt et al. (2002, cited in Seo, 2013), rapid advances in information technology have a significant influence in university practices. For example, academic research and scholarship depend largely on virtual and digital libraries, "freeing the classroom from the constraints of space and time and enriching the learning of our students through access to original source materials" (Duderstadt et al., 2002, cited in Seo, 2013). Considering this, it is not surprising that HEIs have made significant investments in ERP implementation to achieve greater integration of data and to improve existing processes.

Within the university's context, successfully implementing an ERP system would mean the reduction of bureaucratic processes by providing its CUs a platform through which they may share data and information online smoothly. It would also ensure

interoperability among the Information and Communication Technology (ICT) systems and infrastructure across its eight constituent units (CUs).

According to a study conducted by Leo Zornada and Tamara Velkavrh (2005), the advantages of ERP systems in higher education institutions include: 1. Improved information access for planning and managing the institution; 2. Improved services for the faculty, students and employees; 3. Lower business risks; and 4. Increased income and decreased expenses due to improved efficiency.

ERP systems would also provide these institutions a competitive advantage as they are able to provide up-to-date information not only to the administration but also for institutions that constantly interact with it (Zornada and Velkavrh, 2005).

During the last few years, studies have shown that HEIs have made significant investments in ERP implementation, to which ERP vendors have also responded by creating student management software as were the cases in SAP and Oracle, two of the world's leading ERP vendors (Seo, 2013).

Studies have shown, however, that 60 to 80 percent of higher education contexts of ERP implementation failed to meet expected outcomes (Seo, 2013). Cleveland State University, for example, was nearly forced to take legal action against its ERP vendor in 1998 after it failed to deliver nearly half the students' requests despite rising costs.

Ohio State University, on the other hand, exceeded its projected costs of implementing integral information systems from \$53 million to \$85 million, while Minnesota University went from \$38 million to \$60 million (Zornada and Velkavrh, 2005).

Meanwhile, an ugly legal dispute between Oracle and Montclair State University also emerged in 2011 after the university refused to pay \$8 million more than the agreed-upon implementation fee after Oracle missed a series of deadlines, effectively terminating the project in November 2011 (Henschen, 2013). Oracle, however, pinned the blame on the state university by saying MSU was "motivated by their own agenda and fearful of being blamed for delays, escalated manageable differences into major disputes" (2013).

Most ERP literature states that the reason for such failures stems from the differences between "traditional" systems analysis and design projects, which include the scale, complexity, organizational impact, and implementation costs (Grabski et al., n.d.).

Furthermore, ERP projects almost always require reengineering business practices, as the organization often opts to adopt to the "best practices" inherent in the software rather than changing the software to match current business processes (Grabski et al., n.d.). As such, the numerous customizations needed to tailor-fit such software into HEI processes may increase costs, risks of failure, and delays in the implementation process (Seo, 2013).

In addition, ERPs often require retraining for personnel and shifts in organizational computing paradigms. Helo et al. (cited in Seo, 2013) summarized it thus:

Unlike other information systems, the major problems of ERP implementation are not technologically related issues such as technological complexity, compatibility, standardization, etc. but mostly [about] organization and human related issues like resistance to change, organizational culture, incompatible business processes, project mismanagement, top management commitment. (p. 10)

Seo (2013) also pointed out that there may also be resistance to ERPs at the university level because of the holistic change in organizational culture it presents. He also adds that standardization and integration, both key features of ERP systems, may also limit flexibility in university systems, which have unique work structures from corporate sectors.

C. Assessment of Risks and Controls

The risks associated with ERP implementation, therefore, must be identified and controls must then be put in place to meet maximum success capacity (Grabski et al., n.d.). In order to ascertain the costs and consequences of the eUP program in the university, there are six possible factors which constitute risks of ERP implementation:

- Lack of clarity on functional requirements. It is important to establish software and hardware necessities and desired system capabilities. Prototyping, use-cases, meetings and interviews should be done to ascertain the institution's needs. When certain functionalities may not be communicated well, repeated changes in goals and requirements will result in additional expenses (Ghosh, 2012).
- Lack of commitment from management. Ghosh (2012) found that the most successful ERP projects are led by team member who "has actively participated in the both the software selection and implementation efforts" (p. 127). Management should be knowledgeable on the scale and technicalities of the project to keep the project in the right direction.
- Inadequate training. In addition to implementation knowledge, ERP systems require a wide range of skills, including change management, risk management, as well as technical knowledge (Grabski et al., n.d.). Users of the ERP system

should be well-trained, while employees should be made familiar with the system's interface and functionalities so that they may be able to utilize the system.

- Improper package selection. Choosing the correct package is essential as the buyers have to make sure that the package satisfies their requirements and needs. Otherwise, they may not suit the needs of the institution and would incur additional costs to modify, repair, or customize the program (Ghosh, 2012). Moreover, the institution should develop a detailed requirements specification and conduct system testing, all the while monitoring the system's performance" (Grabski et al., n.d.).
- Miscalculations and expectations. An ERP system implementation involves relatively large expenditures for the acquisition of the hardware, software, implementation costs, consulting fees and training costs (Davenport, 2000, cited in Grabski et al., n.d.). There is a need to assess the timeframe by which the project is expected to be finished. If the expected date of completion is crossed, additional expenses may be incurred by the project (p. 128).
- Incompatibility with business projects. Ghosh (2012) stated that incompatibility stems from a poor understanding of the underlying processes of the ERP itself and that of the business. Gaps between software functions and organizational requirements can severely affect ERP performance.

D. Review of the eUP project

Not much has been published about the eUP project since its launching in 2012.

In August 2012, UP Diliman's official student publication, the *Philippine Collegian*,

released a news feature on the possible disenfranchisement of the faculty and students running Diliman's homegrown Computerized Registration System due to the project.

So far, only the Collegian has published a comprehensive review of eUP. However, after the report was published in print and garnered hundreds of comments online, the story was never followed up except for a couple of news reports on the glitches in one of eUP's core systems in 2014 and 2015 during enrolment season at UP Manila.

In her piece, Collegian news writer Isabella Borlaza (2012) bared the consequences of replacing the existing CRS with the Student Academic Information System (SAIS), one of eUP's five core information systems obtained from the US-based company Oracle.

The reporter quoted CRS developers and student leaders who asserted that the replacement will supposedly waste millions of taxpayer money because CRS, and other similar information databases throughout the UP System, already possess the features that SAIS offers and have been fully functional for years. Eight out of 13 SAIS applications, for instance, are already present under UP's homegrown systems (Borlaza, 2012).

In the same report, Borlaza quoted Pascual justifying the switch to eUP's Oracle modules by saying UP will waste its time developing a software already being done by "thousands of other entities," a statement which CRS developers countered with a comparison of eUP's price tag with the current maintenance expenses of the university's homegrown systems.

If given enough support and confidence from the administration, UP could generate its own information management programs that would be at par with the Oracle software, said Amor.

“Ang pinakamalaking problem naman ng (CRS) team is umaalis yung experienced (web) developers either dahil hindi na akma ‘yung salary nila sa experience nila or na-bu-burnout lang dahil sa lack of recognition,” said Macapagal.

Currently, the CRS has an annual average budget of P2.7 million, only 5.4 percent of the cost of the whole Oracle software which is P50 million.

The eUP budget is comprised of P547 million from reprogrammed UP funds and P198 million additional budget from the Commission on Higher Education, said Vice President for Development (VPD) Elvira Zamora.

According to the report, UP’s initial budget for the project has reached P745 million, P198 million of which comes from CHEd funds. The university spent P422 million in 2012 to “purchase software, retrain staff and web developers, and the create infrastructure that would strengthen the connectivity between networks” while the rest will be channeled to maintenance.

Instead of funding Pascual’s flagship project, Borlaza reported how funds meant for eUP could have solved several financial woes in the university such as the lack of laboratories in UP Visayas or the unapproved construction of a library in UP Tacloban. The Department of Budget and Management slashed P5.1 billion from the university’s proposed budget for 2013 in its National Expenditure Program at the time.

While much of the discussion was on fiscal concerns, the *Collegian* also floated the possibility of a “vendor lock-in” when it cited how local telecommunications giant Electronic Philippines Long Distance Telephone Company (ePLDT) bagged the role of system integrator and infrastructure provider through its sister company Smart Communications Incorporated.

Borlaza wrote:

What we fear in these off-the-shelf products is a possible lock-in, wherein clients are tied to using one brand because all the components needed is unique only for that brand,” said Computer Center Director Johnrob Bantang. In the dynamic nature of technology, regular upgrades mean regular transactions with software providers. (2012)

Under Republic Act 9184, or the Government Procurement Reform Law, public institutions shall always conduct a “competitive bidding” in choosing a firm or contractor in any of its big-ticket projects. The Revised Implementing Rules and Regulations of Republic Act 9184 defines “competitive bidding” or “public bidding” in Rule I Section 5 as “a method of procurement which is open to participation by any interested party and which consists of the following processes: advertisement, pre-bid conference, eligibility screening of prospective bidders, receipt and opening of bids, evaluation of bids, post-qualification, and award of contract.”

In the event that only one contractor or firm can provide an item which a government entity intends to procure, the institution may enter a Single Source Procurement or direct contracting where competition among different bidders is no longer necessary. Republic Act 9184 stipulates that direct contracting may only be

resorted to if the goods to be procured are proprietary in nature, the item is a requirement for a firm to fulfill its project as stipulated in its contract or the good is sold exclusively by one manufacturer which has no sub-dealer selling at a price most advantageous to the government.

During the competitive bidding for the project's system integrator, ePLDT won the P135-million contract to buy and implement Oracle's programs (Borlaza, 2012).

Meanwhile, Smart has entered a deal with the university to provide information technology infrastructure and internet bandwidth.

CHAPTER III. STUDY FRAMEWORK

A. Theoretical Level

This study, which assessed the efficiency and efficacy of the eUP project in the university, used information technology and public administration theories. For this purpose, the researchers used the DeLone and McLean model of Information Systems Success, and the Open Systems Theory.

1. Updated DeLone and McLean Model of Information Systems Success

To explain what makes an information system (IS) successful, William DeLone and Ephraim McLean (1992) created a taxonomy of IS success as a synthesis of previous IS research. It attempts to operationalize and conceptualize the “dependent variable”—IS success—and has since become one of the most widely used frameworks in IS literature.

Recognizing suggestions from empirical studies, they have since extended and modified their model to show how an IS can be evaluated through the six major dimensions of success: information quality, service quality, system quality, intention to use/use, user satisfaction, and net benefits (Figure 1).

Information Quality, according to Urbach and Muller, is measured by accuracy, timeliness, understandability, completeness, relevance, and consistency of output of any IS (2012).

Service Quality refers to the overall support delivered by the service provider. It is measured in terms of assurance, responsiveness, and empathy. (DeLone and McLean, 2003).

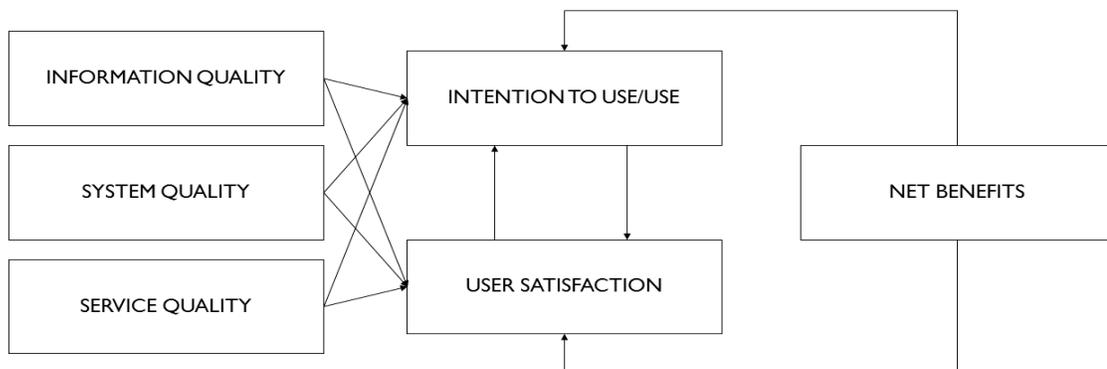
System Quality focuses on the usability and performance of the IS under examination (Urbach and Muller, 2012). It looks at a system’s features, ease of use, convenience, accessibility, flexibility, reliability and response time.

These three dimensions are linked to *use* and *user satisfaction*. The former refers to the degree or manner by which an IS is utilized by its intended users (DeLone and McLean, 2003). In cases of voluntary use, the actual use of an IS may be considered a success measure; but DeLone and McLean suggests *intention to use* as an alternative in non-voluntary cases.

User satisfaction, meanwhile, refers to the consumer's opinion of the entire IS experience, which may also determine his or her intention to use/use the IS (DeLone and McLean, 2003).

Finally, *net benefits* refer to the extent by which the system contributes to the success of its stakeholders. It looks at value of technology investments through return on investment (ROI), cost, productivity analysis, and profitability (Urbach and Muller, 2012).

Figure 1. *Updated DeLone and McLean Model of Information Systems Success*



2. *Open Systems Theory*

As originally envisioned by biologist Ludwig Von Bertalanffy (1958), the Open Systems Theory is rooted in the concept of systems, which Laszlo and Krippner defined as a set of two or more interacting elements with the following characteristics:

1. Each element has an effect on the functioning of the whole.
2. Each element is affected by at least one other element in the system.
3. All possible subgroups of elements also have the first two properties (1998, p. 8).

The theory posits that a system is strongly influenced by their environment, which exert economic, political, or social forces upon it (Bastedo, 2004).

Under this perspective, an open system's mechanism has five elements, namely: inputs, transformations, outputs, its external environment, and feedback (Figure 2)

Input refers to the imported energy, raw materials, and information from its external environment (Katz & Kahn, 1978, cited in Seeger, 1992, p. 667). Other systems such as schools, on the other hand, use human and financial resources. (Lunenberg, 2010).

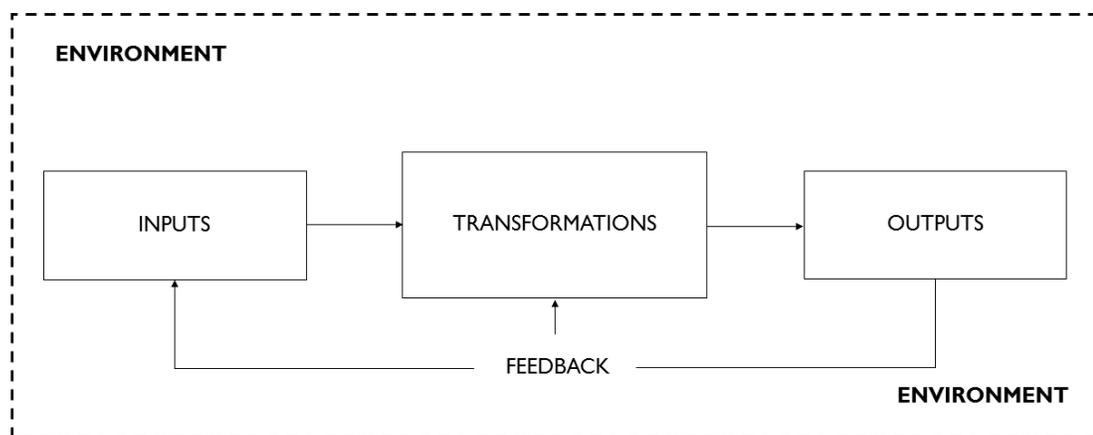
Transformations, as defined by Lunenberg (2010), refers to the coordination and combination of an organization's resources to produce output. This also includes the internal operation and management of the organization, as well as the technical competence of its members.

Output, on the other hand, refers to the attainment of goals or objectives (Lunenberg, 2010). It is represented by the products, results, or accomplishments of the system, such as growth and achievements of its staff, increased productivity, employee performance, and job satisfaction.

Meanwhile, a feedback loop links output into renewed input and into the transformational process. For example, negative feedback, or constructive criticism (Katz & Kahn, 1978, cited in Seeger, 1992, p. 669), enables a system to correct itself, which will in turn affect future output.

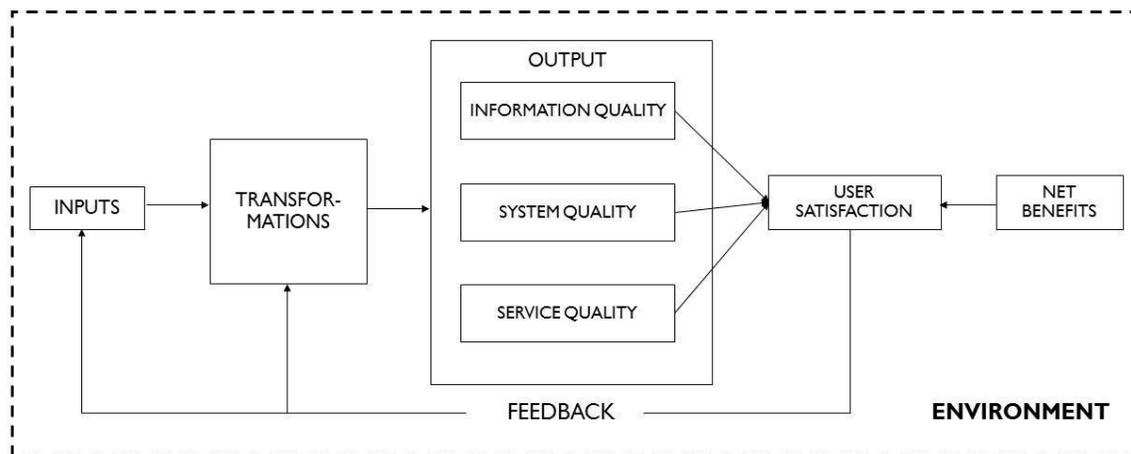
Finally, its external environment is defined by the social, political and economic contexts in which a system operates (Lunenburg, 2010). It includes the different pressures and forces that impinge on a system.

Figure 2. *Open Systems Theory*



Both theories provide the theoretical background to this study. The DeLone and McLean model of IS success provides validated measures which to assess the efficacy and efficiency of information systems, while the Open Systems theory illustrates how the environment affects a given system, which in turn transforms its resources into output according to external demands.

The following theoretical framework integrates these two theories to further illustrate the relationships of each element in this study (Figure 3).

Figure 3. *Theoretical Framework*

As the Open Systems theory suggests, the environment in which an IS exists affects the inputs that are given to the ERP and how these inputs are managed to produce desired outputs.

Integrating this theory with DeLone and McLean's model, however, output no longer directly affects input and transformation. Output is simply measured by the quality of which the IS is able to be used and deliver information accurately and reliably, which, in turn, affect user satisfaction. What now affects the former two variables is the satisfaction of the end users that is dependent on both the output and the net benefits they derive from it.

B. Conceptual Level

Information systems are constantly being updated and developed to suit the changing demands of society for information. Under the Open Systems theory and DeLone and McLean's model, the environment and the users' satisfaction with the net benefits they derive from the IS are the main sources of changes, respectively. Thus, the

intervening factors are the conditions where the administrators and developers of the IS exist in and the actual performance of the information system.

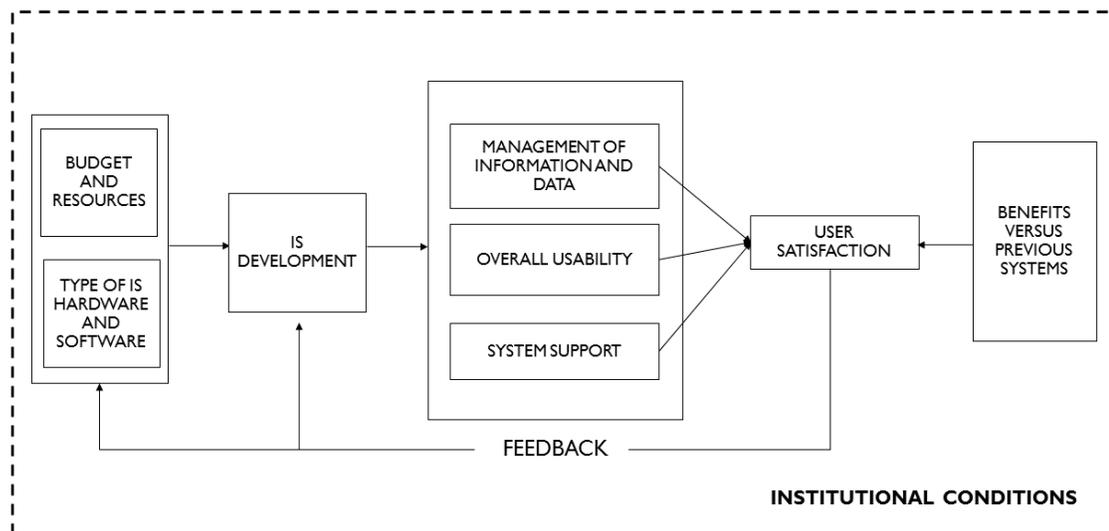
The inputs variable in the Open System's theory may refer to the resources of the institution which seek to develop an IS and the ICT hardware and software it chooses to build the information system with. These resources are then transformed by the actual development and management of the former to operate the IS and produce the desired outputs.

In the conceptual level, output is the IS itself which will be assessed based on its management of information and data, the support given by its service providers and its overall usability. These three criteria of the output will affect user satisfaction.

User satisfaction will also be dependent upon the benefits they derive from the current IS compared to the previous IS that their institution has implemented, if any.

Ultimately, institutional conditions and perceived benefits compared to its previous IS influence how information systems are developed and executed.

Figure 4. *Conceptual Framework*



C. Operational Level

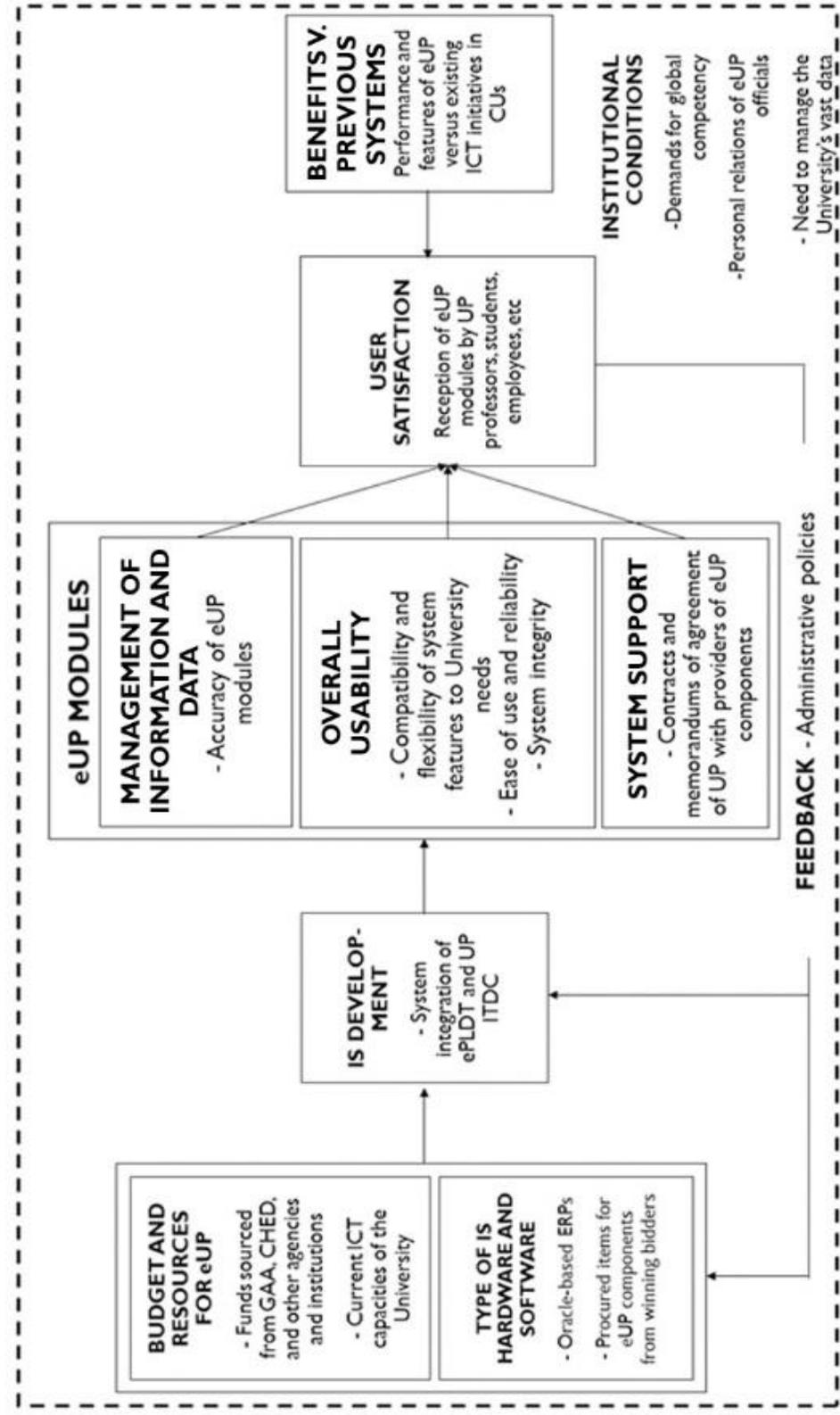
In this study, the external demands for global competency, the administrators and developers' personal relations and the need for a comprehensive system to manage the university's vast data define the present environment of the university. Meanwhile, the net benefit variable of the DeLone and McLean model can be derived from the performance and features in the eUP project in comparison with the university's currently running IT programs such as the Computerized Registration System, System One and etc.

Input is further broken down to the budget the eUP project receives from different sources and the enterprise resource planning system from Oracle Inc. The integration and implementation efforts of ePLDT and UP's Information Technology Development Center comprises the transformation variable, while the output defined by the Open Systems theory are the eUP modules itself.

This study assessed the eUP modules on the three variables in the DeLone and McLean model that affect user satisfaction. These are defined by the accuracy of the data and information dispensed by the IS, the efficiency and flexibility of the information system and the support given by the eUP project's partners.

To gauge how these affect user satisfaction, the study determined the university's professors, students, and employees' reception to the performance of eUP module. This is assessed in contrast with the performance and features of existing IS initiatives implemented in each constituent unit, and how the discrepancies affect them. Finally, the administrative policies implemented by the university to correct and improve the performance of the eUP modules is integral to understand how these systems are maintained and operated.

Figure 5. Operational Framework



D. Definition of Terms

1. constituent unit—An autonomous campus administration under the University of the Philippines System
2. enterprise resource planning (ERP) system—The software which integrates all systems of various departments and functions into a single computer system based on a single database to ease exchange of data and communication among departments.
3. eUP—The flagship program under the Pascual administration to “integrate, harmonize, and interoperate” ICT systems and infrastructure across all constituent universities of the UP System.
4. information system—UP’s current independent softwares that store its population’s information in a digital storage that is not integrated in a larger and centralized database.
5. in-house / homegrown / legacy—Systems and software which are developed within and by the university.
6. off-the-shelf— Systems and products that are made to order.
7. open-source—Systems and software whose source code is made freely available for redistribution and customization.
8. Oracle – The US-based provider of enterprise resource planning systems.
9. vendor lock-in—A situation in which the university, due to incompatible technologies or contract constraints, becomes dependent on a vendor for its products and services and is unable to use another vendor without substantial switching costs.

CHAPTER IV. METHODOLOGY

A. Research Design and Methods

This study sought to establish the effect of the eUP project to the university's constituents and homegrown systems. It also explored whether the university's resources—time, budget, and manpower—were used efficiently and effectively to meet the project's objectives.

This research used an investigative format, which was then made accessible to popular audiences through journalistic writing. The study relied heavily on qualitative methods through in-depth interviews with the project's stakeholders—its key officials, former and current legacy developers in the university, and other key informants, to paint a picture of the consequences of the project.

The report also used quantitative methods. Such documents include the budget, expenditure plans, and annual procurement plans of both the university system and its constituent units, all of which were analyzed using data journalism methods to make sense of voluminous data.

These were then analyzed vis-à-vis national and university laws and policies relating to procurement to establish the legal framework of eUP, and whether all processes relating to the project, from procurement to implementation, were done in propriety.

B. Concepts and Indicators

The university's combined resources, as referred to in the study framework, make the independent variable of the study. This includes the budget allocated by the university

as well as the funds sourced from various agencies and institutions to the eUP project, as well as existing IS capabilities of the university, including infrastructure and manpower.

Meanwhile, greater demand for global competency, personal relations of the eUP officials, as well as the integration of current IS capabilities as facilitated by key eUP players, are the intervening variables.

Together, these variables result into the dependent variable: the overall benefits gained from the eUP project. The study framework, as adapted from the DeLone and McLean's IS Success Model, highlighted different concepts to measure its performance.

Service quality is assessed through the bidding contracts and memorandums of agreement undertaken by the university and its suppliers and contractors, to establish which entities are at play in the implementation of the eUP. This also shed light on the accountability in terms of the project's progress.

To determine the project's technical efficiency, the study looked at the *information* and *system quality* of the five eUP core modules. The objective assessment of the modules in terms of its track progress, and its compatibility with the university's IS infrastructures. It also looked at the accuracy of information provided in the modules and in accordance with the current bureaucratic processes in place in the university. These were analyzed through rigorous interviews with experts.

Finally, these measures helped contrast eUP's performance to current IS initiatives in each CU. The study established whether the optimal use of the university's resources are indeed observed in the implementation of Pascual's flagship project.

C. Data Gathering

In the course of this long-form study, the researchers employed in-depth interviews and requested scores of documents from several government agencies and departments to produce a comprehensive report on the eUP project.

Moreover, they also constructed an interview guide in accordance with the study's objectives, which also served as their primary research instrument.

Table 1. *Key Documents*

Document/s	Custodian	Purpose/Data
UP Annual Procurement Plan, 2012-2016	Dr. Nestor Raneses, UP Supplies and Property Management Office	To pinpoint the list of procured items for the eUP project
eUP Breakdown of Expenses, 2012-2015	Dr. Jose Florendo, UP Vice President for Planning and Finance	To establish how much the university has already spent for the project
Bidding documents relating to the project, 2012-2015	Philippine Electronics Government Procurement Service	To determine what items were procured for the project, who were the winning bidders, and how much the university paid for these
Progress Report on eUP	Dr. Alfredo Pascual, UP President	To determine the track progress of the implementation of the eUP project across UP System
Performance reports per CRS in each CU	CRS teams	To assess the current software and technical capacity of the university's constituents
System progress reports	eUP team	To assess the progress of the eUP project's implementation so far

For this study, the researchers interviewed at least 96 sources, mostly through personal, landline, Skype, or email correspondence. Highlighted in this table are the people whose input were heavily used for the report.

Table 2. *Key Informants*

Interviewees	Position	Purpose/Data
Dr. Jaime Caro	Assistant Vice President for Development eUP project Director Head, UP Information Technology Development Center	To explain the issues faced by the eUP project during its five-year stint and discuss the administration's plans to solve them
Dr. Annette Lagman	eUP project Management Consultant	
Dr. Alfredo E. Pascual	President, UP System	To answer the issues raised by the university community regarding the feasibility and likelihood of the project being completed under his term as President
Dr. Roel Ocampo	Former director of the UP Diliman Computer Center	To provide expert information on ERPs and the current IT capabilities of the university
Dr. Edgardo Atanacio	Member, University Council Oversight Committee on eUP	To provide information about the current progress of the implementation of eUP
Dr. Eugene Rex Jalao	Assistant University Registrar, UP Diliman	To provide insight on the primary differences between UP Diliman's CRS and eUP's SAIS

	eUP consultant (Executive Information System)	
Rommel Bulalacao	System administrator, UP Los Baños SystemOne	To provide information on how each in-house systems were developed in each constituent unit, their features and performance, in contrast with the eUP modules, as well as an expert assessment on the differences between the performances of the eUP modules and current existing systems
Melissa Pagaduan	System administrator, UP Manila CRS	
Arf Pita	UPDEPP Campus administrator, UP Diliman CRS	
Krishna Balaga	Computer Programmer, UP Mindanao	
Gerran Simacon	Computer Services Unit Officer, UP Cebu	
Ramon and Olivia de Guzman	UP Diliman CRS architects	
Kay Enrile and Benedict Reforma	University Registrar staff, UPOU	
Ara Laranang	Deputy SAIS team leader	To explain the processes and progress of the SAIS group of the eUP team
Vincent Teodosio	HRIS team leader	To explain the processes and progress of the HRIS group of the eUP team
Cherie Anne Pasco	FMIS team leader	To explain the processes and progress of the FMIS group of the eUP team
Annette Lagman	EIS team leader	To explain the processes and progress of the EIS group of the eUP team
Nino Soliven	Former FMIS system analyst	To provide an alternative view on the processes within the FMIS group of the eUP team

Armina Francisco	Former SAIS system analyst	To provide an alternative view on the processes within the SAIS group of the eUP team
Juvy Camua	Former FMIS co-team leader	To provide an alternative view on the processes within the FMIS group of the eUP team
Jared Refamonte	Former HRIS team member	To provide an alternative view on the processes within the HRIS group of the eUP team
Offices of the University Registrar, Budget Offices, and Accounting Offices		To detail the experience of data-managing employees as end-users with the eUP systems
Miguel Enrico Pangalangan	UP System Student Regent	To provide insight as representative to the University Student Body
Dondon Parafina	Expert on procurement, Ateneo de Manila University	To assess the project within the parameters of RA 9184, or the Government Procurement Reform Act, to see if it is compliant with the law
Carole Belisario	Officer, Procurement Watch Inc	
Randy Flores	Government Procurement Policy Board (GPPB) IT procurement officer	
Diane Borja	GPPB Procurement Management Officer	

Table 3. *Interview Guide*

Independent sources	eUP critics	eUP team	
		Disgruntled members/former members	Key officials and developers
What are the goals of the eUP project?	What are the effects of the project to the university community?	What are the causes of delay and problems in the implementation of the eUP project?	What are the administration's plans to solve the project's issues?
How do ERPs work?	Has the project delivered on its promises?	How has the dynamics in the eUP administration affect the implementation of the project?	How do you run or manage the team developing eUP?
Were sufficient studies such as cost-benefit analyses conducted to predict the feasibility of the project's implementation?	How transparent has the university administration been throughout the project's implementation?	What were the priorities of the eUP administration before and during the project implementation?	What efforts were made to make sure the project's implementation was inclusive and consultative?
What are your observations and assessment of the current state of eUP's information systems so far?		Were there proper training and experience among the eUP team prior and during the project's launch?	What are the administration's plans for eUP now that the President's term is almost over?
Are there alternatives to the information systems used in eUP?	What difference does open-sourced software have in an ERP project like eUP?	Will current information systems being used by eUP be practical and manageable in the long-run?	How were Oracle information systems chosen as the eUP project's core systems?
Were proper procurement procedures observed	Can eUP's partners deliver their output by 2016?	Can we still switch to other alternative	Will the next UP administration

during the bidding of the project's components?		solutions for eUP's software issues?	continue the eUP project?
Has the eUP project been audited?	What will happen to UP's existing homegrown information system?		

D. Data Analysis

The information gathered from the aforementioned sources were organized into two files: those related to the selection and procurement of the components of the eUP project and analysis of the project's performance vis-a-vis the university's current homegrown programs.

Documents pertaining to the selection of the eUP project's components were analyzed and linked with the relationships of the project's developers and administrators. This study created a web which included all the locations travelled by the eUP team before and after the project's implementation and the ties that bind them with the entities involved in eUP's information systems.

Contracts and awards for the procurement of the project's several components were also rigorously vetted with specific emphasis on its approved budget for contract, the winning bid and the specifications of the item. The amounts spent on each component were compared to prevailing market prices and corroborated with the financial statement provided by the UP administration.

Meanwhile, this study drew observations from the thoughts of several computer and software developers all over the UP System based on their recorded interviews. The

CHAPTER V. RESULTS AND DISCUSSIONS

A. UP tailor-made P135M IT contract for US-based firm

3 other deals violated procurement law

(First of four parts)

September 17, 2012 was a momentous date for the University of the Philippines. Inside the posh halls of its Executive House, university officials led by President Alfredo Pascual signed a P135 million contract with bigwigs from corporate giant ePLDT and American conglomerate Oracle Inc. Top executives delivered speeches and smiled for the cameras.

The event marks the beginning of the university's ongoing relationship with ePLDT and Oracle in its largest information technology program yet: the eUP Project.

According to their contract, ePLDT will provide the university with Oracle software and harmonize UP's databases into one integrated system. Initially projected to cost P752 million in the long run, the eUP Project will supposedly modernize the university's IT infrastructure and speed up operations in the university through the seamless integration of databases across UP's eight constituent units (CUs) within three years.

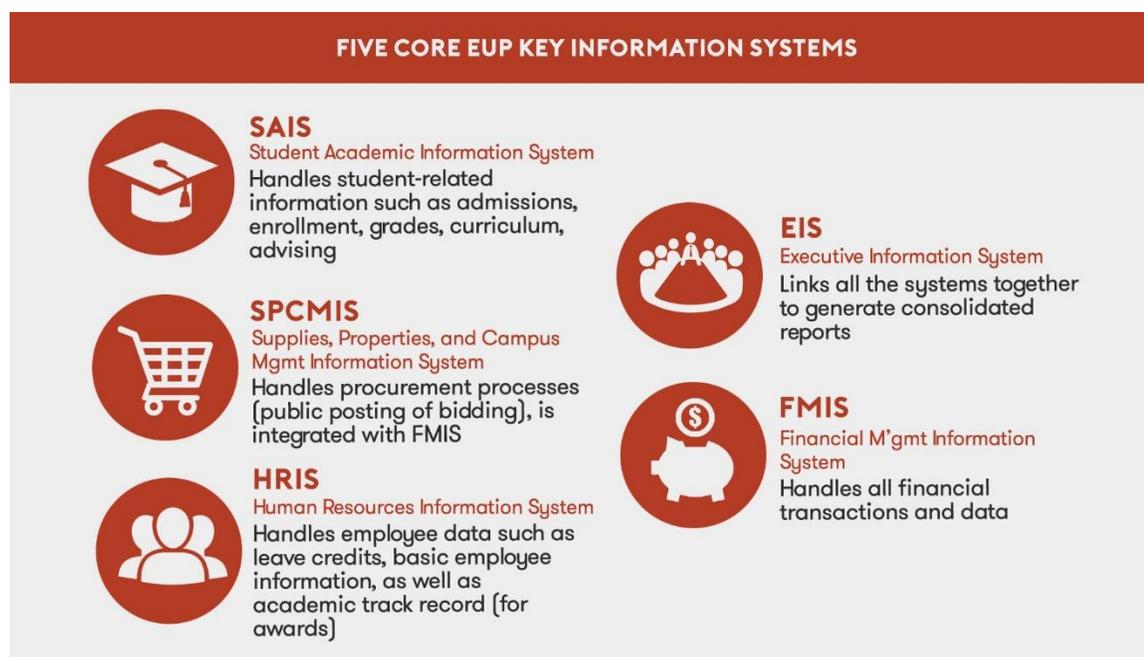
Four years later, the project remains far from complete. Poor project planning and management, weak internet infrastructure, and unclear administrative policies caused severe delays and recurring glitches during the project's implementation. Ironically, rather than pique the interest of the university's own IT talent, the project has caused their exodus and the termination of their legacy systems.

But as worrisome, if not more, is the integrity of the university's deals with Oracle and ePLDT. A closer inspection of its contracts revealed that a number of these, including the P135 million deal that started it all, ran counter to the government procurement law and principles of good governance. The project was tailored to favor Oracle Inc.

eUP mother contract violates state procurement law

At the heart of eUP are five new internet-based information systems that will handle the data and transactions of all the university's students, faculty and staff: the Student Academic Information System (SAIS), Financial Management Information System (FMIS), Supplies, Properties, and Campus Management Information System (SPCMIS), Human Resource Information System (HRIS), and the Executive Information System (EIS).

Figure 6. *Five core eUP information systems and their functions*



Funded by no less than the national budget, the project will create these systems by procuring software and services from companies in the private sector rather than from its own pool of talents who have been developing UP's homegrown systems.

In several forums on eUP, Pascual has repeatedly assured his constituents that the contracts he penned for these systems were competitive and in line with the law.

Republic Act 9184, or the Government Procurement Reform Law, requires the university to call on private entities to name their lowest price through a process called public bidding. Section 18 of the Implementing Rules and Regulations (IRR) of RA 9184 instructs government institutions to draft specifications for the public bidding "based only on its relevant characteristics or performance requirements" and specifically states that "reference to brand names shall not be allowed."

According to the Government Procurement Policy Board (GPPB), this is to ensure "equal opportunity to private contracting parties who are eligible and qualified to participate in public bidding."

However, an inspection of the terms of references (TOR) of eUP's mother contract showed that UP did not follow the guidelines set by the law.

Drafted in March 2012, the 75-page TOR mentioned the brand "Oracle" at least 20 times in the technical requirements for eUP's core systems. For example, the TOR specified that one of the modules for FMIS, Trust Fund Management, must be integrated with "Oracle Projects, Oracle General Ledger, Oracle HRMS, Oracle Purchasing, Oracle Internet Procurement, Oracle Payables, Oracle Internet Expenses and Oracle Receivables."

In another instance, the TOR specified that appropriate transformations for the EIS must be constructed from the Oracle e-Business Platform, the suite that the FMIS, HRIS, and SPCMIS will later be developed from.

Figure 7. Mentions of Oracle in the Technical Requirements for the Procurement for eUP

Appendix A Technical Requirements for the Procurement of the University of the Philippines (UP) University Information Systems (UIS)	
I. Requirements	
A. General Requirements	
4.	The application should be able to connect to/migrate from all major types of relational database systems such as Oracle, MySQL, PostgreSQL, MS SQL, and DBF.
15.	The system should be integrated with Oracle Projects, Oracle General Ledger, Oracle HRMS, Oracle Purchasing, Oracle Internet Procurement, Oracle Payables, Oracle Internet Expenses and Oracle Receivables.
3.	Appropriate transformations will be constructed from the Oracle E-Business Platform as a source to the target analytic applications.
5.	The application should be fully parameterized to easily effect changes without the need for reprogramming.
6.	The application should be fully secured to run via the Internet.
7.	Facility for load balancing of application servers and database servers.
8.	The application should be developed using an integrated database but with a decentralized processing approach.
9.	There must be use of coding standards with corresponding documentation.
10.	Test-driven development shall be implemented.
11.	The application must support Service Oriented Architecture (SOA).

Source: *Terms of Reference for the Procurement of Goods and Services of the Key Components of the eUP Project, 2012*

These brand references to Oracle are prohibited under RA 9184, said lawyer

Diane Borja, a GPPB procurement management officer.

“Brand mentions are definitely not allowed because if you refer to one, other brands can no longer join the procurement process,” she said in Filipino.

For private procurement expert Carole Belisario of civil society organization Procurement Watch Inc., requiring the brand Oracle for the procurement of eUP’s

information systems already limits the public bidding to those that have a business relationship with the corporation.

“If the specifications are such that the procuring entity has no other option but to procure from a particular brand or supplier, it defeats the purpose of (competitive) public bidding," she said.

3 other eUP contracts violate procurement law

Beyond the TOR of the project, this report uncovered three other contracts whose pre-bidding document, called Invitation to Bid (ITB), bore brand names, a violation of RA 9184.

Two such ITBs involved the procurement of 141 units of Acer Veriton computer desktops with an approved budget for contract (ABC) of P3.2 million, and 70 tablets which specifically required features exclusive to Apple products with an ABC of P3 million. A smaller ITB sought to procure two units of ASUS Zenbook laptops at an ABC of P123,772.

Figure 8. ITBs with brand names: Asus, Acer, and Apple computer desktops for eUP

Invitation to Bid (ITB)		Award Notice
Reference Number	1844551	
Procuring Entity	UNIVERSITY OF THE PHILIPPINES SYSTEM - OLDMAN	
Title	Computer Desktops for eUP Project	
Area of Delivery	Metro Manila	
Solicitation	141 units	
Trade Agreements	Acer Veriton X480G Dual Core or equivalent	
Procurement	Intel Pentium Dual Core E6700 (3.2ghz 2mb)	
Classification		
Category		
Approved		
Delivered		
Client		
Contact	Intel Pentium Dual Core E6700 (3.2ghz 2mb) 2GB DDR3 1066MHz 500GB HDD SATA II 7200rpm 16x Super Multidrive Integrated Intel Graphics Media Accelerator X4500 (intel GMA x4500) Embedded high definition audio with 5.1 channel surround sound support Integrated Gigabit Ethernet 10/100/1000 Wake-On-LAN with 56K modem PCI Express 2.0x16 slot PCI Express 2.0x1 slot With 20" monitor LED/built in speaker USB Keyboard and USB Optical Mouse With Card Reader 3-years warranty on part and labor Pre-bid Conference	06/09/2012 06/09/2012 12:00 AM 03/07/2012 3:00 PM



Bid Notice Abstract

Invitation to Bid (ITB)

Two (2) units ASUS or equivalent Laptop Zenbook UX21e-RY009v, Super Hybrid	
Engine II for 2-second resume and up to 2 weeks standby time	
Specifications:	
- ASUS UX21E – KX004V	
- Intel Core i5 2467M 1.6GHz	
- 4GB DDR3 1033	
- SATA 6GB/s 128GB-SSD	
- 11.6"HD color Shine (LED)	
- Intel HD Graphics Share	
- NO ODD	
- WIN7 Premium	
- Y/USB 3.0	
- 0.3M	

	Awarded
Components	1



Dual-core Apple A5X custom-designed, high-performance, Low-power system-on-a-chip with quad-core graphics
Wi-Fi (802.11a/b/g/n)
Bluetooth 4.0 technology

Reference Number	Digital AV Adapter (sold separately)
Procuring Entity	AirPlay Mirroring to Apple TV (2nd and 3rd generation) at 720p
Title	AirPlay video streaming to Apple TV (3rd generation) at up to 1080p and Apple TV (2nd generation) at up to 720p
Area of Delivery	Video mirroring and video out support. Up to 1080p with Apple

Solicitation Number:	UPS SPHO 2012-067	Status	Awarded
Trade Agreement:	Implementing Rules and Regulations	Associated Components	1
Procurement Mode:	Public Bidding	Bid Supplements	1
Classification:	Goods		
Category:	Information Technology		
Approved Budget for the Contract:	PHP 3,000,000.00		

These are screenshots of three ITBs for certain eUP equipment. From top to bottom: ITB for 141 units of Acer Verizon laptops or equivalent at P3.2 million, ITB for two units of Asus laptops at P123,000, and ITB for 70 Apple iPads at P3 million. Source: Philippine Government Electronic Procurement Service website, UP System Supplies and Properties Management Office

“These ITBs should have used generic requirements because if you’re procuring laptops, without their brand names, they all generally have the same specifications,” Borja said.

UP uses ‘outdated’ manual for eUP procurement

Isagani Bagus, Officer-in-Charge of the UP System Supply and Property

Management Office (SPMO), justified the inclusion of brand names in the TOR and ITBs of several eUP items through an “exception” in the GPPB’s 2005 Manual of Procedures of Goods and Services.

A footnote on page 10 of the manual’s second volume states that “(I)t may be necessary to quote a brand name or catalog number of a particular manufacturer to clarify an otherwise incomplete specification” and should it be done “the words ‘or its equivalent’ should be added after such reference.”

The phrase “or its equivalent” was present in the three ITBs that bore the brand names Acer, Asus and Apple, but not in the TOR of eUP’s mother contract.

Pascual dismissed the failure of the TOR to follow the requirement as a “clerical lapse.” When asked whether the manual supersedes the IRR, Bagus said it does not.

Even if UP had inserted the “or equivalent” phrase in the bidding documents, it would still be violating the law. Borja said the manual has already become outdated since the IRR of the law were amended in 2009 and, more important, the manual does not override the provisions of RA 9184.

“The manual was based on the first version of RA 9184’s IRR drafted in 2003. So only the provisions that do not conflict with the new IRR are still applicable,” Borja said in Filipino.

Both the 2003 and 2009 versions of the IRR impose the absolute prohibition on references to brand names in public biddings of goods and services.

As a rule, brand names should be excluded at all times in public bidding, Borja said. GPPB's countless non-policy opinions have consistently held that brand references restrict healthy competition and create an uneven playing field.

In their 127-page response, Bagus and Pascual said mentioning brand names is common practice among state agencies, citing at least nine instances where other government institutions did not follow Section 18 of RA 9184.

Among these agencies are the Office of the Ombudsman and the GPPB itself, which mentioned the brands Intel and Microsoft in one of their technical proposals and annual procurement plans.

“Marami pa rin kasing procuring entities na gumagamit ng manual eh. Since na-revise na ang IRR, nalilito sila (This is because there are still many procuring entities that still use the manual. But since the IRR has been revised, they get confused),” Borja said.

Lack of other alternatives to Oracle

Should agencies insist on mentioning brand names, Borja said it should issue a document that substantially justifies its position as stipulated in the 2005 manual as well.

The university did not append such documents to the TOR and the three eUP ITBs.

Instead, Pascual and the eUP team only justified their brand mentions in a series of personal interviews for this report.

Prof. Ariel Betan, vice chair of the eUP bids and awards committee, said mentioning Oracle was inevitable, given its complex and proprietary nature as well as the lack of suitable alternatives to the software for the project.

However, several local IT talents were quick to point out that there are other vendors of enterprise resource planning (ERP) software needed for eUP such as SAP and Microsoft.

“It will take a lot of planning to decide what system to use, but to our surprise we suddenly identified Oracle as the best choice,” said Adrian Valdez, former chair of the UP Diliman Department of Computer Science.

Given the ban on brand references, Dondon Parafina, an expert on procurement from Ateneo de Manila University, said UP should have used generic and flexible phrasing in eUP’s TOR and ITBs to avoid unilaterally limiting or seemingly favoring a few companies.

“UP should have exercised due diligence in this big-ticket, state-funded eUP Project,” Parafina said.

But by Pascual’s own account, as well as those of several other actors involved in the project, Oracle was already the preferred software, even before the TOR was drafted in March 2012.

Early beginnings of UP and Oracle

Pascual said he met with an unspecified vice president of Oracle from California sometime in 2011 to discuss the company’s products.

“I told them, we’re the national university. If you have a good product, you have to demonstrate if it will work here. And if it works in UP, you’ll probably get more customers,” he said.

Pascual’s promise of giving Oracle a foothold in the Philippines in exchange for a lower price resulted in UP getting a 90 percent discount on Oracle’s three products,

PeopleSoft Campus Solutions, e-Business Suite and Oracle Business Intelligence, which the company deemed necessary for the eUP project. Pascual said he managed to minimize the cost of the licenses of these software from P800 million to P43 million.

Sometime after the meeting, Pascual sent Dr. Jaime Caro, then director of the UP Information Technology Training Center who would later become eUP's Project Director, Vice President for Development Elvira Zamora and two Computer Science professors to visit Ngee Ann Polytechnic University and the National University of Singapore—both Oracle users—to gauge whether or not Oracle was indeed a viable product.

When they came back, the team simply studied other Oracle-using universities online. Asked whether the university had conducted a feasibility study on Oracle and full documentation of the Singapore visit and online research on Oracle, Pascual said there was none. He said he considered the benchmarking study as having been done by the delegation sent to Ngee Ann and NUS.

“You know, in decision-making, that is what we call analysis paralysis. They want a thesis, they want a full feasibility study. But it's not like we're trying something that's new and untested,” he said in Filipino, explaining that conducting a full-blown analysis would have paralyzed the implementation of the project.

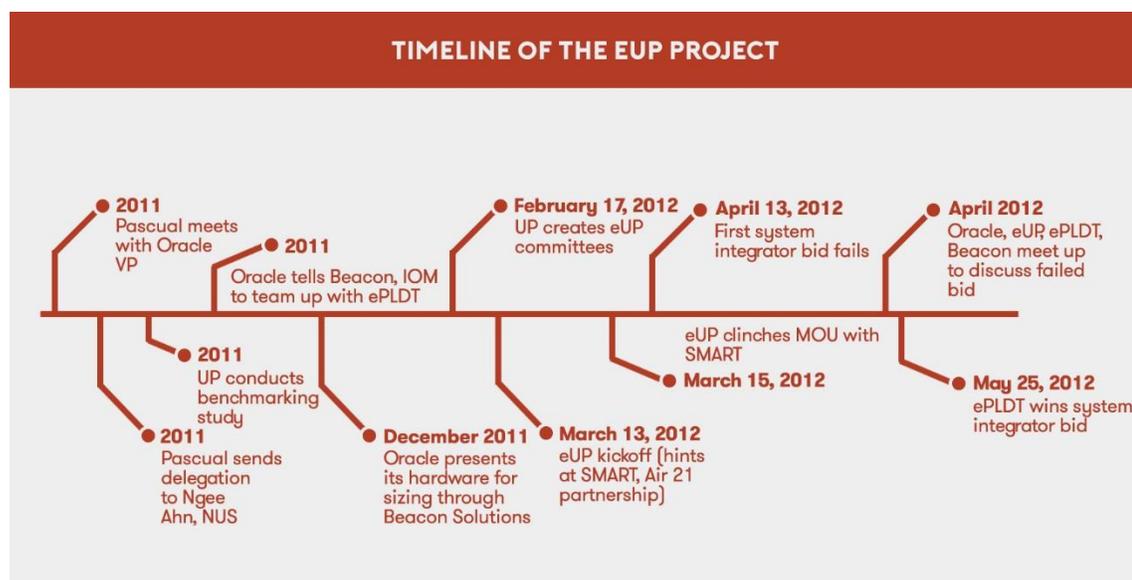
In December 2011, UP met with Oracle again, this time to talk about the hardware to use with its software, a highly placed source among eUP's partners, said. This was confirmed by Prof. Rommel Feria, the project's Hardware and Network Team Leader.

The entity that presented the Oracle Sun Fire X4170 Mx series servers and Pillar Axiom 600 storage arrays that UP would later procure: Beacon Solutions, one of eUP's current implementing partners.

According to highly placed sources from eUP's partners, Oracle had already referred Beacon Solutions and IOM to team up with ePLDT in the upcoming multimillion-peso bid for the eUP project. This was months before the P135 million TOR was placed for bidding or the eUP committees were even formed in February 2012.

"Oracle more or less dictated this bid," the source said.

Figure 9. *Timeline of the eUP project*



After being convinced that Oracle was the "best practice," Caro said he no longer considered other ERP vendors during the drafting of the TOR, especially the Germany-based SAP, due to its lack of a stable campus solution.

“We were convinced that Oracle Campus Solution is the best that we can have because it’s already being used. Of course we have a bias or preference towards it,” Pascual said.

Despite conducting a “market study,” UP’s unilateral decision to favor Oracle was already a clear violation of RA 9184’s ban on tailoring contracts to suit certain companies, said Randy Flores, GPPB’s IT procurement officer.

“Had there already been existing (Oracle) programs being used beforehand, this would be allowed. But if there are none that requires the need of Oracle (in eUP), then that is questionable,” he said in Filipino.

Both Borja and Flores said UP’s meetings in 2011 and decision to choose Oracle already “tailor-fitted” the contract to favor companies that will bid Oracle products.

When UP posted the TOR for bidding in March 2012, for instance, two corporations submitted proposals: ePLDT and Globe subsidiary Innove Communications—both of which offered an Oracle-based bid. But the bidding failed after both corporations were disqualified for supposedly leaving a few fields blank in their bidding papers, according to a resolution by UP’s Special Bids and Awards Committee on the eUP project.

By May 2012, ePLDT, in a joint venture with Techlogix, Beacon, IOM, and Patch Solutions, won the second round of bidding. This time, it had no competition. Innove no longer participated.

Pascual said bidders can always post a non-Oracle bid, but the fact that none did shows that the product was the superior brand.

“But no one would definitely place a non-Oracle bid because the tailor-fitted TOR is part of the bidding documents. Bidders spend money just to get these. They assess whether or not placing a non-Oracle bid is worth the risk of being disqualified later on for not offering an Oracle product,” Borja said in Filipino.

ePLDT bags most big-ticket eUP contracts

Despite the lack of competition in the bidding, Pascual said the university got a great deal from ePLDT.

“*Nakatipid pa nga tayo eh* (We actually saved money),” Pascual said, noting the company’s total bid was P400,000 less than the ABC for the TOR.

But documents from the eUP team itself and the UP System Supply and Property Management Office show that ePLDT stood to gain more after the mother contract effectively made the corporation the project’s official partner.

An analysis of the 169 contracts that UP signed with different private firms for the project revealed that ePLDT got the most in terms of the sums involved in eUP contracts.

On top of the P135 million contract to provide eUP’s systems, ePLDT bagged P188 million from multiple transactions, one of which was already guaranteed by the mother contract.

The technical requirements in eUP’s TOR, for example, provide for the automatic two-year extension of UP’s use of ePLDT’s Vitro Data Center for the project’s server and storage systems after one year, for which the university will pay an additional amount that “must not exceed the cost of hosting service for the first year.”

Part of the project's design includes storing all of the university's information in a secure data center for safer and easier access. However, the mother contract specifies that its P135 million price tag only covers the first year of using ePLDT's data center.

According to a summary of finances provided by eUP's Training and Account Coordinator Nicalyn Clamor, UP obligated at least P23 million for the project's hosting expenses for its second and third year.

Aside from the TOR itself, ePLDT clinched five big-ticket contracts through public bidding. It had no competition at all in three of the five biddings.

Among these was a contract to provide eight back-up and mirror servers with an approved budget for contract (ABC) of P15 million, which ePLDT won in December 2012 with a bid just P300,000 lower than the ABC.

Another was the hosting of eUP's data for another year with an approved budget for contract (ABC) of P20 million. ePLDT bagged the contract in March with a bid of P19,999,988, or just P12 lower than the ABC.

A month later, UP also placed up for bidding the services of a company that will assist the project's developers in migrating data from the university's legacy systems to SAIS with an ABC of P30 million.

After three failed biddings, ePLDT bagged the contract with a bid of P29,988,000, or P12,000 less than the ABC for the deal. The corporate giant's other competitors for the bid—Beacon Solutions, its joint-venture partner in eUP's mother contract, and foreign firms OSI Consulting Inc. and Paul Bahnsch-KPMG Consulting Philippines—did not place a bid in all three rounds.

Since 2012, eUP's critics have warned of "vendor lock-in," or the forced subscription to certain brands, in the project due to the presence of Oracle and ePLDT's sister firm Smart Telecommunications in the text of the mother contract.

While ePLDT was not mentioned in the TOR, the document included a timeline of the project's goals, one of which was a memorandum of understanding on boosting WiFi connectivity with the telecommunication giant's sister firm Smart Inc.

In a statement in 2012, the eUP team said this MOU involved building a mobile laboratory for application development and creating IT courses. According to the TOR, the MOU was signed on March, a month before the scheduled bidding for the P135 million mother contract.

However, in an interview in March 2016, Pascual and Caro denied pushing through with the contents of the MOU and said this did not affect the bidding which ePLDT later won.

"Wala silang kaugnayan with eUP. Separate transaction 'yan (That has no connection with eUP. That is a separate transaction). How can there be a conspiracy?" Pascual said.

As for Oracle, Pascual maintained that the American software is being employed as best practice in several top universities, among them Illinois State University, the Pennsylvania State University, and the University of Cincinnati in the United States, and Ngee Ahn University and National University of Singapore in Asia.

"I only have an issue with this if (the brand references to Oracle were done) in order to get an inferior product. If it's to protect the interest of the university, then I see no problem," he said.

Pascual said should there be any lapses in relation to RA 9184, the references were “not a deliberate action to violate the law.”

While Belisario agreed that no agency would want to procure mediocre products, she said this still does not warrant limiting the competition of a public bidding.

“UP being the premier state university, it is not exempt from procurement laws, especially as it deals with public funds,” she said. #

B. New IT project sidelines UP’s homegrown talent

(Second of four parts)

A small, humble office in the University of the Philippines (UP) Diliman Computer Center used to be the home to some of the university’s best computer science graduates. Inside this building once worked UP’s top students like 20-year-old Adelen Festin who, given her staggering credentials—a Magsaysay Young Engineering Awardee and summa cum laude to boot—could have been anywhere else but there, earning a measly P10,000 monthly.

Since the ‘90s, the Computer Center has been a vibrant hub of analysts in information technology (IT) and student volunteers who were all dedicated in developing the campus’ academic database: the Computerized Registration System (CRS).

But after a recent IT initiative in UP dubbed as the eUP project, Festin and her colleagues are now just memories in the largely empty office.

Beginning in 2012, eUP ushered in a massive reboot of the university’s IT systems. Envisioned to modernize and integrate UP’s IT systems and infrastructure, the multimillion-peso project created five core information systems: the Student Academic Information System (SAIS), Financial Management Information System (FMIS),

Supplies, Properties, and Campus Management Information System (SPCMIS), Human Resource Information System (HRIS), and the Executive Information System (EIS)—that will help simplify, harmonize and speed up operations in the university.

“This will create the enabling environment for academic excellence and operational efficiency,” UP President Alfredo Pascual said.

The catch: These systems are off-the-shelf products of the American corporation Oracle and will replace all of UP’s existing IT innovations.

Rather than modernize and boost appreciation for the university’s electronic resources, the project has caused the reverse and has since started an exodus of the university’s IT talent.

eUP terminates homegrown systems

One flashpoint between the project and the university’s constituents was the forced termination of UP’s homegrown or “legacy” systems. For instance, upon knowing that CRS will be shelved under eUP, Festin and 10 of her colleagues in CRS refused to renew their contract at the Computer Center in 2014 and effectively resigned.

Annette Lagman, eUP’s Project Management Consultant, said her team tried to ensure the university’s legacy developers were as involved in the transition as possible, but homegrown programmers complained they were barely consulted.

For instance, Rommel Bulalacao, administrator of UP Los Banos’ SystemOne, said he only knew about SAIS and eUP during the kickoff ceremony of the project itself in June 2012.

For UP Baguio, CRS developer Jay Mapalo said the entirety of project already seemed to be decided during the first eUP meeting he was invited to.

“We never had a chance to ask (why Oracle software was chosen),” Mapalo said.

Such treatment has caused UP’s legacy programmers to postpone development of their systems and refuse invitations to join the eUP team.

“We all left the university out of principle. What else is there to develop for the system if it will be replaced soon anyway?” said Ramon and Olivia Guzman, Diliman’s CRS architects and Festin’s mentors.

UP’s homegrown systems

Prior to the project, each of UP’s eight constituent units (CUs) had its own homegrown version of CRS, which served as the academic database of each CU and the functional equivalent of the project’s Student Academic Information System (SAIS).

Unlike SAIS which was outfitted from Oracle’s PeopleSoft Campus Solutions, all these legacy systems were developed through open-sourced software, Java and MySQL.

These systems either started as a thesis in computer science or an initiative of masteral students such as the case of SystemOne in 2006 through then Prof. Rodolfo Duldulao.

Arguably, UP Diliman’s CRS is the most sophisticated, with 14 modules since its first version was developed by the Office of the University Registrar (OUR) and the College of Science in 1999. Diliman’s CRS was heralded so much back then that former UP President Francisco Nemenzo recalled the system being recognized by the newsletter of the Asean University Network in 2003.

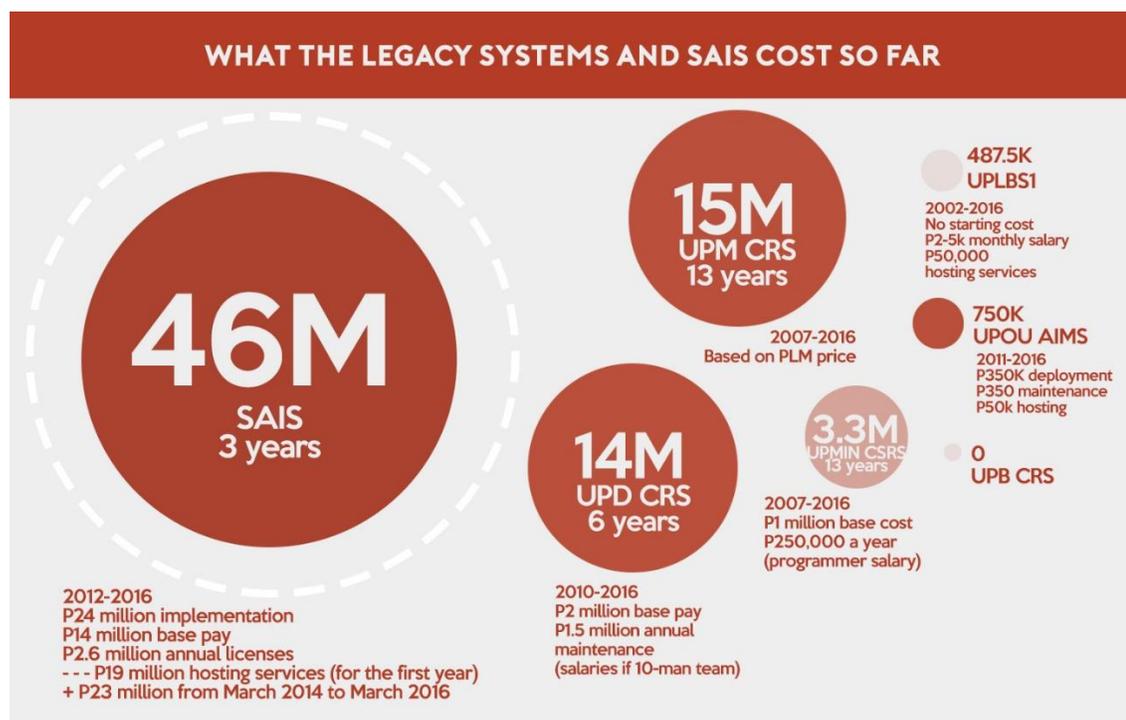
“CRS was praised because we were able to do it on our own and we did not buy it ready-made. The thrust of IT education is to train people to make their own programs, not just use programs from the shelf,” he said in an interview.

Another noteworthy system is UP Open University's Academic Information Management System (AIMS), which in function is equivalent to CRS. Developed in 2011, the portal was identified as a "convenient and effective venue for getting accurate and immediate information about their performance, school activities, (and) other learning transactions" by a study published by OUR staff Percia Secreto and Rhodora Pamulaklakin, in the *Turkish Online Journal of Distance Education* in July 2015.

Among UP's homegrown programs, Baguio's CRS virtually spent nothing in their entire run, from development to current maintenance. Meanwhile, systems with larger development teams and more modest salaries tend to shell out more money, such as Diliman's and Manila's CRS, which cost P14 million and 15 million, respectively, and Mindanao's Computerized Student Records System (CSRS) with P3.3 million since 2007.

Los Banos' SystemOne, on the other hand, has cost P487,500 since 2002, most of which went to annual hosting services pegged at P50,000 annually, while Open University's AIMS costs P750,000 since 2011.

Figure 10. What the legacy systems and SAIS cost so far



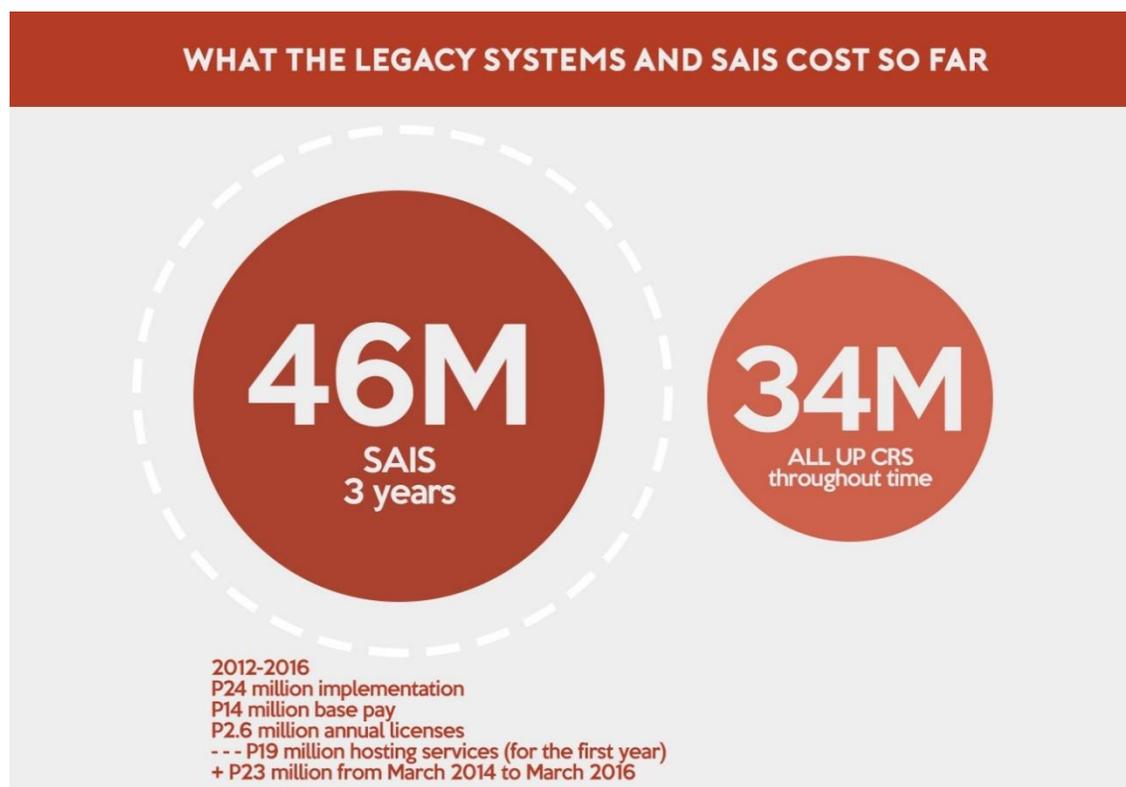
Homegrown versus SAIS

In comparison, the eUP project has already spent P46 million just on SAIS for the past three years, which will continue to cost the university P2.6 million in annual maintenance costs, according to this report's analysis of eUP's financial statement.

Because the systems are web-based applications whose data are stored on a remote centralized cloud server, SAIS and eUP's other four systems will also collectively cost the university another P19 million for the first year of the project and around P16 million in hosting costs at ePLDT's Vitro Data Center.

Excluding hosting services, this is 1.5 times what UP has ever spent on all of its legacy systems combined throughout the years.

Figure 11. *Cost comparison of expenditures for SAIS versus legacy systems*



No legacy system spared

Beyond UP's academic databases, the eUP project will be terminating the university's multiple legacy systems in finance, human resources and procurement.

In most CUs, rank-and-file employees already initiated their own computerization programs without their administration's directive, some as far back as during the '90s. Except for Manila and Baguio's Supply and Management Property Offices (SPMO), all units that will be using eUP's core systems already use a software or legacy system in their operations.

UP Open University, for example, developed a Microsoft-based version of the Human Resource Information System (HRIS) called HURIS, which maintains basic employee data such as staff profile and service records.

Meanwhile, Diliman's Supply and Property Management Office created in 2012 its own legacy system which allows it to manage procurement activities as well as link bid postings to the Philippine Government Electronic Procurement System (PHILGEPS), the government's pilot website for procurement activities, using just web-based tools.

Table 5. *List of legacy systems across each CU*

Constituent unit	Student Information	Human Resources	Financial Management	Supplies and Property
UP Diliman	UPD CRS	Foxpro	With legacy system	With legacy system
UP Los Baños	SystemOne	Spreadsheets and MS Access	With legacy system	With legacy system
UP Manila	UPM CRS	Personnel Data Tracking System (PDTS)	With legacy system	No legacy system
UP Visayas	UPV CRS	Foxpro	With legacy system	With legacy system
UP Open University	Academic Information and Management System (AIMS); MyPortal (Moodle)	Foxpro	With legacy system	With legacy system
UP Mindanao	CSRS	MS Office Applications	With legacy system	With legacy system
UP Baguio	UPB CRS	MS Office Applications	With legacy system	No legacy system
UP Cebu	UPV CRS	MS Office Applications	With legacy system	With legacy system

Compared to the P17 million spent on the perpetual licenses of FMIS, HRIS, SPCMIS and EIS combined, UP's non-academic legacy systems all cost nothing.

“Not only are our systems free of charge. They also work according to our processes, because we made them that way,” Diliman SPMO chief Dan Saguil said.

SAIS not yet fit to university processes

Pascual explained the project needed to spend millions of pesos to replace UP's countless legacy systems because they were all separate from one another.

“These (legacy systems) are all good systems, but they are all standalone. SAIS (and eUP's other systems) have more extensive features,” Pascual said.

Under eUP, all databases will be integrated with each other for faster and seamless data generation. Tuition payment processed through FMIS, for instance, will instantly be reflected in a student's record in SAIS.

“We recognize the good done by our legacy systems, but the natural path of progression is you start with your homegrown system then you move to something else. It was decided we use Oracle because it has easier and wider uses,” Lagman said.

Most CUs see the benefits of implementing SAIS due to its systems' interoperability. Under eUP, SAIS will be integrated with four other systems—the Human Resources, Financial Management, Supplies, Properties, and Campus Management, and Executive Information System—which allows for one-stop transactions and smoother generation of reports.

As of June 2016, none of eUP's systems has been integrated to another, with most lacking features and the EIS even being inexistent. One of the biggest advantages of eUP,

Pascual said, is the standardization of processes across the CUs, since it will be using only one system for all its transactions.

But while SAIS has many features, its nature as an off-the-shelf system makes it difficult to customize it according to the university's preferences or specifications, said Benedict Reforma, who handles the configurations for SAIS in Open University.

For example, SAIS does not have the equivalent of a batch run, which allows the students to choose their subjects and wait for the system to grant them a slot. This process applies to big CUs such as Diliman and Los Baños, where available classes and slots do not often meet the demand.

Should SAIS be implemented in Diliman, students would have to enlist their classes by appointment, which means enrollees in the last appointment schedule would have lesser chances of enlisting their classes, said Dr. Edgardo Atanacio, a member of the University Council committee on eUP.

Another difference lies in SAIS' inability to recognize the grade of 4.00, or "incomplete," said former SAIS analyst Armina Francisco. She cited cases in CUs such as Los Banos and Manila, where a 4.00 that was removed to become a 3.00 was computed by SAIS as a 3.5.

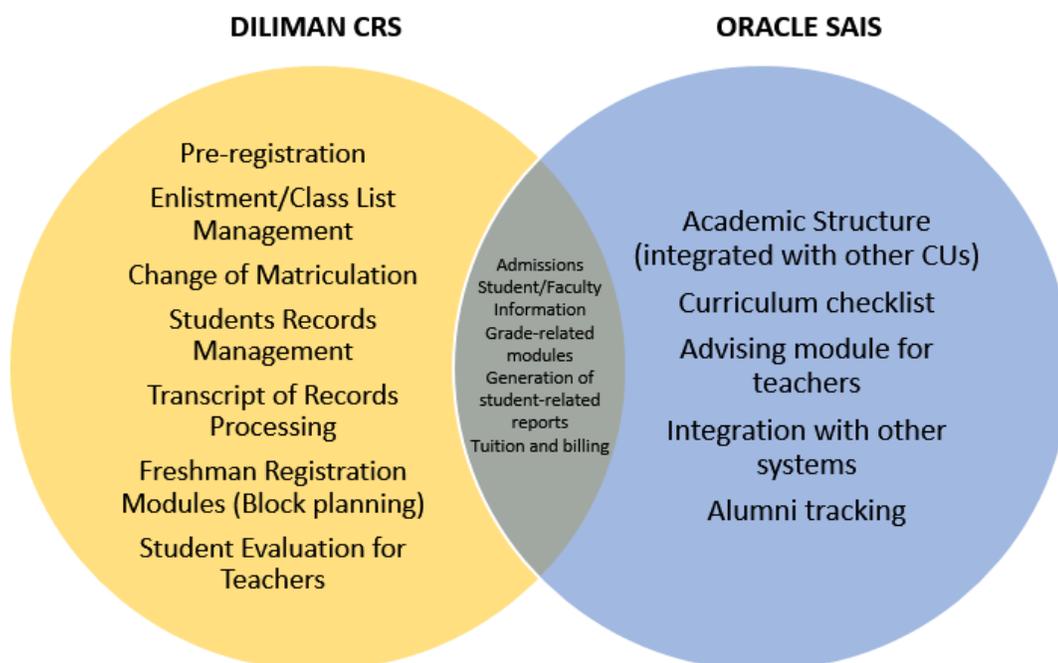
Other issues in the Oracle-based system include the lack of support for the change of matriculation process, which allows a student to add or remove classes even after he or she is paid, as well as the lack of overbooking control as SAIS overrides enlistment checks such as schedule conflicts and overloading, according to a technical report done by the de Guzmans on SAIS.

Pending finalized standardized policies, most CUs said they simply work around these issues.

“You cannot adjust practice just because you have to make it more convenient for the software. That’s why you pay for the software. It’s supposed to do things the way you do,” said Dr. Rolando Banzon, former Diliman vice chancellor for academic affairs.

Since the project’s kickoff in 2012, the eUP team has repeatedly promised new features that are currently unavailable in each CU’s legacy systems. For SAIS, the system will supposedly allow students to monitor the subjects he or she is taking according to his or her course curriculum.

Figure 12. *Comparison between Diliman CRS and Oracle SAIS features*



**Point of comparison is Diliman CRS as it is the system with most number of features among its counterparts*

Source: Ramon Achilles de Guzman, Diliman CRS architect, Terms of Reference of the Key Components of the eUP project, 2012

SAIS will also introduce an advising module for teachers, a feature that has already been developed for Diliman CRS to cover enlistment, dropping, and application for leave of absence but for some reason is left untouched, the de Guzmans said.

Most legacy developers argue they can develop the same features for UP's homegrown systems, especially in CRS, but Pascual and the eUP team believe this will only be a waste of time and resources.

“Let's say they can do it. But how long will it take? How much will we spend to develop software when we can use those resources for something else?” Pascual said.

Former Diliman Computer Center director Roel Ocampo pointed out that the current version of Diliman's CRS, Maroon, took less than a year to deploy with barely a fraction of the expenses that the university is spending on Oracle.

Such a narrative is consistent with other legacy systems like SystemOne whose team of students decided to create a new version from scratch in less than three weeks last year.

“I think UP at the moment looks like it doesn't have these resources, because UP effectively and ill-advisedly killed off any chance to do so. So without any intent, political will nor concrete plan to develop those other systems, it's really useless and unfair (to talk) about having ‘resources’ to do the thing,” Ocampo said.

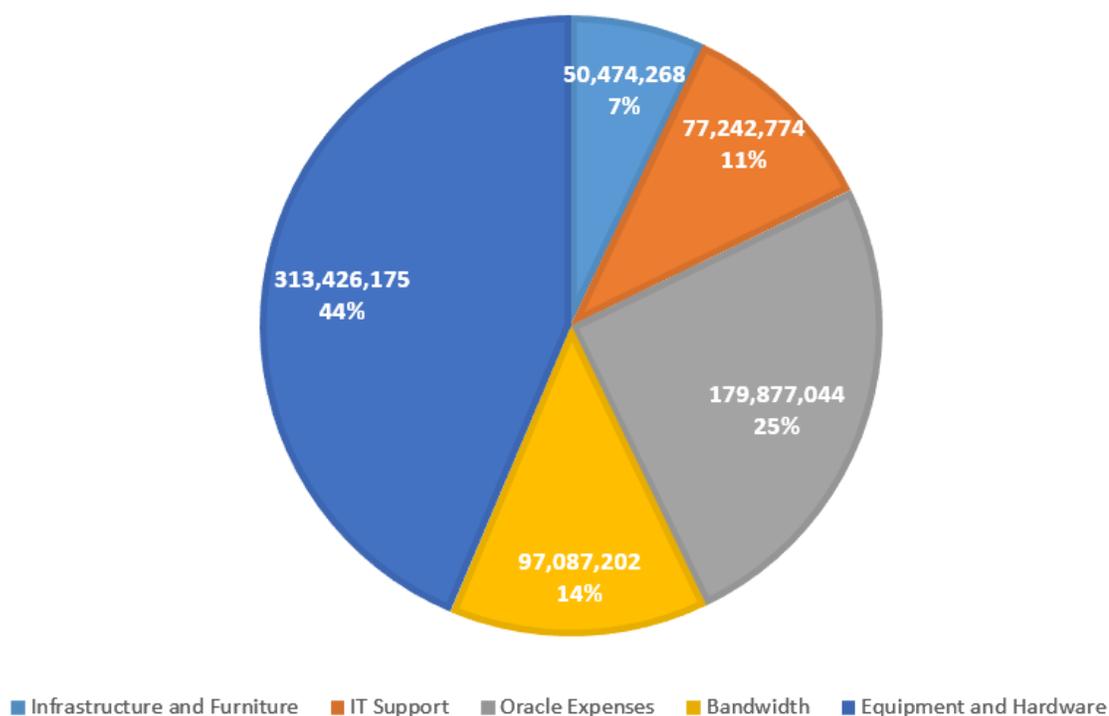
Project cost reaches P793M, exceeds initial estimate by P41M

If there were resources that could have been used elsewhere, Student Regent Miguel Pangalangan said Pascual should look no further than his own eUP project.

“It does not make any sense for us to spend millions of pesos to replace functional systems,” said Pangalangan.

According to a financial statement Pascual provided for this report but has not made public, the university had spent around P720 million on the project by the end of 2015, which was sourced from the 2013 General Appropriations Act, the 2012 Disbursement Acceleration Program (DAP) funds from the Commission on Higher Education, and UP's General Fund and Reprogrammed Funds from fiscal years 2012 to 2015.

Figure 13. *Breakdown of eUP expenses, 2012-2015*



Note: Infrastructure and furniture includes consists of fiber optic cables, generators and air conditioning units to be used by eUP offices.

The cost of eUP's core systems and other Oracle-related costs make up a quarter of the project's expenses, which include the P135 million "mother contract" that UP signed with ePLDT for its licenses and integration.

Table 6. Breakdown of the P135 million contract

I. Software Licenses	
HRIS	P9,892,314.43
SAIS	P14,080,905.22
FMS	P2,520,045.13
EIS	P4,765,308.71
Database Software	P790,594.56
Operating Systems Software	-
Identity and Authentication Management Software	P3,495,260.16
Other Software and Tools	-
Software Maintenance for the 1st Year	P7,819,773.91
II. Implementation Costs	
SAIS	P23,598,400.00
FMIS	P11,508,000.00
HRIS	P20,763,120.00
EIS	P7,560,000.00
III. System integration costs	P1,137,671.76
IV. Monthly hosting service cost (for 12 months)	P19,577,090.00
V. Training and other costs	P7,109,760.00
TOTAL	P134,618,243.88

Source: Jaime Caro, eUP project director

The biggest chunk of the project's expenses went to the modernization of the university's IT equipment and hardware amounting to P313 million, while P97 million was spent on bandwidth increase across the UP system. Pascual said this would complement the use of the equipment and eUP's systems.

While Pascual's financial statement shows eUP's expenses well below its projected cost of P752 million, this report found that this excluded a P23 million obligation in 2014 for the automatic renewal of UP's use of ePLDT's Vitro Data Center,

as well as two other contracts worth P50 million, bringing the project's costs to P793 million as of June 2016.

Pascual clarified that these are not additional expenses incurred by the Oracle systems, but rather, by UP's continued investment in infrastructure modernization, such as fiber optics and increased bandwidth.

“(There are those who say) it was better to have saved this amount, but this is (peanuts) compared to our annual budget of P17 billion. If we save this, we are dooming the university,” Pascual said.

Echoing Ocampo's sentiments, UP Student Regent Mico Pangalangan said this amount could have been used to give UP's IT talent a chance to further develop their legacy systems.

“With proper management and proper financial support, (UP) can produce something better than Oracle. There is a better return of investment if we support our students and faculty,” Pangalangan said.

No middle ground for eUP

Given Pascual's determination to push through with eUP, Li Bolanos, developer of Los Banos' graduate studies database GS Portal, proposed a compromise last year which would allow both legacy and eUP systems to coexist by using an application programming interface (API), a set of online tools and protocols that serve as bridges in between two or more databases.

“When we have an API in between systems, we can transfer data in real-time (as if they were integrated). We can supply requirements to eUP and at the same time still develop (our legacy systems) as supplement,” Bolanos said.

However, the eUP team rejected this suggestion over concerns about redundancy and added work.

“The work that will be involved is not easy. (eUP’s systems) can already do what CRS (and other legacy systems) can do, so why bother?” said eUP’s Communications Team Leader Joy Salvio.

Before the kickoff of the eUP project, many developers, especially those behind UP’s academic databases, had plans to improve the features of their systems. UPLB junior Computer Science student Christopher Templado, for instance, planned to make a mobile app version of the new SystemOne if the system would still be allowed to run.

But as each system in the project eventually goes live, the message for UP’s IT talent is clear: UP can no longer use its legacy systems.

“We are sidelining our gained IT knowledge over time just to inject the project’s systems,” SystemOne’s Duldulao said.

As the new Oracle systems are poised to take UP’s legacy systems’ place, the question remains whether these will deliver in performance as its predecessors, said Dr. Evangeline Amor, former Diliman University Registrar.

“The thing is eUP used public funds. This is taxpayers’ money. The money should at least have something to show for,” she said. #

C. Glitches mar SAIS use in 4 UP campuses

eUP team encoded ‘dirty’ data, lacked Oracle training

(Second of four parts)

There’s a joke in the University of the Philippines-Manila when classes are about to start:

“Sa UP, may mas malala pa sa singko: SAIS”

(In UP, there’s something worse than a grade of 5.0: 6.0)

This phrase, which plays on the Spanish word for the number six, “sais,” and proposing a grade lower than “singko” or fail, became a running joke at UP Manila in 2014 after the pilot testing of the Student Academic Information System (SAIS) in that campus paralyzed enrollment for a week.

SAIS, the university’s new enrollment database system under the eUP Project, drew flak from UP’s eight constituent units (CU) after minor to crippling glitches in the registration processes of UP Manila, UP Open University, UP Cebu and UP Baguio continue to beset the system since its roll-out in 2014. From assigning students wrong classes to inaccurately calculating tuition expenses, SAIS has become synonymous to long lines and manual enrolment processes, according to independent post-enrollment reports.

After receiving numerous complaints from students, UP President Alfredo Pascual and the eUP team said these glitches are just “birth pains” typical of massive information technology projects. Yet, revelations about the team’s initial lack of training in Oracle, the software used for SAIS, and its poor migration of data into the system show that beyond birth pains, eUP’s analysts were simply unprepared at the start of the project.

Enrollment mayhem at UP Manila SAIS launch

As of May 2016, SAIS has only gone live in four out of eight CUs. According to the project’s terms of reference (TOR), which defines the project’s objectives and

structure, SAIS should have already been deployed in all CUs, including UP Diliman, UP Los Banos, UP Visayas and UP Mindanao, in 2013.

Among the CUs that attempted to implement SAIS, Manila, the third most populous CU, suffered the most glitches and interruptions during enrollment.

During the first semester of academic year 2014-2015, problems with SAIS' database forced the Manila administration to postpone its July 30 to August 1 enrollment for its 6,000-strong student population by a week. Upon resumption on August 5, seven of Manila's eight colleges reported students being involuntarily removed from their enlisted classes in SAIS.

Due to their administration's inability to resolve these cases, units such as the College of Arts and Sciences declared all classes obtained in the system void and redeployed UP Manila's Computerized Registration System (CRS), SAIS's homegrown counterpart. The College of Pharmacy did the same, but resorted to manual enrollment.

Classes began, as scheduled in the academic calendar, on August 6—a day after the new enrollment period began—prompting professors to begin teaching without official class lists.

Prof. Lorina Alcid, SAIS' coordinator in Manila, said these glitches stemmed from the system's incomplete student data and inaccurate configuration of student year levels.

Like CRS, SAIS grants classes based on the restrictions tagged on it. For example, only graduating students may enroll in classes restricted to seniors.

SAIS currently determines year levels based on the number of units a student has taken. However, Alcid said this has become an inaccurate parameter of year-levels

because some UP students do not pass all of the units they have taken up. Some units that students take up may not even be credited by the curriculum of their course which lead to inaccurate calculation of their year levels in SAIS.

Paired with an incomplete database, SAIS, for instance, may label a graduating student as a sophomore and, thus, bar his or her enlistment to all senior-only classes. The same may happen for students who shifted or transferred from other courses or schools whose number of units taken may not necessarily reflect their actual year level.

Stephen Ko, SAIS' incumbent team leader, said the system was originally designed to determine year levels based on the number of semesters a student enrolled through the system.

But because there have only been four regular semesters since 2014, the team had to apply a "workaround" based instead on the number of units taken.

New SAIS glitches surface in UP Manila, Open University

By the second semester, inaccurate computation of tuition and other fees delayed enrollment in Manila anew. The college secretaries of the CU's seven units—Colleges of Medicine, Public Health, Arts and Sciences, Pharmacy, Dentistry, Nursing, and Allied Medical Professions—were forced to manually compute each student's matriculation on paper upon assessment, according to the UPM University Student Council.

To accommodate the long lines at the offices of the college secretaries, UP Manila's administration extended its January 7 to 11 enrollment by almost two weeks and moved the deadline of tuition payments to February 23.

When the new academic year began in August 2015, the system encountered another glitch that caused it to award classes to students who did not enlist in them.

By this time, SAIS had also been deployed in the university's only web-based CU, UP Open University, and met similar results.

On top of incorrect information encoded into the system and multiple downtimes during enrollment, a postmortem report by the OU University Registrar Ricardo Bagarinao revealed that SAIS incorrectly charged students paying through credit card.

At the Open University, its 2,500 students may pay their tuition online through credit card payment to Banco de Oro (BDO). However, the postmortem report noted that SAIS sent BDO incorrect information about payments, causing around 400 students to be charged extra fees or as much as double the amount of their matriculation.

Meanwhile, around 1,200 students reported that SAIS did not reflect their successful payments when making an account inquiry in the system.

By January 2016, Open University reverted to its legacy system, the Academic Information Management System (AIMS).

“Dirty” data cause recurring glitches

Ko said the glitches that Manila and OU encountered in 2015 were due to “dirty” data encoded into the system such as old course codes and incorrect tuition formulas for each college.

The team leader explained that eUP analysts in charge of “mapping,” or configuring CRS data into a SAIS-compatible format, back in 2013 did not do a good job and caused the migration of “dirty” data into the system.

“We noticed that a lot of (data) fields were still different between SAIS and CRS. All of the data have already been provided, so there shouldn't be a problem if these fields were mapped properly,” Ko said in Filipino.

According to eUP's TOR, the university's system integrator, ePLDT, must oversee the accurate migration of data from the university's legacy systems to SAIS and eUP's other systems.

For SAIS, the task itself is carried out by one of its subcontractors for the project: Techlogix, a Pakistan-based company, while other implementing partners such as Patch Solutions, IOM, and Beacon Solutions handle the Human Resource Information System, the Financial Management Information System and the project hardware.

Alcid said the "dirty" data encoded into SAIS stemmed from Techlogix's failure to properly guide eUP's analysts through the data migration phase.

"They (Techlogix) simply don't understand. For example, when we showed them data from CRS that were not in SAIS, they wanted us to just transfer it directly to the system without verifying it," he said.

Techlogix served as consultant for the SAIS team during the initial stage of the project. However, language barriers between eUP and Techlogix's Pakistani developers, and the latter's lack of appreciation of the project's complexity, made data migration difficult, said Alcid.

ePLDT later replaced Techlogix with another Pakistan-based company, Inbox, in 2014. but Alcid said those who worked for Inbox were the same people from Techlogix.

That same year, the SAIS core team itself completely lost its six original analysts in charge of mapping and data migration, leaving then newcomers Ko and eight others on their own.

Because Ko's team did not know how previous analysts mapped SAIS, the eUP team decided in January 2016 to simply purge and re-do what Techlogix and former SAIS developers had encoded before academic year 2013-2014.

eUP analysts lacked Oracle training

For their part, former eUP analysts blame their initial lack of Oracle training and the poor coordination of their team's implementing partners for their performance.

For instance, former SAIS analyst Armina Francisco said her team had to learn how to use Oracle software on their own.

"We never had Oracle training until recently. All the configurations we made were mostly based on observations and experience," she said.

Dr. Annette Lagman, eUP's project management consultant, said the project had to rely on the training of ePLDT's implementing partners due to the lack of Oracle trainers in the country, a claim disputed by former Diliman Computer Center director Roel Ocampo, as private information technology schools such as the Technological Institute of the Philippines offer Oracle courses to its students.

He said one need not look further: UP itself employs professors well-versed in Oracle such as Engineering professor Dr. Rafael Ramirez.

Pascual clarified that the Oracle trainers in the country do not have expertise on PeopleSoft Campus Solutions, e-Business Suite and Business Intelligence—the software that eUP's systems are based on—and if they do, they are rarely available.

Poor coordination with project partners

As such, ePLDT's partners—IOM, Patch Solutions and Inbox—were tasked with training eUP's analysts through informal sessions as the project went along.

But former eUP members said such system of training sometimes left them in the dark whenever they want something accomplished.

For SAIS, registrar staff complained Techlogix and Inbox's were difficult to reach. During SAIS' roll-out in OU, registrar staff Kay Enrile said Techlogix and Inbox were not readily available for help and training.

"They're based in Pakistan so they have a different time zone from us. They're able to resolve some issues, but only those that are easy to fix. For issues like changes in the workflow and other online requests of the OUR, they take too long. They have yet to deliver our requests since 2015," Enrile said.

Meanwhile, for FMIS, former co-team leader Juvy Camua said her analysts had to learn Oracle on their own when their implementing partner, IOM, took too long in responding to their questions about setting up a production instance, or the live server for each CU's data.

Before FMIS was deployed in 2014, Camua's team emailed IOM asking for instructions on setting up a production instance. But after months of no definite reply she decided to have her analysts learn and create it on their own.

"We had to do what should have been the job of IOM (like report templates and the production instance) because they are slow. Had we not taken initiative, FMIS may still not have gone live right now," Camua said in Filipino.

According to eUP's TOR, FMIS should have gone live as early as 2013.

Pamoda Weerawansa, IOM's project manager for eUP, denied being late by months in responding to any concern. He said his team usually takes about "three to five days" to reply to queries but sometimes has to refer to Oracle itself for help.

“For some of the issues, it’s not really the database. Sometimes it’s the infrastructure, so that’s not IOM’s job anymore. They might think it is our job but really it’s not. For reports, (we already provided it to them). After they accept it, that’s not our problem anymore. We are not obliged,” Weerawansha said.

So far, there has been no major problem with the project’s hardware, which is mainly managed by Beacon Solutions, said Prof. Rommel Feria, the project’s hardware and network team leader.

Former eUP analysts said this reliance on implementing partners for basic Oracle system training can discourage them from forming their own ideas about the software independently.

“Had there been Oracle training from the start, we could have learned enough to explore the systems on our own. What was happening was that we simply relied on what our implementing partners say when developing the system,” said Jared Refamonte, a former HRIS analyst.

The eUP team bought formal training for its members through the Oracle University program only in 2014 through the help of Beacon Solutions.

Lagman initially said the training cost P50 million, but later retracted her statement in an interview with President Pascual.

While the eUP team has yet to provide the exact price of the contract, a cross-checking of a list of all the Oracle training sessions the eUP team has taken up with the Oracle University website showed that the trainings may have cost at least P3 million.

Smoother implementation in Cebu, Baguio

After receiving formal training on Oracle by 2014, SAIS' deployment in two more campuses, Cebu and Baguio, went smoothly, with issues and glitches related to the system getting resolved after its pilot tests.

Cebu and Baguio each have only around 2,000 to 3,000 students.

UP Cebu implemented SAIS in 2014 after it was granted autonomy by the Board of Regents, the highest policy-making body in the university, while Baguio rolled out the system by the midyear term of 2015.

While enrollment in Cebu encountered few glitches, Cebu's University Registrar Purita Baltazar said problems on training on SAIS use, data preparations and configurations occurred during the go-live.

Before SAIS, Cebu had been using Visayas' CRS for its student records management.

In Baguio, incorrect loan assessment and socialized tuition discounts affected its enrollment during its midyear pilot testing, according to an assessment report of the UPB University Student Council.

“Bracket D *ako tapos bigla kong nalaman na* bracket B *ako* (I am bracket D, but SAIS tagged me as bracket B). That is P10,000 more in tuition payment. So *kinailangan ko pa dumaan sa OSFA* (So I had to go through the Office of Scholarships and Financial Assistance) to have it changed,” recalled Levy Orcales, UPB USC Councilor.

All of UP's eight CUs implement a socialized tuition system (STS) that classifies students into five alphabetical tuition groups based on their ability to pay.

While Ko's team primarily handles the migration of data from legacy systems to SAIS, the accuracy of the data depends heavily on the office providing them. In the case of STS brackets and loans, it was Baguio's Office of Student Financial Assistance (OSFA) that provided the data to the SAIS team.

"Eh mali ang binigay nila (But they gave us wrong data)," said University Registrar Jocelyn Rafanan.

According to the UPB USC's report, almost one in two students spent more than 10 hours in line or almost two to three days in campus to enroll in what would otherwise had taken less than a day prior to SAIS' deployment.

Orcales said the lack of proper training and information on how to use the SAIS further compounded the long lines from OSFA to the Auditorium, where all enrollment-related processes are centralized.

"Bigla na lang kaming nagulat na SAIS na pala kaya hindi namin alam kung paano gamitin. Kahit hanggang ngayon, hindi talaga user-friendly ang SAIS (We were all surprised that we're now going to use SAIS even though we didn't know how to use it yet. Even now, SAIS has yet to be user-friendly)," Orcales said.

Currently, SAIS' interface involves more steps and unique pages than CRS. Lagman said the team will start hiring experts "very soon" to improve the interface of all eUP systems, but stresses that its stability and complete implementation remain to be her top priority.

As of May 2016, only five out of 13 modules are operational in the system: Admissions, Gradebook Assignment, Enrollment, Self-Billing, and Self-Service. Ko's

team has started work on the self-advising module to roll out for Manila, Baguio and Cebu.

“Para kaming ginawang guinea pig, pinaglaruan muna. Hindi man lang muna inayos nang mabuti ang sistema (We were treated like guinea pigs. Why didn’t they fix the system first before implementing?) It just caused too much inconvenience,” Orcales said. #

D. Admin policies on FMIS double work for employees

Slow ‘net speed hampers use of other eUP systems

(Last of four parts)

As the day comes to a close in the University of the Philippines-Los Banos (UPLB), students, faculty and employees alike rush to head home against the growing darkness, eager to call it a day.

But for many inside all of UPLB’s financial offices, they are unable to close shop just yet. For some, they may stay for a couple of hours. For others, an entire weekend. And for the truly unfortunate, they are forced to work through the holidays.

“Isang araw ka lang mawala, matatabunan ka na ng papel (Be absent for a day and you’ll be swamped with paperwork),” lamented Joan Mendoza, Los Banos’ Accounting chief, whose staff had to stay throughout the Yuletide season last year to catch up on work.

With hundreds of paperwork still piled up on their desks, UP employees throughout the university system are held hostage not by their own work but by a program that is supposed to make their work a lot easier: the Financial Management

Information System (FMIS), one of the five key information systems of the university's biggest information technology project: eUP.

In line with the project's goal to automate university processes, the eUP team deployed the FMIS in all of UP's Budget, Accounting and Cash Offices, the Human Resource Information System (HRIS) for the Human Resource Development Offices, and the Supplies, Properties, and Campus Management Information System (SPCMIS) for the Supply and Property Management Offices during the past two years.

Together, all three systems are envisioned to integrate and simplify financial transactions, employee data and procurement processes. Yet, contrary to promises of increased efficiency and streamlined bureaucratic processes, the reverse has happened so far due to issues ranging from a mismatch of administrative policies, slow internet connection, and lack of clear university directives on when to use the systems.

Parallel run doubles employee work

For FMIS, only one out of eight modules is in use across all of UP's campuses: the Disbursement Module, which handles the payment of several transactions from salaries to contractor dues. The rest—Budget, Inflow and Outflow of Funds, Trust Fund Management, among others—have yet to be deployed because of the lack of end-user training.

Despite only one module fully functioning across all CUs except Diliman, FMIS has caused a large-scale culture of overtime shifts due to the redundancy of work under it.

As of June 2016, the eUP team and university administration required financial offices to process documents called Disbursement Vouchers (DV) using both the manual paper procedure and through the FMIS.

Processing a DV for the payment of salaries, for example, will need to go through the traditional method of submitting documents personally and passing them through all three financial offices, and having the concerned units accomplish each step's counterpart in FMIS as well.

“This is because the Commission on Audit (COA) has yet to allow us to fully implement a paperless online system. They still require government agencies to submit the physical documents of transactions,” said FMIS' former co-team leader Juvy Camua.

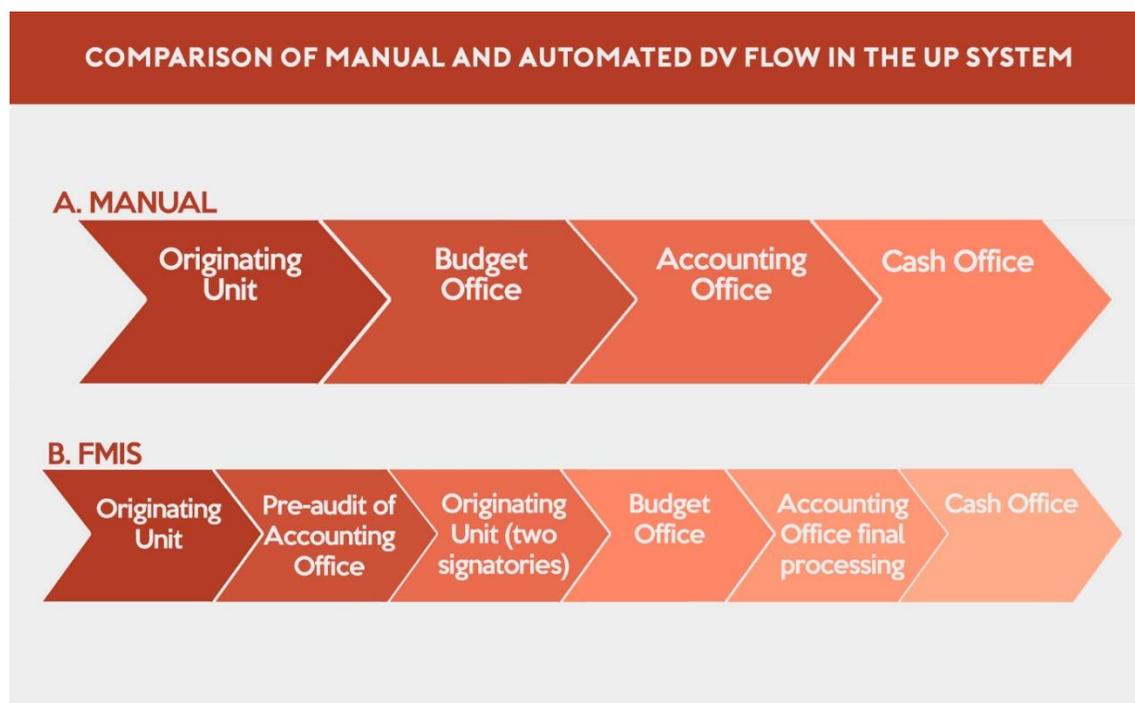
The DV flows through a chain of approval which begins from the unit it originates from to the Budget, Accounting and Cash Offices.

In Cebu, Visayas and Mindanao, inaccurate configuration of FMIS' DV flow prompted their administrations to isolate the use of the system to their Accounting Offices. But for UP's other five campuses, the FMIS can process vouchers from start to finish, bar some glitches that cause DVs to get “lost” and directed to the wrong offices.

Contrary to FMIS' goal of streamlining processes, such a directive has caused the productivity of the Budget, Accounting and Cash Offices' to drop and prompted the need for regular overtime shifts for its employees.

Part of the problem lies in FMIS' introduction of new steps in the DV flow. In the manual process, the originating unit generates DVs, which are then submitted to the Budget, Accounting and Cash Office. With the parallel run, however, DVs are required to pass through both the originating unit and Accounting office twice to verify both paper and scanned documents.

Figure 14. Comparison of manual and automated DV flow (simplified) in UP System



Such disparity among processes has caused offices to take overtime shifts to catch up. In UPLB, for instance, Mendoza said her office often has to work weekends just to complete their work.

Along with their Budget and Cash counterparts, employees regularly clock out only by 7 p.m., two hours past their working hours, to finish encoding FMIS data, often without overtime pay. The work has been so much that the Cash Office has hired a separate contractual employee to do most of FMIS' tasks

“Sa ngayon, dagdag trabaho talaga ang FMIS. Dagdag trabaho and at the same time kailangan kaming makapagproduce ng output (Right now, FMIS just adds to our workload. It’s added work and at the same time we need to produce the same output),” Mendoza said.

Before FMIS was implemented, all employees can process all of the DVs that go through their office for the day, Mendoza said. But with the new system, each desk is behind at least 200 to 350 vouchers.

This backlog initially delayed payments to university suppliers and, in one instance, the salaries of thousands of contractual employees in Los Banos by a month in 2015, she said.

According to the FMIS team and the financial offices themselves, the massive backlog initially stemmed from a UP systemwide “*hintayan* (waiting)” policy, which barred DVs from being processed in one office until both its FMIS and paper versions are approved.

For DVs to be processed, they must first be approved by a series of employees, including but not limited to fund controllers, budget directors, department heads or deans, and chancellors.

“Assigned approvers often forget to process the DVs in FMIS either because their internet connection is slow or they simply have other work, causing delays,” said Mendoza.

CUs later rescinded this policy, but offices still report backlogs of DVs of as many as 50 to 100 a day. The common culprit among all CUs for this backlog: slow internet speed.

Slow internet connection affect eUP system use

Internet connection is crucial throughout the execution of tasks in eUP, not just for FMIS, but for the other four information systems of the project as well.

This is because the systems are web-based applications that store all its data on remote servers, while the systems themselves are only useable with an active internet connection using HTTP as its primary communications.

During the last two weeks of March, Los Banos' financial offices could not even finish a single DV on FMIS because the system kept loading and closing on its own.

“But we could still access other (internet resources) such as Yahoo! Messenger,” Los Banos' Budget Officer-in-Charge Janina Yuson said in Filipino.

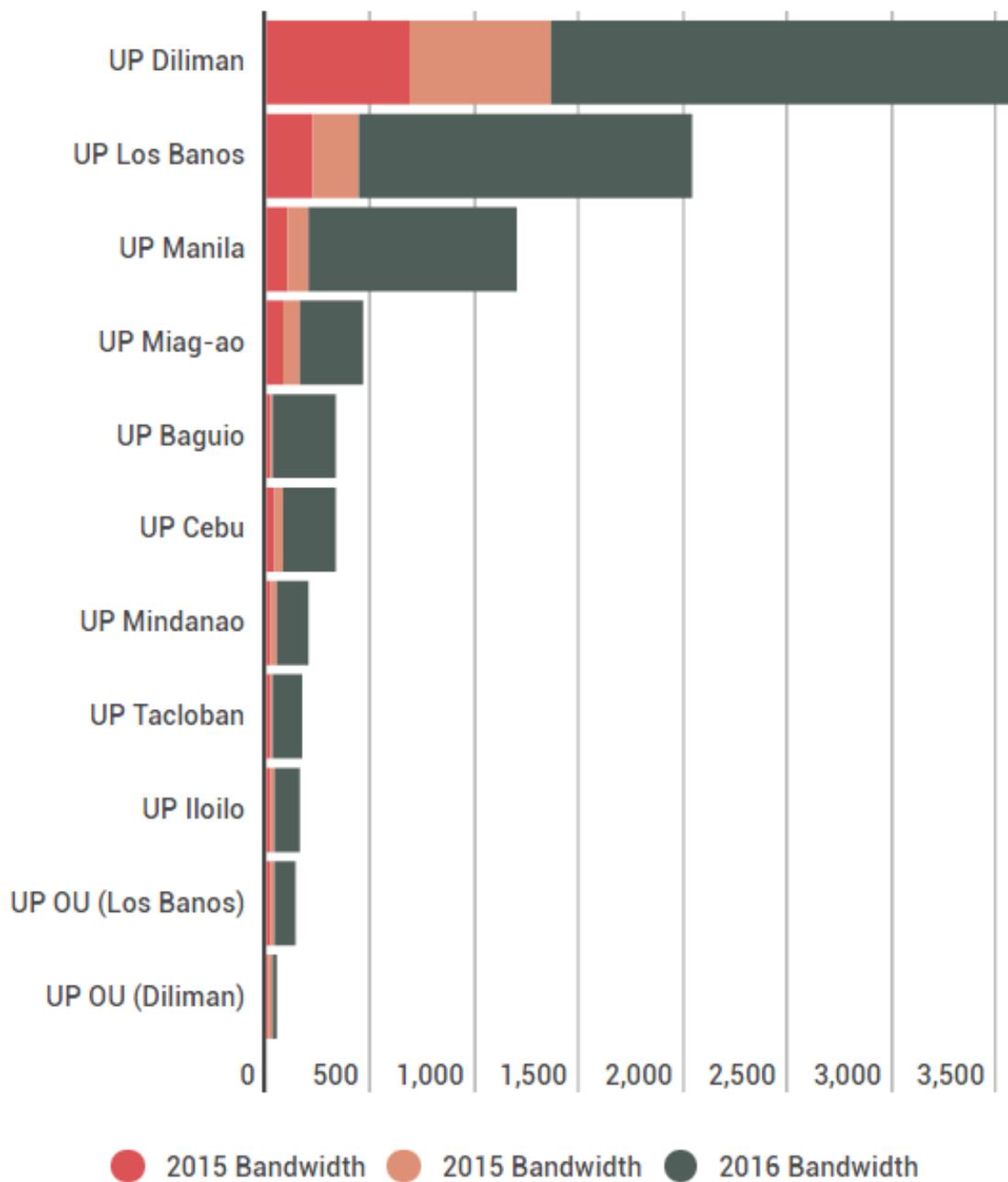
UP's legacy developers said such internet issues may be due to eUP's centralized cloud computing structure, where all data are coursed through a single powerful server.

But the eUP team explained that users continue to experience slow speeds using eUP's systems because CUs have yet to release the increased bandwidth that they procured.

Since the project began, UP has been procuring additional bandwidth every year, as part of the efforts to modernize current IT infrastructure in the university.

In 2016, the procured bandwidth for the entire UP System grew 43 times the size five years ago. Diliman alone received 2,250 mb/s, or one-third of the total university bandwidth. Manila and Los Banos, two of the largest CUs in the system, both received 1,000 and 1,600 mb/s, respectively.

Figure 15. *Bandwidth increases across the UP System, 2010-2016, in megabytes*



Source: *Dr. Alfredo Pascual*

According to Dr. Annette Lagman, eUP's project manager, CUs may not be able to release their increased bandwidth yet as they have to fix their equipment first to ensure it can handle the increase.

The eUP team projects full bandwidth increase by midyear of 2016. Until such time, the team will just have to keep pushing through with project implementation despite slow internet speeds to avoid further delays.

As a result, employees like UP Baguio Budget Office head Larry Laureta can sometimes incur around 70 to 100 DVs in backlog.

Once the internet speed picks up again and FMIS becomes accessible—usually beyond working hours—finance employees catch up on missed DVs in the system. But this entails going back through all the DVs and documents, whose paper version was already approved before, to be encoded and processed in FMIS.

“Employees are able to process the paper DVs faster because they don't have to rely on internet connection which can often slow them down entirely,” Yuson said.

Minimal use of FMIS, HRIS, SPCMIS due to slow internet in initial eUP roll-out

The eUP team said that all of FMIS, HRIS and SPCMIS' modules are already developed and ready for use. The reason behind their minimal use today: the lack of sufficient training on using them.

Interviews with the staff of offices that use eUP's systems show that UP employees lack sufficient knowledge on FMIS, HRIS and SPCMIS' modules because of the constant suspension and interruption of training sessions due to slow internet speeds.

The staff from Los Banos and Diliman's HRDO and financial offices, for instance, report that training on the HRIS and FMIS can sometimes be concluded in the

middle of the day or become ineffective when lecturers switch to their Powerpoint presentations rather than conduct hands-on lessons on the systems itself.

The project's implementing partners which conduct these sessions, such as IOM, would then have to reschedule training with end-users, causing the roll-out of eUP's systems to get delayed in the long-run.

According to eUP's original timeline, FMIS, HRIS and SPCMIS were expected to go live between April 2012 and November 2013. However, only HRIS was able to meet its deadlines as it went live in UP Baguio, Los Baños, and Visayas as early as 2013, ending with UP Cebu in 2015, making it the most successful eUP system implemented to date.

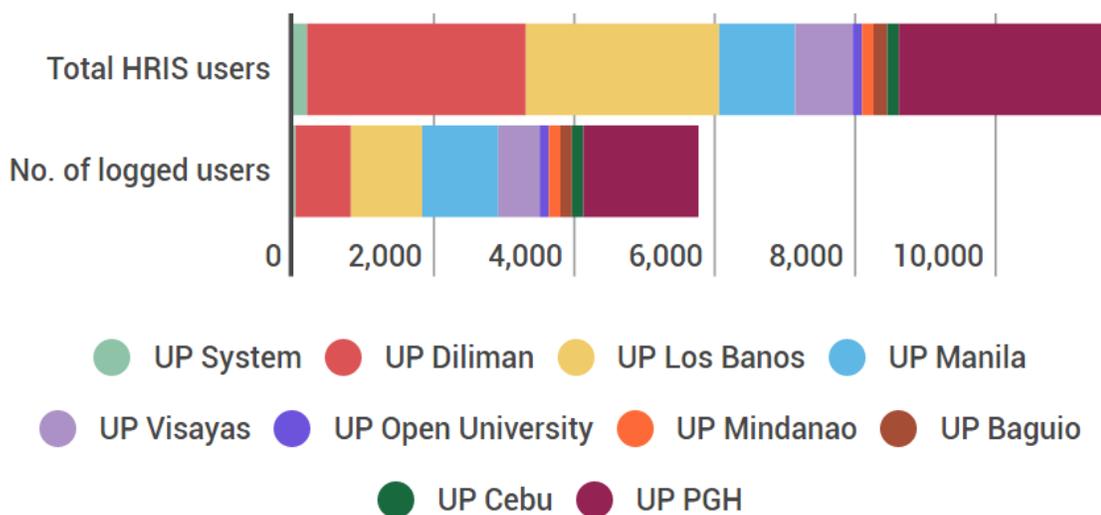
But even after training, use of HRIS and SPCMIS modules still remain minimal because of employees' limited access to computers and an internet connection.

Out of HRIS' 11 modules, for instance, only one is currently available in the entire university: the Personnel Information module, which allows for the creation of Statement of Assets, Liabilities, and Net Worth (SALN), monitoring of service records, requests for certificate of employment, as well as leave balances.

HRIS' team leader Vince Teodosio said this is because of the failure of HRDOs to immediately migrate data from their legacy programs and the inability of employees to enter their data in the system.

Data from the eUP Communications Team show that one out of two UP employees has yet to log on to the system. Only UP Open University and Mindanao recorded 100 percent of logged users.

Figure 16. Total number of HRIS users, number of logged users across the UP System



Source: Roadshow slides for UP Diliman, Feb. 8, 2016, from the eUP team

This dismal rate can be attributed to the slow internet connection and lack of computers for each employee throughout UP's campuses, as is the case with distant CUs like Mindanao and Yolanda-ravaged Visayas.

In Los Banos, for instance, 400 farmworkers and laborers employed by the CU are unable to access HRIS because they do not have computers of their own.

But Pascual blamed a supposedly systemwide resistance to change, stating that his administration has repeatedly urged them to use the system and allowed the use of office computers to no avail.

Due to the insufficient training and lack of data in the system, HRDO employees can only use the HRIS for viewing personal information.

So far, HRDO of all CUs do not know when they will begin using the other modules for HRIS.

Unclear SPCMIS directives hamper its use

While slow internet speeds also hampered its implementation, the full use of SPCMIS is crippled by the lack of systemwide directives to use the system.

“*Walang balita or email, wala nang* communication from the eUP team regarding implementation (No news or updates from the eUP team),” said Stineli Magdadaro, UP Cebu Supplies, Property and Management Office (SPMO) chief.

Cebu once attempted to deploy SPCMIS back in 2014, but failed after encountering errors in the creation of its annual procurement plan (APP), the consolidated report generated by all SPMO offices.

Since then, the eUP team has not updated these offices about the use of SPCMIS.

Dan Saguil, Diliman’s SPMO chief, stressed the need for such a directive, as the use of SPCMIS is really reliant on its users.

In order to generate consolidated reports such as the APP and the project management procurement plan, users themselves need to generate the data using the SPCMIS, he said.

“They think because it’s SPCMIS, only the SPMO will use it. But the use of the system is highly reliant on the users. If they do not use the system, then we’re unable to do so as well,” Saguil said.

Similarly, Open University tried using the SPCMIS to generate its APP this January, but ended up going manual because end-users still submitted manual copies of their purchase requests, said Pura Amoloza, SPMO chief.

“*Paulit-ulit na kaming na-train* (We have been repeatedly trained) on how to use the systems. The problem is that we aren’t told to use (the systems),” she said.

“Necessary evil”

In stark contrast, the UP administration continues to require employees to use the FMIS parallel to their manual tasks, as per COA’s directive.

Pascual said COA refused to allow UP to fully conduct paperless transactions despite talks with the commission since 2011.

“What complicated our implementation ultimately is that the government is not ready to handle an automated process despite commitments to e-governance,” he said.

When asked why FMIS was deployed without COA’s nod in the first place, Lagman said the parallel run of tasks was a “necessary evil” for mastery.

To address concerns about increased workloads, Pascual said the university has begun amending its FMIS work flow to limit the need of manual paper processes at the end of a task.

However, neither the eUP team nor Pascual could give a specific date when the parallel run requirement may be lifted.

As the project continues its fourth year in implementation, eUP’s systems have yet to deliver on its promises of increased efficiency and reduced manual tasks. Pascual himself conceded that he may not be able to see the end of the project by the time he bows out of the presidency this year.

“The delay, although I’m disappointed, is a delay I can explain and accept. I’m worried in the sense that I will not be able to fully demonstrate the benefits (of eUP). But I will relish the fact that I was able to start it and bring it to the level that it is now,” the President said.

But for union and student leaders on the ground, who face the project's systems on a daily basis, sentiment toward eUP remains critical. Vocal critics like Ramon Guillermo, president of the All UP Academic Employees' Union, slammed the administration for its poor project implementation, causing unnecessary burden on students and employees alike.

“They are forcing this software down our throat and that is a recipe for disaster,” he said. #

CHAPTER VI. SUMMARY AND CONCLUSION

A. Summary

The eUP project, the University of the Philippines' (UP) biggest information technology project to date, has yet to streamline bureaucratic processes in the university. Poor project planning has led to several delays in the project, while glitches and errors continue to undermine the integrity of the eUP systems: the Student Academic, Financial Management, Human Resource, and Supplies, Properties, and Campus Management Information Systems (SAIS, FMIS, HRIS, and SPCMIS).

A closer look at the project's procurement documents and timeline revealed that the eUP project was tailor-fitted to Oracle by referring to the brand multiple times in its Terms of References. This violates Section 18 of Republic Act 9184, or the Government Procurement Reform Act, which disallows references to brand names.

Instead of boosting appreciation for information technology (IT) modernization, the project has instead started an exodus of disenfranchised university's talents, who have been developing UP's legacy systems. A comparison of the eUP systems' costs and features against their counterpart legacy systems show that the latter's merits outweigh the former.

Meanwhile, the efficiency and effectivity of each key core information system has yet to be seen as all four systems were deployed with incomplete modules. As a result, minor to crippling glitches continue to beset the systems since their implementation in 2014, as was the case with SAIS' implementation in UP Manila in August 2014 and UP Open University in August 2015.

Despite efforts in modernization, the university's IT infrastructure remains ill-equipped to handle such a big-ticket project. Problems such as lack of or malfunctioning equipment and slow internet connectivity continue to arise in each CU. This has led to poor experiences in using FMIS, HRIS and SPCMIS, especially in distant campuses such as UP Los Banos, Visayas, and Mindanao.

Both former and current eUP team members point to their initial lack of training in Oracle, the enterprise resource planning software used for the project, and the lack of coordination between the team and their implementing partners: ePLDT, Techlogix, Inbox, Patch Solutions, and IOM.

Administrative policies also compound to the issues surrounding the eUP project. FMIS users, for example, are burdened with extra work stemming from the parallel run of both manual and automated processes, as discussions on paperless transactions with the Commission on Audit continue. SPCMIS and HRIS, on the other hand, are suffering from lack of users, as the UP administration has yet to issue a directive mandating their use.

B. Conclusion

While eUP's vision to integrate the university's vast data remains a worthwhile effort, the multi-million project has very little to show for and may not even reach completion by the time Pascual bows out of the presidency at the end of the year. Administrative obstacles and poor project planning rendered the university severely ill-prepared for the ambitious project.

Contrary to its role as the bastion of good governance, UP failed to exercise due diligence in the project's procurement activities since the start of the project, where the

75-paged terms of references that defined eUP's structure and purpose mentioned Oracle 22 times.

eUP and Oracle's ability to reflect the university's needs is put into question, especially in the light of recurring glitches and errors that aggravate the already-bureaucratic processes in the university. UP's legacy systems, which are all slated to be shelved as soon as eUP is in place, continue to be more relevant to the workflow of students, faculty, and staff.

President Alfredo Pascual has repeatedly maintained that Oracle was chosen for the project because it is already employed as best practice by several universities around the world. However, no benchmarking study was done prior to the project, which would have defined the university's technical requirements alongside comparisons of different softwares, although Pascual sent a delegation to Ngee Ahn University and National University of Singapore, both of which were Oracle users.

Given these, the eUP project has yet to achieve operational efficiency as promised, despite exhausting far more resources than initially projected.

CHAPTER VII. IMPLICATIONS AND RECOMMENDATIONS

A. Theoretical Issues

The findings of this study corresponded well with the integrated theoretical framework, which utilized the DeLone and McLean model of information systems (IS) success and the Open Systems Theory, to show how the implementation of an enterprise resource planning (ERP) project such as eUP plays out in the context of the University of the Philippines.

First, the Open Systems Theory explained how the university's environment—the demands for global competency, and the growing need to manage its vast data— influenced input in the form of the budget and resources that UP invested for the project.

The project's output, which are then measured by the metrics provided by the DeLone and McLean model of IS success, helped determine the efficiency and effectivity of the eUP project. As the study found out, the eUP systems continue to have recurring glitches and errors that affect its information, system, and service quality.

Disenfranchised legacy developers, as well as disgruntled employees, reveal low user satisfaction as the legacy systems continue to be more relevant to their workflow.

The findings of the study also implied that effective project management, or the establishment of clear work plans and policies conducive to the project, can be a crucial metric of success. Related literature showed this to be relevant to the success of any ERP implementation, and as such may be integrated into the framework.

For further studies, additional metrics for ERP success may also be analyzed, such as the critical success factors mentioned by Rabaa'i (2009): business project reengineering, training, ERP integration, among others.

B. Methodological Issues

The study employed an investigative approach to an issue that is heavily technical in nature. It employed both qualitative and quantitative methods by conducting people and paper trail, which the researchers triangulated with information and documentation culled from different sources.

The study, which spans the entire university system, necessarily required nearly a hundred sources in order to establish a holistic perspective on the efficiency and effectivity of the project. This is because each of UP's eight constituent units has at least eight different offices that use the five key information systems. Extensive interviews with key sources, including legacy system developers, former and current members of the eUP team, information technology and procurement experts, and President Pascual himself, provided a more comprehensive understanding of the project, which led to the conclusion of this study.

The study was also heavy on the paper trail. The manual audit of the procured items under the eUP project proved to be useful in establishing the project's expenses, which the Pascual administration refused to release to the public. As such, the researchers were able to find violations of the procurement law, and that the project went P41 million beyond its initial projected cost.

For further studies, the researchers propose several methodological approaches, such as adding more case studies, especially from the student and faculty population. A more comprehensive comparative analysis of the legacy systems, particularly of the FMIS, HRIS, and SPCMIS counterparts, can also be explored.

Studies narrowing the scope to each constituent unit (CU) can also help explain the nuances of the collective experience under the eUP project. This will provide a more extensive understanding and perspective on an individual CU's issues and concerns.

Finally, a systems analysis audit built on the measures provided for by the DeLone and McLean model of IS success, may also be done. While the narratives of the case studies, especially by those who were directly affected by the use of the eUP systems, have been extremely insightful and relevant to this research, an audit will provide a more quantitative analysis of the effectivity of the project.

C. Practical Issues

The study found that, contrary to its vision, the changes implemented by the eUP project have yet to efficiently streamline bureaucratic processes, and exhausted far more resources than initially projected. Meanwhile, the university's administration unilaterally pushed for the project to the disenfranchisement of the university's pool of talents and resources.

With this, studies can be made regarding administrative policies and directives that affect the university's own talents for research and development. An example of this would be to look at the university's investment in its legacy systems, and how it plans to foster their development alongside the eUP core information systems.

A systems analysis and design study on the eUP systems may also be pursued, especially in the fields of information technology, engineering, and computer science. This will help provide a more technical discussion on the feasibility of the systems alongside the work processes of the university, and will be able to provide more concrete solutions and recommendations regarding their improvement.

A post-Pascual administration report on the eUP project may also be pursued. This includes an analysis of the fulfilment of the objectives set by the Pascual administration for the project. Policies and project decisions that will be made by the incoming university president may also be discussed.

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