

5.6 Management of the Ongoing Structural Changes Toward Comprehensive Institutional Research: Case Study in Petra Christian University

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Introduction

The external environment that is always changing brings a great influence to Petra Christian University (PCU). In the last ten years, the number of academic departments has grown to twice as many as it was before. As a consequence, the old university systems cannot accommodate it anymore. The administrative systems cannot support the fast changes in the academic management systems. There is a gap or imbalance development between both systems. PCU has been trying to establish many projects for accommodating the changes that emerge, before incorporating it into the old systems to create new or improved systems. However, as time goes by, the number of the additional systems that reflected by the projects become more significant and higher. Unconsciously, the University has already been managing the changes. However, since it will bring the great impact on the structure of the University, how to deal with this situation has to be carried out carefully. This paper proposes that PCU do the comprehensive institutional research in managing the ongoing structural changes in order to set new and robust systems for the University. Also, this paper will discuss a research design for one of the projects. That is Integrated the Computerized Management Information Systems (MIS) project.

State of the Art

Petra Christian University (PCU) is a private university and was established in 1961 in Surabaya, East Java-Indonesia. Since it is not a state or public university, it has to finance itself for all of its activities and resources. The main revenue comes from the tuition fees. Nowadays, there are 6 faculties that comprise 16 departments, 13 supporting units (centers, bureaus, etc) and 12.000 student bodies. As a private University, it has the YPTK (Yayasan Perguruan Tinggi Kristen Petra) as the foundation that stands before it as mandated by the national law. However, the relationship between University and YPTK must be clear enough in order not to raise some questionable issues, such as the autonomous to some extent. Both of them sit together to formulate the University mission and vision. Yet, the YPTK can take a part in the strategic policy level at the University. The University Strategic Plan focuses on the Caring Attitude, Global Perspectives, Information Technology (IT)-based Campus, Excellence and Efficient as well as Effectiveness.

Realizing several facts, such as the five focuses of the University Strategic Plan, the growing number of higher educations, the lesson from other universities abroad in dealing with quality of teaching and learning, as well as its status as a private university, PCU has been doing the continues improvement in all aspects, in order to gain sustainable future in the long run. The University grows very rapidly since last decade. The number of the academic departments is twice as many as it was before. The intent to increase the quality of teaching and learning in using the new advancement in technology make a pressure in how to accommodate it in the old University Systems. This growth is supposed to be balanced with the infrastructure and the management information system itself; otherwise the University will play outside its own system (like repairing the cloth by patching it many times, doing many things in an ad hoc manner). To handle the pressures that come up, the university has to act as a learning organization. According Peter Senge, learning organization is an organization that is continually expanding its capacity to create its future. "Being the learning organization, organization will be able to sustain its comparative advantage vis a vis a growing number of institutions entering the market of higher learning" (Fremerey, 2000). In response to the power of unavoidable changes in the overall University Systems, PCU has been creating many projects for handling some issues that come up. As shown in figure 1, these projects comprehensively form the structural changes that must be faced by the PCU. They are:

- (1) Refunctioning the administrative and academic staff,
- (2) Revitalizing TEC (Teaching Excellence Circle),
- (3) Performance Measurement Systems
- (4) Integration of the Computerized Management Information Systems/MIS
- (5) New Internal Auditing and Quality Assurance Systems,
- (6) Restructuring the Accounting and Financial Systems (including the well-implemented Investment Center (IC) Concept by the university and establishment of Revenue Generating Systems).

Teaching Excellence Circle plays a vital role in enhancing the quality of teaching and learning process in PCU. However, it needs to be revitalized. The activities of TEC are supposed to increase, while the new teaching and learning methods and tools because of the advancement in IT emerge. The growth of PCU brings the daily processes of the University become more complicated. There are additional processes and procedures that must be added the regular ones in order to accommodate the changes. It directs the attention of the Dean, Head of the Department and Bureau to handle more tactical and even operational matters or problems that come up. Those problems could not be delegated anymore since problem solving needs a specific authority. It also distracts the Presidency since the workload of the Dean, Head of Department and Bureau is getting higher. The existence of New Internal Auditing and Quality Assurance Systems for PCU will give a great assistance in dealing with these problems. The systems will keep the business processes at the University always be focused on the quality enhancement.

PCU has already established the teams for each project mentioned above. The team has already worked too. However, those innovative projects finally become un-utilized and suddenly it is just un-implemented, like there is no more energy in bringing them into practice. Most of the projects are unfinished and uncompleted. The University might not realize that all of the projects make up the structural changes, which is actually on its way. Now the structural change is ongoing at the transition stage in PCU and it has to be managed. PCU has to identify whether particular project that has fully implemented can be formalized into the regular structure and systems of the University, so that the new systems are established.

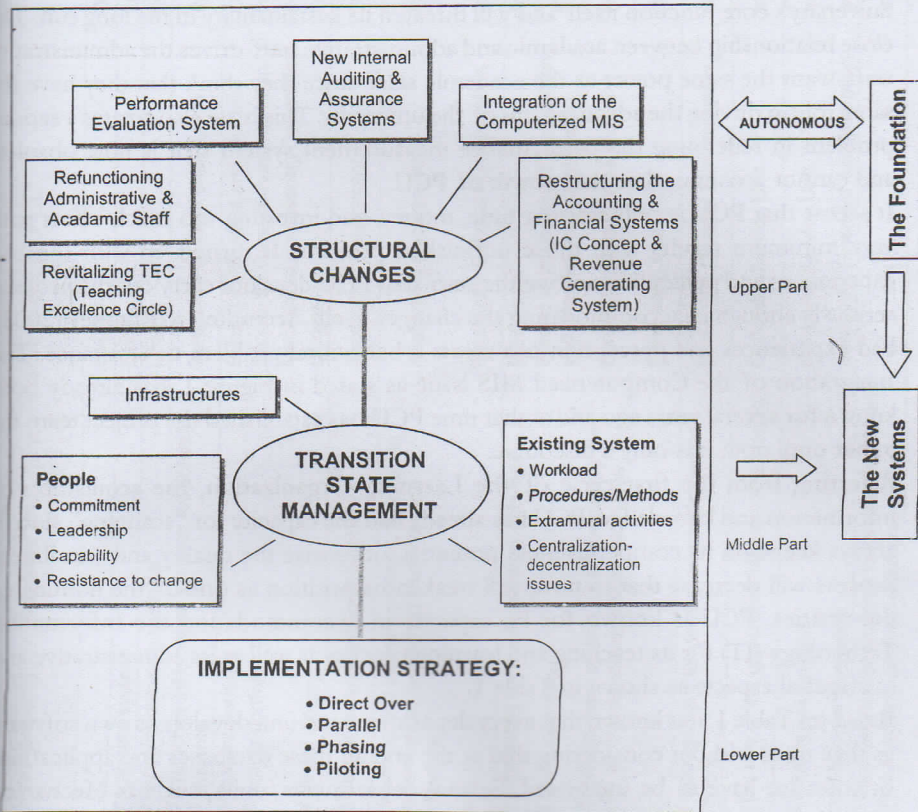


Figure 1: Comprehensive Institutional Research Model

Realizing that the academic department is the core function and center of change for universities, the departments have to be fully supported by PCU, such as giving them the departmental autonomy and power to established more conducive environment to grow as stated by Walvoord. Another support must come from the administrative units. However, this support cannot be provided easily by the administrative staff since there is a problem of unclearness role between academic and administrative staff. This problem happened because the administrative systems are not flexible

enough in supporting or accommodating the fast movement of the academic management systems. Since it is very difficult to recruit the new administrative staff with certain capabilities that can resolve these issues, PCU draws a policy to involve the academic staff to bridge this gap. However, it seems that the involvement tends too much so that creating role disturbance between both of them. PCU need to work on Refunctioning the Administrative and Academic Staff Project as shown in figure 1. PCU's overall policies in most aspects such as budgeting and financing, assets management, as well as human resourcing are guided by the centralization idea. It is necessary to redefine PCU's centralization policy; otherwise it will jeopardize the university's core function itself and will threaten its sustainability in the long run. The close relationship between academic and administrative staff drives the administrative staff want the same power as the academic staff since they think that they have the same role in driving the advancement of the university. This issue also creates a serious problem in redefining the performance measurement system that is now obsolete and cannot accommodate the growth of PCU.

It seems that PCU is only wasting time, money, and investing too much effort with very minimum results with those unfinished projects. It turned up with the bad experiences and perception among the staff that PCU does not carry out the projects seriously enough in accommodating the changes itself. According to Romney (2002), bad experiences and perception can create a behavioral problem or resistance. The Integration of the Computerized MIS issue as stated in Figure 1, has already been known for several years ago and at that time PCU has established the project team for it, but until now, it is only a discourse.

Referring from the first cycle of the Learning Organization, the acquisition of information and knowledge, PCU has already had the capacity for "scanning" since it always keeps on its competitiveness potential, otherwise the quality and enrollment process will decrease that in turn, will weaken its position as one of the nominated universities. PCU is known for its capacity in accommodating the Information Technology (IT) for its teaching and learning process as well as its administrative and managerial aspects as shown in Table 1.

Based on Table 1, it is known that every department and unit develop its own software as they need without considering that at the end all these databases and applications or software have to be integrated. Several departments/units, such as Mechanical Engineering Department, Management Department, Bureau for General Administration are still developing their own software. Also, E-learning software is still on the development process.

When the software was developed, there was no general policy at the university level regarding the platform used. Might be, PCU had not realized yet that someday all of the software have to be integrated. The centralization policy as a general policy in university might not been implemented properly in the University's information systems. The existence of different software and even different distributed databases prove that what happen in the practice had not in accordance with the centralization policy as stated by the University.

Table 1: The Use of IT (MIS sub-projects) for Academic and Administrative Work in PCU

Software Name	Function	Owner	Developer	Platform
Spektra	Library management system	Library	In-house	Xenix/unix
New Spektra	Web based library information systems	Library	Outsource	window
YES (Young, Excellent & Smart)	Web-based interactive information systems for potential high school students	Bureau for Student and Alumni	In-house	
Student Portfolio	Web-based student portfolio	Bureau for Student and Alumni	Outsource	
Faculty Portfolio	Web-based faculty portfolio	Bureau for General Administration	In-house	
PCU-CAMEL	Web-based Virtual Library	Mechanical Engineering Department Library	In-house	
Incu-VL			Outsource	
C-ACE	Students exit exam for Accounting department	Accounting Department	Outsource	Windows Server, SQL Server
C-ADIS	Monitoring teaching and learning process, monitoring students' performance, monitoring students' non academic activities	Accounting Department	Outsource	Windows Server, SQL Server
Professional Filing Systems	Filing Systems	Bureau for General Administration	In-house	Windows, Access
Scheduling Systems	Web-based scheduling for the Presidency activities	Presidency	In-house	Windows
Cooperation Software	Tracking all the cooperation	Bureau of Institutional Development and International Relationship	In-house	Windows, Access, Delphi
SKKK	Web-based management system for administering the credit point for all the mandatory student activities	Bureau for Student and Alumni	In-house	Linux, MySQL, Php
Purchasing & Asset Management		Purchasing Unit.	Outsource	WinServer 2K3 web, SQL Server, ASP
Gen. Administration Information Systems	Information management for general administrative and human resource.	Bureau for General Administration	Outsource	Windows.NET
Class Operational Systems	Scheduling the use of the classroom, lab and other facility	Computer Service Unit	In-house	Windows Server, SQL Server
Equipment Maintenance & Services	Web-based information systems	Computer Service Unit	In-house	Windows Server, SQL Server, ASP
Budgeting	Activities and Financial budgeting	Bureau for Financial Administration	In-house	
ASIT	Web-based info systems for students to keep track of their performance in academic and non-academic matter		In-house	

Now PCU has difficulties in integrating all of them since the platforms of all the applications are very different. It also creates another problem when there is a need in getting the data. The data is there, in different database, and sometimes takes a long time and difficult to be compiled, although IT itself provide this ease when it is well managed. Referring to the learning organization, PCU cannot disseminate the data well within the existing information systems that dispersed throughout the university. Often, data from one department is difficult to read by other department or unit since the integrated information systems has not been implemented by PCU. Nowadays, PCU is also trying hard to set the system for managing the control over the assets and resources with the support software that is in the ongoing development. It is very important to manage the assets and resources well since they can bring the possibility for additional income generation for PCU. So far, the control over assets and resources is laid on the departmental or unit level, except control over the use of classroom that is fully centralized. From the standpoint of university interest, it is a loophole in control. Asset, resources and facilities are very easy to be misused. Department and unit have too much control over the assets and resources by using their own special characteristics, like autonomy and academic freedom of the discipline for the department. On the other hand, there are also weak performance measurement systems that can be linked with the financial and activity performances for each individual staff and department or unit itself. This case worsens because of the misimplementation in financial responsibility center concept for years by PCU. PCU uses the Investment Center (IC) concept in such way that can lead the serious problem in control issues, as well as in performance measurement systems. Restructuring the accounting and financial systems, as shown in Figure 1, will be one of the projects for accommodating the changes that happen in the University. This has a great impact throughout university systems. It will be very beneficial if the university can incorporate and integrate this system into the Integrated MIS since the systems in the University are getting complex.

Although PCU has already been supported by the IT, still, there is difficulty to pull out some interdepartmental data for doing the analysis and decision making because of the lack of integrity in PCU's information systems. Sometimes, the Presidency need to have access to an aggregate data that must be provided by their subordinate (without giving the subordinate itself a big picture and aggregate data as an implementation of centralized policy), however their subordinates can not be able to provide without knowing the aggregate data itself. This is an issue of controlling and disseminating the data that can be perfectly done by the support of information technology. The adoption of the integrated information technology and systems for the budgeting aspect can be used as a tool to overcome this problem to create a better understanding between them. The integrated information technology and systems means that there should be a databases or even data warehouses that contain every data resulted from the financial aspect, students and their achievement, lecturers and other administrative staff's data and performances, teaching and learning advancement, and other data that support the decision making processes. By the adoption of

technology, it is possible to give authority to get an aggregate data that picturing facts or phenomena that are usually needed by the top level management in University and YPTK. The database can also be distributed to the faculties and departments with the certain access level of security to support their daily activities and decision making process. By the well-implemented and well-integrated computerized MIS, the data that spread throughout university can be pooled and utilized for strategic analysis and decision making. Therefore, Integrating the Computerized MIS is very important agenda for PCU since it has a great impact for the University, as stated in the one of the PCU's Five Years Strategic Plan, that is being an IT-based campus.

Therefore, it is necessary to pay more attention to the factors that will probably hinder the successful implementation of the Integration of the Computerized MIS Project, such as the technical problem, the people, including the existing of suspected resistance to change, the infrastructure and existing procedures and method applied in the University, as shown is middle part of Figure 1. By knowing the factors that have close association with the success of the Integration of the Computerized MIS Project, PCU can consider and choose the implementation (conversion) strategy which is best suited with the existing condition in university and its department or unit. Such strategies are revealed in the lowest part of Figure 1. According to Romney (2002), there are four kinds of implementation strategy, namely:

- **Direct conversion:**
immediately terminate the old system when the new one is introduced.
- **Parallel conversion:**
operates the old and new system simultaneously for a period of time.
- **Phasing conversion:**
gradually replaces elements of the old system with the new one
- **Piloting conversion:**
implement new system just in one part of the organizational systems, when it works then all the old systems will be replaced with the new ones.

Objectives of Research

- Proposing that PCU do institutional research on how to manage the ongoing structural changes, that were reflected by the projects for accommodating the changes that have to be faced by the University.
- Providing research design for the certain project that is chosen/ prioritized in the comprehensive institutional research in order to implement the change step by step or piece meal approach.

Due to the time, effort and fund that will be consumed in implementing this comprehensive research, it is important do a piecemeal research approach to develop a research model in order to have great possibility to be implemented in PCU as soon

as possible. By doing it, this paper will provide the tools of research in detail. On the other hand, this detail research design of a certain or individual project can also be used as a research prototype for the comprehensive institutional research that encompasses the individual project itself.

It is assumed that the Integration of the Computerized MIS project will be the first priority throughout the projects, since this project seems to have a greater impact on other projects. Another consideration is that PCU has its strategic plan that focuses on the caring attitude among the students, staff and stakeholders, global or international perspectives, IT-based campus, excellence, and efficiency as well as effectiveness. As stated by Fielden, "An effective MIS is becoming one of the two pillars of university management along with a strategic plan. It is important that we achieve an MIS without too much disruption" (Fielden, 1997, p. 1). PCU has already been working very hard to bring the strategic plan into the reality as an IT-based campus. It can be seen by the existence of software that has been developed in-house by the academic and administrative staff in most of the bureaus or units. It means that the most of the staff have already had the skill and capability in using the computer in their work, so it can be expected that the implementation of this project will be much easier. If this project of integration can be implemented smoothly in PCU, then it also can be expected that the management of change will be successful. The reason is that this project has direct influences in the daily activity in all of the academic departments and units.

Questions/Assumptions

Referring to the Comprehensive Institutional Research Model in Figure 1., there are some questions that can be raised:

1. How to manage the ongoing structural changes?

- Why most of the projects are unfinished or uncompleted?
- Which project should be carried out first?
- What kind of implementation strategy that might be chosen to implement new systems?

2. How is the research design for the chosen project? (Integrated MIS Project)

- Why the integrated MIS Project difficult to be implemented?
- Which department/unit is ready for giving full support for project?
- How can integration be achieved?
- What kind of implementation strategy should be applied?

Methodology

Research Model for Managing the Ongoing Structural Changes

As presented in figure 1., the analysis concerning the people who are involved, the existing systems and infrastructures as well as the relationship between PCU and the Foundation can be used to find out why the necessary changes reflected by the projects cannot fully be carried out. The data needed for analysis consist of the data generated from the existing data base and the data resulted from the questionnaires to the university staff and the Foundation. Detail explanation about the data can be found the Research Model for Managing the Integrated Computerized MIS Project as written in the second part of the Methodology section of this paper.

For choosing the most important project which should be prioritized, it needs the comprehensive analysis on the strategic plan and current condition in PCU. Besides, according to Whitten (2001), PCU has to do the feasibility analysis that consists of:

- **Operational feasibility:** measure how people feel about the changes
- **Technical feasibility:** measure the practical aspects of the solution and the availability of technical resources and expertise.
- **Schedule feasibility:** measure the reasonableness of the timetable.
- **Economic feasibility or cost-benefit analysis:** However, it should be noted that there are intangible and tangible cost and benefit. In most cases, for IT-project such as the Integration of Computerized MIS project the intangible benefit is much higher than the tangible cost. By looking only at the tangible aspect, such project will never be implemented, since the tangible cost usually much higher than tangible benefit.

Since it is assumed that the Integration of Computerized MIS project is chosen as the first priority to be implemented, the research model must also be discussed in the following section of this paper.

According to Romney (2003), each implementation strategy such as direct conversion, parallel, phasing or piloting strategy has its own advantages and disadvantages as shown in table 2. It will become a major consideration in choosing the implementation strategy.

Which strategy is chosen also depends on the result of the analysis of the people in each department or unit that involved in particular project, infrastructures and existing systems as well as the technical issues associated with the project.

Table 2: *Advantages and Disadvantages of the Implementation Strategies*

Implementation Strategy	Advantages	Disadvantages
1. Direct	<ul style="list-style-type: none"> ▪ Appropriate when the old system has no value or the new one is so different that comparison between the two is meaningless ▪ Relatively inexpensive 	<ul style="list-style-type: none"> ▪ High risk of failure ▪ Need tremendous back up
2. Parallel	<ul style="list-style-type: none"> ▪ Protect the systems from errors ▪ The most-used or popular strategy 	<ul style="list-style-type: none"> ▪ Stressful for employees - needs to process all transactions twice ▪ Costly
3. Phase-In	<ul style="list-style-type: none"> ▪ Relatively moderate strategy 	<ul style="list-style-type: none"> ▪ Cost of creating the temporary interface between old and new systems is relatively high ▪ Time consuming
4. Piloting	<ul style="list-style-type: none"> ▪ Localized the conversion problems ▪ Allow training in a live environment 	<ul style="list-style-type: none"> ▪ Need interface between old and new systems until all parts of the new systems have been implemented ▪ Time consuming

Research Model for Managing the Integrated Computerized MIS Project

Since there are many MIS sub-projects for academic and administrative needs as revealed on Table 1, the research will be done by grouping the sub-projects. Grouping can be done based on the owner, user or the functionality of the particular software or information systems. It is assumed that the integrated software has been chosen already whether by buying the software that are provided in the market such as Peoplesoft, SAP, and Oracle, or by developing in-house. However, in choosing which one is the best alternative for PCU, the University has to do the feasibility analysis as explain before in first part of the Methodology section.

The model shows several reasons why a full implementation of the MIS project might become a problem for PCU. It has close association with people, infrastructures, existing systems as well as the relationship between PCU and the foundation. However, this research will be focused on the first three components, namely people, infrastructures and existing systems.

1. People

Organization must be sensitive to and consider the feeling and reactions of a person affected by change (Romney, 340). There are several aspects that need to be explored, such as the commitment, leadership, capability, as well as other reason for resistance to change.

a. Commitment

“Organizational commitment is defined as the extent to which an employee identifies with and is involved in an organization” (King, 146). MIS project is the work that needs the full support of presidency down to the lower level management who always use the MIS for their daily activity in the work place. This full support is needed because of the significant investment in time, effort and money. Thus all staff, units, departments, faculties, PCU, including the Foundation must have commitment before they make a decision to integrate all of the information system in PCU. Without a strong commitment to prioritize this work in all level of the PCU organization structure, the work is only wasting time and money since the project will be unfinished or become a never-ending process without clear final results.

- The importance of Integrated Computerized MIS project to the staff, students, presidency, and the Foundation
- The willingness to put effort, to spend time and money in prioritizing and doing this project of the Foundation, presidency and the staff.
- The importance of this project in supporting the individual job and the sense of belonging for MIS project.
- The employee turnover, especially the employee who has dealing with MIS sub-project in each department/unit.

The employee turnover data can be generated from the existing database and other data can be collected by questionnaire.

b. Leadership

This research will use the Leadership Matrix that provides a visual representation of departmental needs in relation to proactive or transformational leadership characteristics. It enables the chair of departments or units to assess their strengths and the area in which they can increase their effectiveness in order to deal with the integration of MIS project. The matrix can be use as a first step in a goal setting and team building process. Leadership Matrix is shown in Figure 2 and was introduced by Ann F. Lucas.

Several items that must be taken into account in this research are:

- The challenging process of ongoing quality improvement in all aspects in order to cope with the changes. It is important to ascertain that there is always willingness to look for the opportunity to make things better.
- The existence of clear and well-communicated shared vision to all staff who get involved in a certain department or unit and sub-project. It is also important to see whether the vision is results in concrete plans and implementation steps.
- The staff’ empowerment. It is important to recognize the innovative idea that comes up from the staff and giving the support by facilitating and translating the innovative thoughts into actions.

- The positive insight in handling the problems that enables individuals to find opportunities in solving the problem and identify resources for problem resolution. Negative insight such as blaming each other and un-resolved conflict are evidence that there is no good leadership.
- The space for encouraging the Heart. Encouraging the heart deals with “the chance to feel intellectually and emotionally challenged by their work, to perceive opportunities for personal and professional growth, to participate in decision affecting their own development, to feel that they are part of an important ongoing enterprise, to know that they make a difference, and to be given recognition and visibility” (Lucas, 1994, p. 63).

Importance to the Department

A Opportunity for leadership development	B Savor success & maintain effectiveness
C Low priority for change	D Doing fine but limited time spent

Satisfaction with Skill Development

*Figure 2: Completed Leadership Matrix - Importance of Leadership Responsibility and Perceived Skill Level of Chair (Plot Ratings in Appropriate Cells)
(Adapted from Lucas, Ann F., Strengthening Departmental Leadership, p. 33)*

Each individual rates each item on a scale of 1-4 in terms of their importance to the department and their degree of satisfaction with the chair's or leader's current level of skill development. If each item falls into scale 1 in term of their importance to the department and scale 4 in terms of satisfaction with skill development, the leadership status is in cell D. It means the leadership in a certain department is doing fine but the chair is devoting too much time and energy for it. A result in cell A reveals an opportunity for leadership development, the rater finds the responsibility of the item rated is very importance but the skill for taking on that responsibility are low. This leadership matrix is useful for mapping the existence of leadership in the university as a whole and in each department or units as required for implementing the integrated

MIS project. Each person involved in the particular department or unit that will be affected with the integration of MIS project must be questioned whether the leadership responsibility exist and the chair has a certain skill level that is needed to be a leader.

c. Capability

The more staff who are IT literate, the easier is the process of integrating the MIS. Since most of the MIS sub-project in PCU is created in-house, it means there are many staff that have computer skills. Nevertheless, it is very important also to get more information from the existing database and questionnaires. The information that must be collected is:

- The educational background and/or experience in computer skill for each staff in each department or unit.
- The age of each staff member in each department or unit. Older people tend to be difficult to learn how to use computer. They might be reluctant to deal with computer on their daily activity.
- The capability of the programmer staff in all department and unit in a certain technology such as certain computer languages is also important to be collected to see the strength of staff' capability in integrating the MIS.

d. Resistance to Change

According to Romney (340-341) how people resist to change can be manifested in three forms. First, aggression is a resistance behavior that has intend to destroy, cripple, or weaken the effectiveness of the systems. Second, projection is a behavior that always blaming the new system for any and every unpleasant occurrence. The last one, avoidance is the behavior that always tries to avoid new systems and expecting that the system will go away or resolve itself. However, these problems can be prevented by identifying the reasons why those happen by considering the following factors:

- Manner in which change is introduced. The rationale behind the implementation of this project must be well-communicated to the staff in order to achieve goal congruence between the goal of the individual staff, department or unit and the goal of PCU as a whole.
- Experience with prior changes. PCU has already been having the idea of integrating MIS years ago without any significant progress. This discourse may create bad experiences and perception on the staff and make them reluctant for supporting the implementation of integrated MIS project.
- Biases and natural resistance to change. Sometimes there are staff who have a difficult personality or have an unstable emotional but also have power to other staff.
- Fear. staff may also feel afraid of losing their job, loss of respect or status, etc when the integrated MIS has been implemented and want to have the status quo.

2. Infrastructures

Certain hardware specifications and software for integrating the MIS have to be provided, since the software that exist have different platforms that are incompatible and cannot be integrated without the existence of the integrating software. The infrastructure data that must be gathered are:

- The existence of required IT facilities and specifications, such as hardware, software, network, database, security, books, user manuals, etc that are compatible for implementing the integration of MIS Project.
- The number of computer with proper requirements for each department/unit
- The accessibility of the facilities and infrastructures for staff associated with this project.
- The Foundation's support on this project, not only from the budget stand point, but also from the clarity of certain policies that need to be formulated in order to be incorporated into the computerized information systems.
- The consideration to hire external consultant team that has expertise in implementing the integrated MIS for higher education, especially when the workload of the staff are high enough and there is less expert in a particular software that will be implemented in PCU.

3. Existing Systems

The existing system has a great impact for the success of this integration project. Management of the project such as this MIS integration project should be handled by project management team, not by attaching this project into a regular job of the staff.

a. Workload

Data about workload have to be measured in order to see how much energy exist to implement this project. It can be generated from the existing database such as:

- The current workload for staff and their perception in each department or unit starting from the presidency down to the lowest administration staff.
- The workload for the academic staff can be divided into several categories such as teaching, researching, community service, assisting students, and other administrative activities.
- The willingness of the staff to devote more time for this specific project

b. Procedures and methods

The appropriateness of the old procedures and method in accommodating the current and future condition has to be measured to ensure the need of the new ones. Several data that must be collected:

- The perception of the staff whether the old procedure and method is accommodative enough for accommodating the changes in the future.
- The clarity of the existing procedures, methods and policies.
- The obedience of the existing procedures, methods and policies in the practice.
- The satisfaction of the staff on their jobs, especially when there are additional jobs have to be done as the result of implementation of a MIS project beside their regular job.

c. Extramural Activities

PCU has certain hours for doing extramural activities. Even, each unit and department can propose budget for doing such activities. The effect of the extramural activities must be explored in order to get the understanding whether it will make the relationship among staff and PCU become closer and create more conducive working environment in order to drive the university development as a learning organization. Data that must be gathered from existing database and questionnaires, such as:

- Number of extramural activities among staff in university level and departmental level
- The staff' opinion on the effect of extramural activities for the creation of the conducive working environment, such as effectiveness and efficiency, as well as easy formation of team working, etc.

d. Centralization Issues

As cited by Braunstein, Markus (1983) has suggested that systems which centralize control over data may be resisted by users in organizations with decentralized authority. In general, PCU always applies centralization policies in most of aspects, such as

- Centralization policies over asset and resources management (acquisition, maintenance and use),
- Centralization policies over human resources management (recruiting, developing, promoting, rewarding and retiring),
- Centralization policies over budget and financial aspects.
- Centralization policies over administration management in academic matter such as the administration of students' performance, students activities, etc.

However, this centralization policy must be reconsidered as PCU grows rapidly, whether such policy is still proper or best suited with the current condition. Questionnaire regarding the fitness of centralization policy as stated above must be developed in order to improve the clear definition of centralization in a certain departmental or unit level. Policy is very important for the success of the Integrating Computerized MIS since it gives big influences to the business process of the university. The

information systems or software itself is developed based on the business processes and policies. In other words, business process and policies are embedded in the information systems. Well-defined policies are one of the key success factors of information system development and implementation. However, it is also important to take a note that the centralization policy in the academic department must not be the same with the one in administrative unit since the academic department has to keep its academic freedom.

Which strategy is chosen also depends on the result of the analysis of the people in each department or unit that involved in particular project, infrastructures and existing systems, the technical issues associated with the project, as well as the advantages and disadvantages of each implementation strategy as explained in Table 2.

3. Target Population

The target population is all of the academic and administrative staff from the Presidency down to the lowest level of administrative staff, including the Foundation and students who have close relationships to the group of MIS sub-project being analyzed.

4. Data Collection

Data will be categorized into three different sources:

1. Primary data: can be collected by distributing the questionnaires. This data is focused for the exploring the commitment, leadership, capability and the existence of resistance to change as the variable for people. Also, questionnaires for gathering data about procedures and methods, centralization issue as well as the extramural activity as the variables of the existing systems (Nominal, Likert)
2. Secondary data: can be collected by extracting data from the existing database in PCU regarding the workload and extramural activities as well as the infrastructures (Ratio Scaling)
3. Tertiary data: can be collected by interviewing the external party, such as the Foundation and the Consultant.

The project will be grouped based on the academic and administrative projects per department or unit (Nominal Scaling)

5. Expected Outcomes

a. Expected Outcome for Managing the Ongoing Structural Changes Research:

- Smooth transition stage of change in effective and efficient way in term of cost, time and energy.
- New University Systems that are flexible enough in accommodating the changes in the future.

b. Expected Outcome for Integrated Computerized MIS Project:

- Smooth implementation of Integration for Computerized MIS in effective and efficient way in term of cost, time and energy..
- Providing the qualified information needed for analysis and decision making drawn by the University and the Foundation in an accurate and timely manner.
- Increase the staff' productivity
- Low level of recruitment for new staff accommodating the changes in order to enhance the efficiency and effectiveness.
- Providing the input for choosing the alternative of buying or developing in-house Integrated MIS software.
- Providing the qualified information for the students and stakeholders.

6. Beneficiary

- The Foundation
- The University
- The students and other stakeholders.

7. Researcher Qualifications

The researcher must be those who have multidisciplinary expertise. The most important disciplines are information technology, information systems, accounting, management, and psychology. However, it might be very useful if the University hire a consultant team to do this research, especially when the workload of the staff is high enough. Besides, the consultant can be expected to give objective opinions and suggestions regarding the analysis and data gathering process of this research.

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