Why Us? Arranged Marriage: Libraries and Computer Centers

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Abstract

Purpose- Explores the factors of the decision for merging libraries and computing centers on Taiwanese academic campuses.

Design/methodology/approach- describes the differences, similarities, and missions between the academic libraries and computing centers from the past to the present, gives a brief introduction toward the historical development of the merger, and uses multiple-case study approach by interviewing relative decision-makers of four colleges of Taiwan.

Findings- two categories of factors, which are environment and decision-makers, are found for impacting the decision of the merger.

Originate/value- contributes to Library and Information Sciences by giving five suggestions, which are (1) curriculum design, (2) communication skills, (3) law knowledge, (4) partnership, and (5) working attitude adjustment.

Keywords Library and Information Sciences, Libraries, Computing centers, merger, factors, Taiwan

Paper type Analytical Research Paper

INTRODUCTION

"If the library of the 21st century is to be more than a warehouse of old books staffed by a cadre of reference librarians, user services librarians must take the lead in forging new directions and new relationships with colleagues on campus. The transition will

be not smooth because there are enormous cultural differences and mistrust between library and computing organizations that must be bridged" (Shapiro & Long, 1994, p. 290). In response to this, awareness it has become a trend to join the academic libraries and computing centers in order to offer better information service since 1980s. However, the merger of libraries and computing centers (hereafter referred as MLCC) is a complex phenomenon with potentially devastating consequences, and a decision with an impact on the day-to-day operation of the two departments, the work-life of librarians and information technology (hereafter referred as IT) specialists, and re-conceptualizing the organizational culture (Fulton, 2001). Therefore, it is not difficult to hear the incongruent voices after merging. Concern with the incongruent voices from both librarians and information technology (IT) specialists of both the merged and non-merged campuses (Yang, 2004) is the main reason to investigate this topic. The other reason is that this type of merger is becoming more popular in colleges in Taiwan and there is a dearth of literature that discusses the decision-making factors of MLCC in the Taiwanese academic environment. Since there are many issues involved in the MLCC, the library professional would not be out of line to question why and how the campus administrator decided to merge the two departments, and what factors were considered to make the MLCC.

In order to reveal the factors of MLCC, a multiple-case study approach involving the decision-makers on four campuses in Taiwan will be used in this study. In order to investigate the factors of MLCC, there are six parts arranged in this study:

1. Background understanding of MLCC in Taiwan
2. Relative literature review
3. Theoretical framework for conducting this study
4. Methodology and the research design

5. Findings and results of the investigation
6. Conclusions and further studies drew out from this study, and suggestions toward Library and Information Science (hereafter referred as LIS).

BACKGROUND UNDERSTANDINGS

Libraries and Computing Centers in Taiwan

Academic computing centers and libraries evolved from radically different cultures at different periods of history. Academic library history is as long as university history and the library has been seen as the heart of the university. In contrast to library history, the age of the academic computing centers is roughly 40 years old. Their history started around the late 1960s when academic libraries began to apply computer technology to their operations (Hardesty, 1997).

The missions of the two units are unique and somewhat contradictory in nature. According to Hsueh (1997), the missions of university libraries in Taiwan include offering a friendly environment to users, collecting and classifying files and information, and using a standard catalogue and search skills. They are both client-oriented and research-oriented. The mission of computing centers is academic and administrative. The information technology (IT) specialists who work in the computing centers take care of computing hardware and software. They provide and maintain networking to enhance electronic information used by students, faculty, and staff for instructional and research purposes (Hsueh, 1997; Liao, 1996). Additionally, they enhance institutional record-keeping of administrative departments in the higher education system, such as admission offices, development offices, and registrar's offices.

In Taiwan, according to "*The Decree of Establishment and Management of the University Library (DEMUL)*" (http://host.cc.ntu.edu.tw/sec/lawindex.htm), which is a standard for all of the colleges and university to manage their staff, academic

departments, and administrative units, it claims that every campus must have the library, but not every campus has the computing center. As a result, the librarians have a more lawful and orthodox status and more permanent positions than the IT specialists. Furthermore, the director of the library is on the same administrative level with the Dean of academic affairs and the Dean of student affairs; whereas the director of computing centers is not. Table I shows their un-parallel status.

Table I Status of librarians and IT specialists on Taiwanese campuses

	Librarians	IT Specialists
Legal Status	Essential unit	Dependent unit
Organizational Hierarchy Status	Highest unit	Second-layered unit
Personnel	National examination and LIS degree required	IT background and experience required
Establishment Law	Must follow the " DEMUL"	Depends on individual campus
Characteristics	Unique and academic value	Mostly Administrative value
Director Requirement	Faculty who is assigned by the president	Hired from related professionals
Mission Statement	Proclamation on the "DEMUL"	No formal proclamation
Salary	Higher	Lower
Position Status	Tenure	By yearly contract

Note. Translated by the researcher from "An Investigation into the Issue of the Merging or Dividing of Library and Computer Center in Universities" (Liao, 1996, p. 5).

Trend of MLCC in Taiwan

Before introducing the MLCC trend of Taiwan, it is interesting to survey the historical development of the MLCC. Following is the synthesis from Hardesty (1997), Hirshon (1998), and Fulton (2001).

1. 1980-1988: Mostly focus on the similarities of missions, electronic information provision, the proliferation of networks, and digitization of information as likely trends to the merger of the two units.
2. 1988-1992: After several cases of merger, scholars and practitioners turn the attention to the cultural differences of the two units.

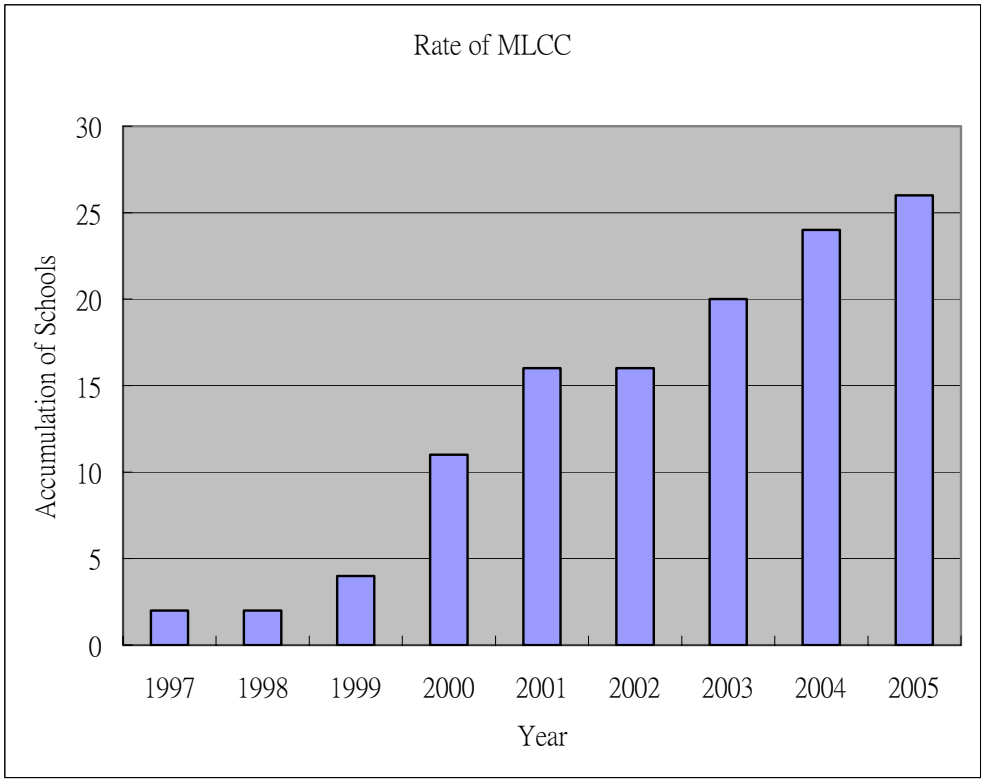
3. 1992-1996: This was the merging momentum and the growth was now evident at the smaller institutions (Hardesty, 1997). After the late-1990s, the trend of MLCC began to take shape.
4. 1997-2000: University scholars (Hirshon, 1998) began to think of merger as in the statement “changing the organizational structure involved many logistical, political, emotional, and practical problems” (p. ix).

Compared to American campuses, the MLCC history in Taiwan is relative short. The starting point of MLCC in Taiwan was in February 1997at Fooyin University (used to be called Fooyin Junior College). After the MLCC of Yuan Ze University in August 1997 which was known by most Taiwanese campuses as the first MLCC, there has been a trend of MLCC in many Taiwanese colleges and universities. Table II and figure1 detail an investigation of the MLCC in Taiwan from 1997 to 2005.

Table II Investigation of MLCC in Taiwan

Year	*Total Numbers of Schools*	*Accumulation of Schools of MLCC*
1997	Data not available	2
1998	Data not available	2
1999	Data not available	4
2000	Data not available	11
2002	Data not available	16
2002	Data not available	16
2003	Data not available	20
2004	158	24
2005	159	26

Figure 1 MLCC is getting more popular in Taiwan



The investigation of MLCC factors is important for LIS, because MLCC is a not a simple decision; so Molholt (1985) commented in detail about the merging paths and observed that decision-makers faced two problems: “first, misunderstanding the needs and habits of information seekers; second, misunderstanding the nature of information itself” (pp. 287-288).

LITERATURE REVIEW

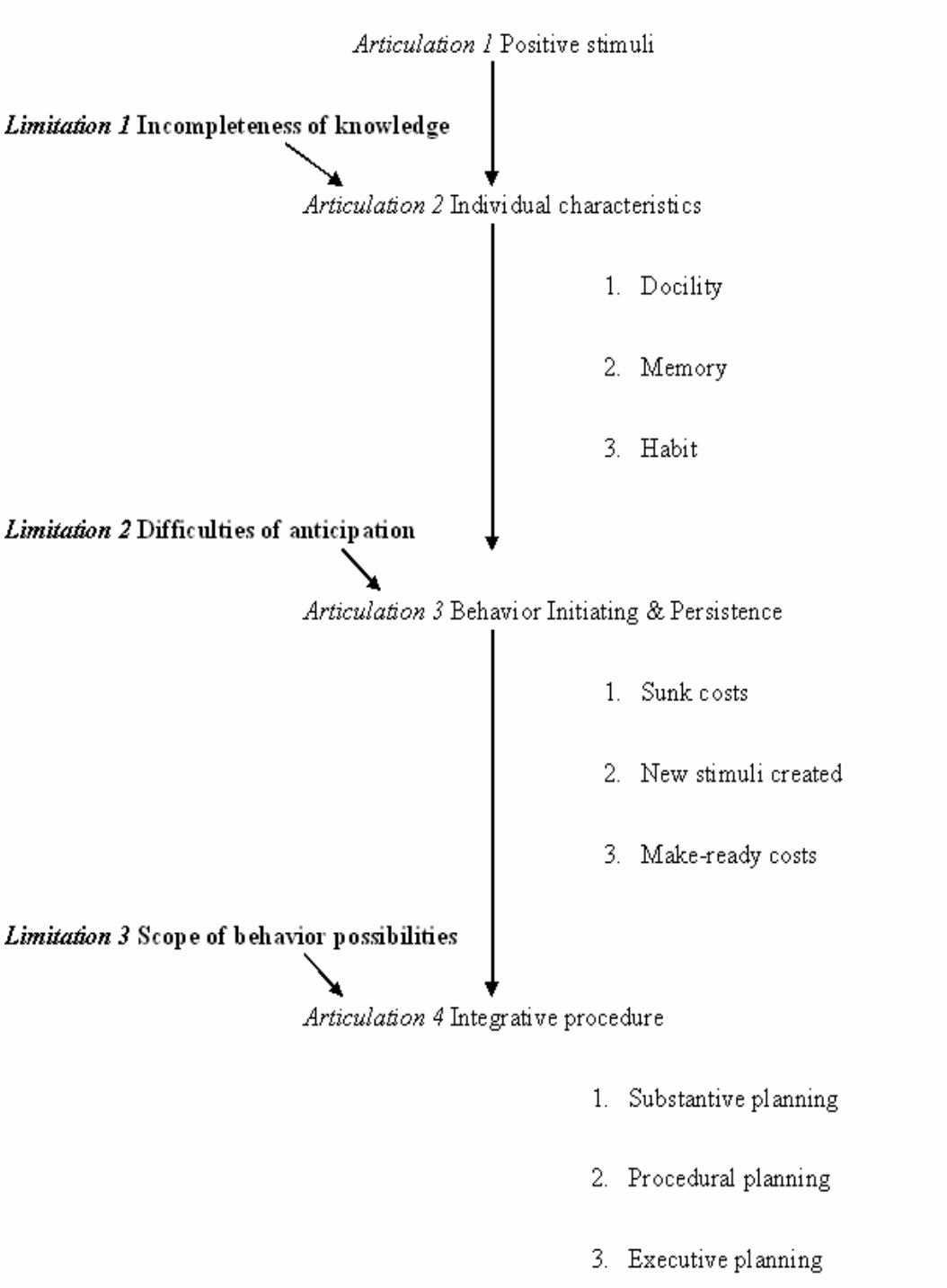
In order to reveal the factors of how and why the administrators made the decision of MLCC, Rogers’ innovation-decision process and Simon’s bounded rationality decision making approach are the main literature reviewed. The notion of MLCC does not have roots in Taiwanese higher education environment, and there is no Chinese literature that mentions it. Therefore, the researcher assumes that the MLCC is a type of innovation that is new to Taiwan, and reviews Rogers’(2003) innovation-decision process. Besides, the researcher chooses the bounded rational decision making

approach by considering Simon's (1976) idea that "the decision-making takes place in an environment of givens" (p. 79). The idea is similar to the real situations in Taiwan which are (1) every single campus has a particular atmosphere, (2) different campus administrators have different knowledge backgrounds and personalities, and (3) decision-making process may be affected by the whole environment in Taiwan. Therefore, other than Rogers' innovation-decision process, Simon's three limitations of rationality are also helpful in investigating the MLCC decision-making process in Taiwan.

Bounded rational decision-making approach

Studies of decision-making in the real world suggest that not all alternatives can be known, that not all consequences are considered, and that not all preferences are evoked at the same time. This has led some theorists to modify the rational model to a "limited (bounded) rationality" approach. "Herbert Simon (1955) introduced the concepts of satisficing and bounded rationality, which can be interpreted as defining a realistic normative standard for an organism with a finite mind" (Kahneman, 2003, p. 163). The whole decision-making process in Simon's approach includes three limitations and four articulations. The three limitations are incompleteness of knowledge, difficulties of anticipation, and the scope of behavior possibilities; the four articulations are from receiving the positive stimuli, impacted by the individual characteristics, digested by the two mechanisms of behavior-initiating and behavior-persistence, and completed by integrating three planning procedures. Figure 2 is his concept digested and reorganized by the researcher.

Figure 2 Simon's bounded rational decision-making approach



Rogers' innovation-decision process

According to Rogers (2003), the definition of innovation-decision process, from his first published book in 1962 through the newest edition in 2003, has consistently been:

> The process through which an individual (other decision-making unit) passes from first knowledge of innovation, to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision (p. 170).

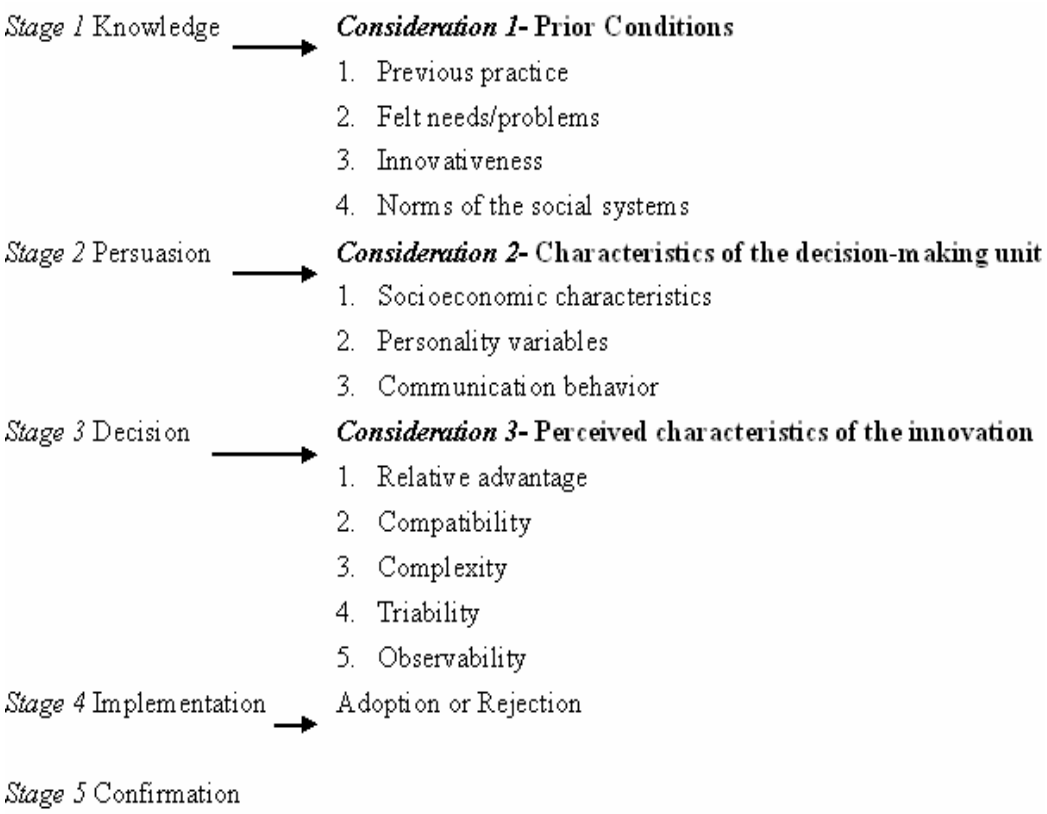
The figure 3 explains his concept digested and reorganized by the researcher. Rogers (2003) reports the processes of an innovation-decision model as five sequential stages. The five stages are the following:

1. Knowledge stage "occurs when an individual is exposed to an innovation's existence and gains an understanding of how it functions" (p. 169). Three types of knowledge refer to this stage: awareness-knowledge, how-to -knowledge, and principles-knowledge. In this stage, the decision-makers' previous knowledge and the decision-making units' characteristics will effect the understanding of the conceptual (software) information.
2. Persuasion stage "occurs when an individual forms a favorable or an unfavorable attitude towards the innovation" (p. 169). The individuals or decision-makers seek innovation-evaluation information by using the attributes of an innovation as standards. The attributes of the innovation are viewed as the considerations for adopting or rejecting the innovation.
3. Decision stage "takes place when an individual engages in activities that lead to a choice to adopt or reject the innovation"(p. 169).
4. Implementation stage "occurs when an individual puts a new idea into use" (p. 169). However, based on the real needs or the real situations, some

individuals or decision-makers may adjust the original concept of the innovation and turn it into re-invention.

5. Confirmation stage “takes place when an individual seeks reinforcement of an innovation-decision already made, but he or she may reverse this previous decision if exposed to conflicting messages about the innovation” (p. 169). He or she may also reverse the decision leading to either adoption (if the previous decision was to reject) or discontinuance (if the previous decision was to adopt).

Figure 3 Detailed explanation of Rogers' innovation decision process



METHODOLOGY

Approach of Multiple-case Study

Multpile-case study is not only one of the qualitative research methods, but also one of the case study methods, which offers a method of learning about a complex instance through extensive description and contextual analysis. According to Yin (2003), there are three reasons for adopting the case study strategy to study the MLCC topic. First, the case study strategy is preferable when "why" and "how" questions are posed. Second, the case is a contemporary phenomenon in its real social life. Third, the investigator has little control over the event. The MLCC topic is a contemporary phenomenon on Taiwanese campuses, concerned with "why" and "how" questions, and has already happened; therefore, the researcher has little control over it.

Besides, according to Merriam (1998), there are two advantages of adopting a multiple- case study method. First, the more cases in the study and the greater variants across cases, the more compelling an interpretation is likely to be. Second, it can strengthen the precision, validation, and stability of the findings. In general, the function of the multiple- case study is to answer the following questions: How can one study multiple cases of the same phenomenon and come up with a viable conclusion? How can one integrate the multiple cases that do or do not have a common subject? How can a connection be drawn from those cases? Therefore, benefited by the functions of the multiple- case study, this study will attempt to reveal the factors of the MLCC by seeking an answer to the following questions: what are the factors that cause multiple campuses to make the same decision (MLCC)? What connection can be drawn from those campuses regarding the decision-making process?

Weakness of the MLCC study

The primary weakness of the case study method for this study is time. Since the MLCC phenomenon has already happened for a period of time, this study must trace back to the multiple sources of information over the time period of the decision-making process. The other weakness is that, because of the administrative policy, routines, and culture, as pointed out above, none of the campuses can offer documents, such as minutes of meetings, pertaining to the MLCC.

In order to ensure the validity and reliability, the researcher adopts one of Merriam's (1998) suggestions to enhance internal validity: member checks. The researcher recorded and entered the interview results into a word processing software program for organization, and then sent them back to those participants. After getting their feedback, the researcher started the data analysis. As to external validity, the researcher follows Merriam's (1998) suggestions to enhance the possibility of the

generalizability of this study, which are (1) rich, thick description, and (2) multisite designs. Thus, the researcher uses more than one school may allow “the results to be applied by the readers to a greater range of other situations” (p. 212). Since the participants knew each other (but they did not know that they were all interviewed by the researcher), the researcher cross-verifies their conversations to authenticate the truthfulness of their narrations.

Research design

(1) *Selected Schools.* Based on the assumptions that different schools with different size and budget resources may have different factors affecting their MLCC decisions, and followed Yin’s (2003) suggestions of selecting multiple cases that each case either predicts a similar result (a literal replication), or predicts the contrasting result but for predictable reasons (a theoretical replication), there are four schools selected by considering their budget resources and size which includes the area size of campuses and the numbers of students, staff, and faculty. In other words, the schools with same size/budget resources may have similar factors regarding their MLCC decisions; in the contrast, the schools with different factors toward the MLCC decisions may have different size/resources. One of the four schools selected is a public university (BU) , one is a public institution of science and technology (BI), one is a private university (VU), and one is a private institute of science and technology (VI), please see table III. The area size of campuses and the numbers of students, staff, and faculty of universities are bigger than the institutions of science and technology. The four schools are Fooyin University of Science and Technology, Yuan Ze University, National U. of Kaohsiung, and National Kaohsiung First U. of Science and Technology. Since Taiwan is a small island with the area of 36,000 square-kilometers and all of the schools are restricted and supported by the

Ministry of Education, the researcher believes that the locations of participant schools is not a variable.

Table III Types of selected schools

Budget/Size	*University (U)*	*Institution of science and technology (I)*
Public (B)	BU	BI
Private (V)	VU	VI

(2) *Selected interviewees.* There are three decision-makers and five gatekeepers interviewed in this study, and the gatekeeper and the decision-maker are very familiar with each other in each school. The researcher did the best to determine the personalities of decision-makers by objectively analyzing conversations with three decision-makers and five gatekeepers. Because the gatekeepers were also the main decision-makers for each school, involved in the decision-making process of their MLCC, and are familiar with the decision-makers; therefore, they are interviewed as well in this study.

(3) *Instrument.* Three methods of data collection are used: interviews, observation, and documents and three main steps for analyzing the data are: 1. the data was entered into a word processing software program for organization and storage; 2. the texts generated from this processing are analyzed by human and machine analysis; 3. the machine analysis (N-Vivo software) as a check for accuracy of the human analysis and vice versa; however, there is no Chinese edition of N-Vivo software available. Therefore, the accuracy of human analysis was done by the researcher using the constant comparative method.

PATTERNING FINDINGS AND FACTORS

Based on the conceptual framework, the data were patterned with the categories of factors and were mapped into the conceptual framework.

Factors of Environment

Regarding the category of factors of environment, the relationship between the content of the interviews and the factors can be seen in Table IV. The check (✓) marks stand for the factors that have an impact on the school's MLCC decisions.

Table IV Findings and the factors of environment

Schools/Factors	*Factors of Environment*		
	Change of IT Application	*Change of Missions*	*Limitation of Resources*
Fooyin U.	ˇ	ˇ	ˇ
Yuan Ze U.		ˇ	
N. U. of Kaohsiung		ˇ	ˇ
N. K. F. U.		ˇ	ˇ

The most common factors of environment derived from the interviewees' conversations are: (1) the change of application of information technology, (2) the change of duty and mission of both libraries and computing centers, and (3) the limitation of resources from the Ministry of Education in Taiwan.

(1) *The change of application of information technology.* An example of this factor is that the IT specialists do not manage the super computers any more; the CD-ROM storage databases have been replaced by the on-line and internet databases in libraries.

(2) *The change of duty and mission of both libraries and computing centers.* The IT specialists and librarians are not only the guardians of information; instead of the old roles, they have become the accessing nodes of information. Interviewees of three schools mentioned this as one of the factors of environment which had an impact on their MLCC decision.

(3) *The limitation of resources from the Ministry of Education in Taiwan.* The Taiwan government now intends to encourage the universities and colleges to find resources (including making money) by themselves through the policy of reducing the budget support, even the public universities and colleges.

Two of the interviewees mentioned the government policy issue.

In sum, from the findings, the notion or concept of MLCC came from the awareness of and observation towards the change of application of information technology, and the change of mission of both libraries and computing centers. Furthermore, the occurrence of MLCC was forced indirectly by the limitation of resources from the Ministry of Education in Taiwan. From the Table IV, the MLCC decisions of the four schools were all affected by the change of duty and mission of both libraries and computing centers, three of them were affected by the limited resources, and one of them was affected by the change of application of information technology.

Factors of Decision-makers' Personality

The relationship between the interviewing results and the factors of personality is shown in Table V. Not all of the factors are found from the investigation, therefore some of them are blank, and are explained later.

Table V Findings and the factors of decision-makers' personality

Schools/Factors	*Factors of Decision-makers' Personality*								
	Cognitive Style		*Knowledge/Attitudes*		*Judgment*		*Tolerance of Ambiguity*		*Proposition*
	Complex	*Simple*	*Knowledge*	*Attitudes*	*Factual*	*Value*	*High*	*Low*	
Fooyin U.		ˇ	Physics	MLCC is an overlap		ˇ	ˇ		
Yuan Ze U.	ˇ		Industry	IT application		ˇ		ˇ	
N. U. of Kaohsiung	ˇ		Law	Inspiration from Internet	ˇ				
N. K. F. U.		ˇ	Mechanics	Reducing staff	ˇ			ˇ	

(1) *Cognitive style.* It is defined as how people process information and how information is evaluated and varies according to the cognitive complexity and knowledge of a particular individual. According to the conversation when interviewing, two of the decision-makers seem to fit in the cognitively complex type. One considered a variety of information from the financial,

industrial, and business fields to produce the decision of MLCC; the other considered five aspects to make the MLCC decision, including the mission of libraries, sharing of information, sharing building, saving personnel, and inspiration by peers and prior experiences. In contrast, the other two of the decision-makers appear to be cognitively simple. They made the MLCC decision solely based on the belief that the MLCC is practical and economical. One believes that "the MLCC can improve the information service, and the information service can fulfill the brains and minds of both faculty and students", and the other said, "…solely because of the creation of a new building".

(2) *Attitudes and knowledge.* From the investigation, the researcher found that all of the four decision-makers made the MLCC decision without viewing it as a direct problem that needed to be solved. They made the MLCC decision mostly based on their awareness and observations of the development of the applied technology and information-use environment, and with the expectation of reducing personnel and saving budget. Therefore, the discussion of the problem-solving ability is not relevant to the MLCC directly.

(3) *Judgment.* Some of the decision-makers viewed the final goal of MLCC with the value of producing knowledge for faculty and students, some viewed the final goal of MLCC with the value of using information technology to manage organizations efficiently. The other two viewed the MLCC as a design with the implementation (factual judgment) of saving personnel and sharing a building.

(4) *Tolerance of ambiguity.* Individuals with low tolerance for ambiguity prefer definiteness and regularity; in contrast, individuals with high tolerance for ambiguity feel more comfortable with handling soft (qualitative) and vague

data. Some of the decision-makers applied the concepts of business and industrial management into the campuses to make the MLCC decision; some considered the real examples of the European and American universities to make the MLCC decision. The other two emphasized the definite experiences of other organizations to support their decisions. It is not difficult to understand that the decision-makers of those two campuses might have a low tolerance for ambiguity and prefer definiteness and regularity. However, one of the interviewees told researcher that he is flexible to the MLCC decision. Therefore, he might have a high tolerance for ambiguity and feel more comfortable with handling soft (qualitative) and vague data.

(5) *Decision-maker's proposition to the problem.* The concept of decision-maker's proposition has been mentioned as a factor to consider in the decision processes. Yang (2003) summarizes three effective elements of decision-making as (1) decision-maker's knowledge and understanding of the nature of the problem, (2) decision-maker's problem-solving ability, (3) decision-maker's expectation. However, the findings in regard to the factors of the decision-makers' personalities are difficult to find. The researcher abstracted the findings mostly from the conversations when interviewing the gatekeepers. The researcher encouraged all of the participants to describe the personalities of the decision-makers as honestly as possible. The researcher found that the gatekeepers who were very close friends of those decision-makers tried quite hard. In addition, the researcher objectively ascertained the authentication of the description by observing the facial expressions as the decision-makers were talking.

CONCLUSIONS AND FURTHER STUDIES

The two conclusions were analyzed according to Erickson's (1986) interpretive

commentary, which “points the reader to those details that are salient for the author and to the leaning-interpretations of the author” (p. 152). Therefore, the conclusions are the highlights of this study and can draw forth further studies.

Conclusion 1: Factors vs. budget resources and size

Based on the original assumption that the budget resources and size of selected schools may have an impact on the MLCC decisions, the findings have been synthesized and shown as Table VI and Table VII.

Table VI A comparison of factors considering school size

Size of Schools	Large Size		Small Size	
Budget Resource of Schools	Public Schools	Private Schools	Public Schools	Private Schools
Factors of Environment	*Change of missions*		*Change of missions*	
			Limitation of resources	
Factors of Decision-makers' Personality	Complex cognitive style		Simple cognitive style	

Note. The italics represent the same factors.

Both of the large private and public schools have the same factors from the two categories of factors shown in Table VI; and both of the a small private and public schools have the same factors from the two categories of factors shown in Table VI. The italics on the Table VI are the common factors for all of the four schools in regard to size.

Table VII A comparison of factors considering budget resources

Budget Resource of Schools	Public Schools		Private Schools	
Size of Schools	Large Size	Small Size	Large Size	Small Size
Factors of Environment	*Change of Missions* / Limitation of resources		*Change of Missions*	
Factors of Decision-makers' Personality	*Authority*/Factual judgment		*Authority* /Value judgment	

Note. The italics represent the same factors.

Both of the public schools have the same factors from the two categories of factors shown in Table VII. Both of the private schools have the same factors from the

five categories of factors shown in Table VII. The italics on the Table VII are the common factors for all of the four schools in regard to budget resources.

The first part of the conclusion from the synthesized findings is that regardless of budget resources or school size, the MLCC decisions of schools are impacted by the factors of environment shown as italics in the tables, the common factor is the change of missions of libraries and computing centers. All of the public and small schools emphasize the limitation of resources which is one of the factors of environment. According to the researcher's thought this is because the budget resources of public schools come from and are limited by the government and the budget resources of small size schools depend on the number of yearly students.

The second part of the conclusion is that the decision-makers' personality is a key factor which may change according to the school size and budget resources. As to the size of school, the decision-maker in a large school has a complex cognitive style, and the decision-maker in a small school has a simple cognitive style. As to the budget resources, the decision-makers in public schools tend to make the MLCC decision by using their factual judgment, and the decision-makers in private schools tend to make the MLCC decision by using their value judgment. Cognitively simple decision-makers tend to perceive stimuli in simple and minimally differentiated dimensions. They made the MLCC decision based solely on the belief that the MLCC is practical and economical (e. g. reducing staff). The researcher thinks that the smaller school size limits them to consider fewer options, because the less faculty, students, and staff involved on campus and who are affected by their decisions. Also, the finding that small schools emphasize the limitation of resources may be one of the reasons. The small schools want to reduce the staff as they are limited by the budget and other resources, which is a practicable and economical notion.

On the contrary, cognitively complex decision-makers tend to perceive several

dimensions of stimuli and apply more complex rules to interpret phenomena. These schools considered the variety of information from financial, industrial, and business fields to make the MLCC decisions. The researcher thinks that the larger school size leads them to consider more, because there is more faculty, students, and staff involved on campus that are affected by their decisions.

Further studies could explore several questions that arise from the first part of this conclusion. The researcher wonders if the factors are the same for all schools that adopted the MLCC. If it is true, considering the two categories of factors, are libraries and computing centers the only two units that should or could be merged? Is there any other more suitable or proper units on campus that should or could be merged? Finally, could the two categories of factors be generalized for all of the schools that adopted the MLCC on Taiwanese campuses? These questions may direct further studies. These kinds of further studies may solve the conflicts between libraries, computing centers, and faculty, and make an efficient merger.

From the second part of this conclusion, the researcher wonders what the result would be if the budget resource and size of schools are viewed as the two independent variables, which can be directly manipulated by the experimenter to determine its influences, and the decision-makers' personality is viewed as the dependent variable that is "a response caused by the manipulation of the independent variables" (Smith, 2003, 3rd. pp. 8-9). This question may be answered by further quantitative or qualitative studies. The researcher wonders if the decision-makers with the same budgetary resources will make the same decision; and if the decision-makers of the schools of the same size will make the same decision. That is to say, if the MLCC decision is relative to the budget resources or school size individually more than relative the personality of the decision-makers.

Conclusion 2: MLCC is an authoritative decision

The result shows that the MLCC on Taiwanese campuses is an authoritative and necessitated decision. From the findings, the MLCC is new to Taiwanese campuses, but it was not accepted by the individual decision-makers due to its innovative attributes. In contrast, MLCC was accepted depending on the decision-makers' personalities and the factors of environment.

From the investigation, the researcher found all of the four MLCC decisions were made by one person. One of the gatekeepers told the researcher that the MLCC was made by the decision-maker's will, "as long as he said so, we must do so". As a Taiwanese, the researcher was expected by the interviewees to understand that this type of decision-making results from the administrative culture of Taiwan; that is to say, they seem to view this type of decision-making as normal, reasonable, and acceptable, and the researcher should understand it as well. Thus, the MLCC was accepted and adopted by the Taiwanese campuses not because it was an innovation. It was a coincidence that the MLCC was new to Taiwanese campuses as an innovation and also a way to satisfy their needs.

The second conclusion implies that Rogers' (2003) five stages of innovation decision process have no significance on Taiwanese campus regarding the MLCC decision. According to the findings, the stages of Taiwanese MLCC decision look more like: (1) decision, (2) knowledge, (3) persuasion, (4) implementation, and (5) confirmation; the fourth and fifth stages are not discussed in this study regarding the research question. From the interview conversations, most of the decision-makers were already determined to adopt the MLCC without struggling according to their perceptibility and peers' communication. O'Neil (2000) criticized Rogers' (2003, 5th ed.) five stages and questioned "are there adoption stages?", and he wondered if any stages exist while people adopt an innovation, and used the following headings in his

article to explain it: “(1) cause we said so, (2) sometimes all, but frequently not these stages, (3) sometimes these sources, it just depends, and (4) too much time to measure so it must be true” (¶5). His article holds the same attitude as the interview conversations, in which the interviewees said that they had difficulty in clarifying the boundaries of the stages of adoption.

However, the second conclusion echoes the three limitations of Simon’s bounded rational decision-making approach. Since this MLCC in Taiwan is an authoritative decision which was made by only one person and used the peer communication channel for making the decision, certainly, the information is incomplete and behaviors are limited. This characteristic of communication for Taiwanese campus decision-makers does not only echo Simon’s notion of information limitation, but also matches Rogers’ notion of homophily communication. According to Rogers (2003, 5th ed.), “[h] Homophily is the degree to which a pair of individuals who communicate as similar, such similarity may be in certain attributes, such as beliefs, education, socioeconomic status, and the like” (p. 305). When people are restricted by homophily communication, they may be over-confident with their available information and ignores others.

SUGGESTIONS TOWARD LIS

A triangle of legitimacy

Based on the first common factor for four schools- the change is *the missions of libraries and computing centers*, which belongs to the category of environment, and it is reasonable that due to the digitalization, the Internet, and the application of information technology, the whole environment has been changed. The overlap area took place in libraries and computing centers in both the missions and the services. Therefore, it is obvious that there is a partnership between the two organizations changed. Both of the librarians and IT specialists have no way to avoid adjusting their

working attitudes and improve their communication channel. It is a triangle of partnership, adjusting working attitudes, and communication between the librarians, IT specialists, and academic administrators.

The second common factor is the will of the decision-makers of individual schools, as all of the MLCC are *authoritative decisions*. The MLCC decision was made by one person, or it might be said made by the top peers of higher education campuses in Taiwan. Through their homophily communication, the MLCC took place in Taiwan. The librarians should be educated in the future with the abilities of leadership and heterophily communication so that they can work with IT specialists and top leaders. Besides, both of the librarians and IT specialists have the responsibility to build the legitimacy for this new organization. In this study, the researcher mentions the legitimacy by focusing on the management issue. It is important to build a new legitimacy for adding accountability and consistency in this new organization, because it can efficient the performance of the MLCC.

Curriculum design of LIS

From the two categories of factors, the researcher found that the LIS curriculum may involve the fields of management and law. *The Decree of Establishment and Management of University Library (DEMUL)* has a very serious impact on the decisions of individual schools, not only on MLCC decision. Did the scholars of Taiwanese LIS ever think about its impact toward the design of LIS curriculum? The impact of *The Decree of Establishment and Management of University Library (DEMUL)* may be viewed as an environmental factor for improving the course design of LIS. Usually on Taiwanese campuses, the *DEMUL* protects the librarians' status and rights; however, after merging, this law can not even ensure that they can keep the leadership status of information service on campuses, because the directors of libraries, who can not be trusted of handling the MLCC, always lose their jobs after

merging. Besides, studying law can not only protect the librarians' rights, but also protect the readers' rights in avoiding the use of illegal copyrights. There will be two advantages of this design.

For ensuring librarians will remain a professional forever, the curriculum should be designed to build librarians' professional imagination, to improve professional knowledge and skills, to strive for their status on this new organization, and to stimulate librarians' willingness and ability to learn more in the digital environment.

Suggestion to IFLA

"*The International Federation of Library Associations and Institutions* (IFLA) is a worldwide organization created to provide librarians around the world with a forum for exchanging ideas, and promoting international cooperation, research and development in all fields of library activity" (http://www.ifla.org/III/intro00.htm). This study hopes contribute IFLA to think culturally about the Taiwanese decision-making type, and to use different aspects for working with the libraries of Taiwan. If IFLA works with Taiwanese library associations by holding this understanding, it is also helpful for Taiwanese librarians to join the activities of IFLA, such as a range of professional meetings, seminars and workshops hold around the world.

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