

CHAPTER 3

RESEARCH PROCEDURES

This chapter explains the procedure used to complete this study. Included in this chapter are:

- a) sources of data,
- b) research tools
- c) research processes
- d) data analysis

SOURCES OF DATA

This study was conducted in five major processes, and three of this five processes were used in the data collection activities. The data and information that were used to support this study were gathered from various sources depending on the objective of each of the particular process. In total, the sources of data for this study were stakeholders, literature, official documents, experts, and the Internet resources. The details of each of the sources are as follows:

1. Stakeholders

The stakeholders were categorized into three groups. These groups were policy decisionmakers, policymakers and Internet users. The policy decisionmakers group included rectors or presidents of universities/institutions, chief information officers of the universities/institutions, and directors of university Internet service centers or directors of other units responsible for providing Internet services. The policymakers group included deans of faculties, heads of departments, directors of centers/institutes,

and directors of divisions. The Internet users included instructors, university support staff, and students.

The data collected from stakeholders were opinions of stakeholders on the issues of the Internet use policy, the alternatives to address the policies, and the mechanisms to support the policies.

2. Literature

The literature related to the issues of the use of the Internet, and the Internet policy were reviewed and analyzed.

3. Official Documents

The documents of the universities/institutions on the Internet services, rules and regulations on the use of university Internet services, and policies of the university related to the use of the Internet were studied and analyzed. Documents of the Ministry of University Affairs and the National Information Technology Committee related to the Internet use issues were studied and analyzed as well.

4. Experts

This study gathered data from experts in Internet Technology and experts in Internet services and utilization in higher education institutions. Opinions of experts on the issues of the Internet use policy, the alternatives to address the policies, and the mechanisms to support the policies were collected from experts.

5. The Internet Resources

The Internet Use policies of the higher education institutions in other countries or other related policies were compiled from the Internet resources. In addition, data related to the use of the Internet and the Internet policies available from the

Discussion groups and the Listserv activity on the Internet were collected, studied and analyzed.

RESEARCH TOOLS AND DEVELOPMENT

In order to collect the required data and information to support the study, appropriate tools were developed. Tools used in this study were questionnaires and interview guides. The characteristics of each tool and the development process of these tools were the following:

1. Questionnaires

There are three sets of the questionnaire utilized in this study. These are:

- a) a questionnaire to survey the history and current university Internet services, and regulations and policies which govern the use of the university Internet
- b) a questionnaire to survey the policymakers and Internet users' opinions on the Internet Use policies
- c) a questionnaire to survey the key policy decisionmakers' opinions on the Internet Use Policy for Thai higher education institutions

The details of these questionnaires are described as follow:

1.1 Questionnaire to survey the history and the current Internet services of the university, and regulations and policies which govern the use of the university Internet

The details of this questionnaire are as follows.

1.1.1 Characteristics

This questionnaire consists of close-ended, and fill-in-the blank questions. (Appendix A shows this questionnaire.)

1.1.2 Utilization

This questionnaire was mailed to the directors of the university computing centers or other units which are responsible for providing Internet services to the university.

1.1.3 Development Process

There were five fundamental steps in developing the questionnaire.

1.1.3.1 Identification of the objective of the questionnaire survey

The objective of this questionnaire was to collect data and information about past and present university Internet services, and regulations and policies about the use of the university Internet..

1.1.3.2 Development of the questions for the questionnaire

The questions was developed from the objective of the questionnaire survey. The answers to questions in the questionnaire were expected to fulfill the objective of the survey.

1.1.3.3 Verification and validation of the questionnaire

The questionnaire was developed in consultation with two experts in Measurement and Evaluation.

1.1.3.4 Revision

The suggestions to revise the questionnaire from experts were followed.

1.1.3.5 Try-out

After the questionnaire was revised, it was tried out with three volunteers. These volunteers were university support staffs. After completing the questionnaire, the volunteers were asked about problems encountered in answering each in the questions of the questionnaire. The problems were listed and brought to consultation with an expert in Measurement and Evaluation. The suggestions to revise the questionnaire from the expert were followed.

1.2 Questionnaire to survey policymakers and Internet users opinions on the Internet use policies

The details of this questionnaire are as follows.

1.2.1 Characteristics

This questionnaire consists of close-ended and open-ended questions. (Appendix B shows this questionnaire.)

1.2.2 Utilization

Copies of this questionnaire were mailed to samples of deans, heads of departments, instructors, and university support staffs. It was also distributed to samples of students on their respective at their campuses.

1.2.3 Development process

There were five fundamental steps in developing this questionnaire. These are:

1.2.3.1 Identification of the objective of the questionnaire survey

The objective of this questionnaire was to survey the opinions of policymakers and Internet users on the Internet use policy. There were three major issues that needed to be surveyed. These were:

- a) opinions on the issues that should be included in the Internet use policy
- b) opinions on the alternatives to address the policies
- c) opinions on the mechanisms to support the policies

1.2.3.2 Development of the questions in the questionnaire

The questions in the questionnaire were developed from the objective of the questionnaire survey. The answers to questions in the questionnaire fulfilled the objective of the survey.

1.2.3.3 Verification and validation

The questionnaire was developed in consultation with eight experts. Three of them were experts in Measurement and Evaluation, two were experts in Internet technology, and the rests were experts in Educational Technology.

1.2.3.4 Revision

The suggestions to revise the questionnaire from experts were followed.

1.2.3.5 Try-out

The try-out processes are described as the following.

1.2.3.5.1 One subject try-out

One volunteer student was requested to answer the questionnaire. The duration of the time to complete the questionnaire was recorded. The student was asked about the difficulties and problems in answering the questionnaire. Based on the data on the difficulties and problems, and the data from an analysis of the answers to the questions, the questionnaire was revised.

1.2.3.5.2 Ten subjects try-out

The revised questionnaire was tried-out with ten volunteers. These volunteers were one deputy dean, one head of department, three instructors, two university support staffs, one undergraduate student, and two graduate students. The volunteer respondents were asked to record the duration of the time to complete the questionnaire, and to list the difficulties and problems in answering the questionnaire. The data on the difficulties and problems, and analysis of answers to questions were brought for consultation with an expert in Measurement and Evaluation. The questionnaire was revised according to the suggestions of the expert.

1.3 Questionnaire to survey key policy decisionmakers on the Internet Use Policy for Thai higher education institutions

The details of this questionnaire are as follows:

1.3.1 Characteristics

There are both closed-end and open-ended questions in this questionnaire. (Appendix C shows this questionnaire.)

1.3.2 Utilization

Copies of this questionnaire were mailed to the sample of rector or president of university/institution, university chief information officer, and the director of the university computing center or other university units which were responsible for providing the Internet services.

1.3.3 Development process

The development processes of this questionnaire were as follows:

1.3.3.1 Identification of the objective of the questionnaire

The objective of this questionnaire was to survey the opinions of key policy decisionmakers on the Internet Use Policy for Thai higher education institutions formulated from the study. The opinions needed to be surveyed were as follows:

- a) the opinions on the issues of the Internet policy
- b) the opinions on the alternative to address the policies
- c) the opinions on the mechanisms to support the policies

d) the opinions on the policies which should be included in the Internet use policy for Thai higher education institutions

1.3.3.2 Development of the questions in the questionnaire

The questions in the questionnaire were developed from the objective of the questionnaire survey. The answers to questions in the questionnaire fulfilled the objective of the survey.

1.3.3.3 Verification and validation

The questionnaire which developed by the researcher was verified and validated by two experts. One was an expert in Measurement and Evaluation, the other was an expert in Internet Technology.

1.3.3.4 Revision

The suggestions from the experts to revise the questionnaire were followed.

1.3.3.5 Try-out

The questionnaire was tried-out with two volunteers, a deputy dean and a head of department. The informal interviews with these two volunteers were done immediately after completing the questionnaire, in order to obtain information on the difficulties and problems in answering the questionnaire.

1.3.3.6 Revision

The data on the difficulties and problems, and analysis of answers to questions were brought in consultation with an expert in Measurement and Evaluation. The questionnaire was revised according to the suggestions from the expert.

2. Interview Guide

There were two stages that this study conducted the interview in order to gather the data, in the preparation process and in the technical analysis process. Two different set of interview guide has been develop to utilize in each stage.

2.1 Interview guide for the rectors or presidents and experts

This interview guide was used in the preparation process to interview the rectors or presidents of the universities and experts on the context and environments of the Internet use policy and the openness to conduct the policy research on the Internet use policy for Thai higher education institutions. The details of this interview guide are described as the following.

2.1.1 Characteristics

This interview guide consists of the questions needed to be asked during the interview. (Appendix A shows this interview guide.)

2.1.2 Utilization

This interview guide was used for the informal interview with the rector or president of the university/institution and experts in Internet Technology and Internet in higher education institutions.

2.1.3 Development process

The process used to develop this interview guide are described as the following.

2.1.3.1 Identification of the objective of the interview

The objective of the interview was to survey the opinions of the rectors on the Internet use policies.

2.1.3.2 Development of the questions

The identified objective of the interview was used to develop the questions for the interview.

2.1.3.3 Consultation with experts

A draft of an interview guide was brought in consultation with an expert in Measurement and Evaluation, and an expert in Internet technology for higher education. The interview schedule and the questions of the Interview guide were revised according to the suggestions from the experts.

2.1.3.4 Rehearsal

The researcher rehearsed the interview with a head of the department who volunteered for the rehearsal. The results of the rehearsal were recorded, analyzed and brought in consultation with the experts. The interview guide was revised according to the suggestions from the experts.

2.2 Interview guide for with rectors or presidents of the universities/ institutions

This interview guide was used in the technical analysis to interview rectors or presidents of the universities about the key issue in the Internet use policy and the alternatives to address those issues. The details of this interview guide are described as the following.

2.2.1 Characteristics

This interview guide consists of the questions needed to be asked during the interview. (Appendix B shows this interview guide.)

2.2.2 Utilization

This interview guide was used in the formal interview with samples of rectors or presidents of the universities/institutions, or their representatives.

2.2.3 Development process

The process of developing this interview guide are described as the following.

2.2.3.1 Identification of the objective of the interview

The objective of the interview was to survey the opinions of the rectors or presidents of the universities/institutions on the Internet use policies.

2.2.3.2 Development of the questions

The identified objective of the interview was used to develop the questions for the interview.

2.2.3.3 Consultation with experts

A draft of the interview guide was brought in consultation with an expert in Measurement and Evaluation, and an expert in Internet technology for higher education. The interview schedule and the questions in the Interview guide were revised according to the suggestions from the experts.

2.2.3.4 Rehearsal

The researcher rehearsed the interview with a deputy dean who volunteered for the rehearsal. The results of the rehearsal were recorded, analyzed and brought in consultation with the experts. The interview guide was revised according to the suggestions from the experts.

RESEARCH PROCESS

This study employed the Policy Research methodology to answer the research questions. The process in conducting the study was adapted from Ann Majchrzak methods for Policy Research (Majchrzak, 1987). There were five major processes in conducting this policy research. These processes included the preparation, conceptualization of the study, technical analysis, analysis of study recommendations, and communication to policymakers. The first four process were administered in order,

however, the communication to policymakers process was done throughout the study. The details of each process are described as the following.

1. Preparation

The objective of the activities in this process is to collect preliminary data on the existing environment of the Internet use policy in higher education institutions.

The activities conducted in the preparation process were divided into seven steps. These steps were as follows:

1.1 Selection of the social problem

This study selected "the Internet in higher education institutions" as the social problem of the study.

1.2 Identification of key policy issues

This study selected the "use of the Internet " as the key issue of the study.

1.3 Analysis of the legislative history of policy issues

At this step the questionnaires to survey the history and current university Internet services, and regulations and policies which govern the use of the university Internet were sent to the directors of university computing centers and other units of the university responsible for providing Internet services. The list of these universities/ institutions is shown in table 4.1.

1.4 Tracing the progress of previous research and change efforts

The data on related researches to this study were searched from the database of theses and dissertations, and research projects. In addition, the literature

and documents related to Internet use policy were studied, And data and information related to Internet use policy were compiled from the Internet resources and analyzed.

1.5 Development of a policymaking process model

The official documents on university management and administration were studied in order to develop the preliminary policymaking process of the university. The major stakeholders of the Internet use policy were identified from this preliminary policymaking process.

1.6 Interview with the rectors and experts

The formal interviews were conducted with two rectors of the universities, and two experts in Internet use in higher education institutions.

1.7 Synthesis of data and information

The data and information obtained from the preparation activities were synthesized in order to develop knowledge and understanding on the context of the Internet use policy, the university policy making process, and the policy stakeholders.

2. Conceptualization of the study

The preliminary data and information obtained from the preparing activities were used to support the activities in the process of the conceptualization of the study. In this process, the feasibility to conduct the policy research about the selected social problem and the required resources to conduct the research were considered. Then, the research questions were developed.

3. Technical analysis

The major activities of this process were the design of methods to discover the answers of the research questions, and the conduction of the study as designed.

There were four major steps in the technical analysis process. These steps were as follows:

3.1 Development of the operational definition of variables

The variables of the study were drawn from the research questions and the operational definition of each of the variables were developed.

3.2 Design the method of the study

The method to find the answers of the research questions was designed. This study selected three methods to conduct. These methods were interview, questionnaire survey, and focused synthesis.

3.3 Conduct the study as designed

The details in conducting the study in technical analysis were as follows:

3.3.1 Interview

One method used to collect the required data and information to answer the research questions is the interview. This interview was conducted with the rectors or presidents of the universities/institutions, or the representatives.

There were eight universities/institutions which provided the opportunity to interview the rector or the representative. These were Mahidol University, Srinakarinwirot University, Mahasarakham University, Thonburi University, Thammasat University, Burapha university, Chulalongkorn University, and KhonKean University

3.3.2 Questionnaire survey

The university or institution connected to the Internet for more than four years were selected as sample institutions for the questionnaire survey. There

were ten institutions which were selected. The copies of questionnaire were distributed to the sample of policymakers and Internet users of these sample institutions. The list of institutions and numbers of distributed questionnaires were shown in table 3.1.



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Table 3.1 Sample institutions, and number of distributed and returned questionnaires

Institutions		Policymakers		Internet users		Total	
		send	return	send	return	send	return
Chulalongkorn	Frequency	46	27	58	49	104	76
	Return%		58.70		84.48		73.08
	Group return%		14.36		21.40		18.23
Kasetsart	Frequency	28	19	55	38	83	57
	Return%		67.86		69.09		68.67
	Group return%		10.11		16.59		13.67
Thammasat	Frequency	16	12	46	22	62	34
	Return%		75.00		47.83		54.84
	Group return%		6.38		9.61		8.15
Mahidol	Frequency	37	30	52	26	89	56
	Return%		81.08		50.00		62.92
	Group return%		15.96		11.35		13.43
Silpakom	Frequency	20	15	13	5	33	20
	Return%		75.00		38.46		60.61
	Group return%		7.98		2.18		4.80
Prince of Songkla	Frequency	25	14	31	18	56	32
	Return%		56.00		58.06		57.14
	Group return%		7.45		7.86		7.67
Khorn Kaen	Frequency	30	24	38	18	68	42
	%of return		80.00		47.37		61.76
	%of total return		12.77		7.86		10.07
Chiang Mai	Frequency	40	26	45	32	85	58
	Return%		65.00		71.11		68.24
	Group return%		13.83		13.97		13.91
King Mongkut's Institution of Technology North BKK	Frequency	8	6	27	15	35	21
	Return%		75.00		55.56		60.00
	Group return%		3.19		6.55		5.04
National Institute of Development and Administration	Frequency	28	15	20	6	48	21
	Return%		53.57		30.00		43.75
	Group return%		7.98		2.62		5.04
Total	Frequency	278	188	385	229	663	417
	Return%		67.63		59.48		62.90
	Group return%		100.00		100.00		100.00

3.3.3 Focused synthesis

The literature, official documents, and other documents related to issues and mechanisms to support the policies on the use of Internet in higher education institutions were studied and synthesized.

3.4 Data analysis

The data collected from the interview, the questionnaire survey, and the literature and official documents were categorized into quantitative data and qualitative data. The opinions of the respondents on the questionnaires were analyzed from the percentage of the frequency. The alternative with more than sixty percent of the respondents was considered as the desired choice of the respondents, and as the issue that should be included in the tentative policy.

3.5 Development of the tentative Internet Use Policy

The results of data analysis from the previous step were used to develop the tentative Internet Use Policy for Thai higher education institutions.

4. Analysis of study recommendations

The study and analysis of the possibility to implement the tentative policy was conducted by surveying the opinions of key policy decisionmakers on the tentative policy. The survey was conducted with the sample institutions of the study. It was done by mailing the questionnaire to rectors or presidents of the universities/institutions, the university chief information officers, and director of the university computing centers or other units which were responsible for providing Internet services.

The analysis of the possibility to implement the policies was conducted from estimating the "the subjective probability of implementation" (Majchrzak, 1984: 85). The alternatives of the issues or policies with at least forty percent of respondents was considered as having the chance of being implemented (Majchrzak, 1984: 85).

5. Communicating policy research to policymakers

The researcher informed the policymakers about this policy research through the interview with rectors or presidents of the universities, and the questionnaire survey with directors of university computing centers, in the preparation process. Moreover, the interviews in the technical analysis process also informed the rectors or presidents of universities/institutions on the policy research and the Internet Use Policy for Thai higher education institutions. The questionnaire survey with rectos or presidents of the universities/institutions, the universities' chief information officers, and the directors of the university computing centers were used to inform the policymakers as well.

DATA ANALYSIS

The data utilized in this study were quantitative data and qualitative data.

1. Quantitative data

In order to conduct the analysis of the quantitative data, the data were arranged into the frequency distribution. The analysis was done from the percentage of frequency of data. The criteria to analyze and to make conclusions of the data were the percentage respondents in favor of that alternative. The criteria of "sixty percent" was used in the analysis of data from the questionnaire survey in the technical analysis process. And the criteria of "forty percent" was used in the analysis of data from the questionnaire survey in the analysis of the possibility to implement the tentative policy.

2. Qualitative data

The analysis of qualitative data was conducted by Content Analysis technique. There were three major activities of the analysis process. These activities were done to develop the categories of data, classify contents of data, and derive the conclusions from the data.