CHAPTER 1

INTRODUCTION

RATIONALE

The growing importance of both the computer and telecommunication components of information technology is demonstrated by the world-wide popularity of the Internet. One of the fascinating developments in recent years has been the development of an interconnected computer network. The Internet is a product of immense creativity that mankind created, and in turn it is changing mankind (Doran, 1996:8). The word Internet was on everyone's lip, by late 1994 (Harris, 1996: 2). This new technology is impacting on human life and its organizations, creating new individuals and new technology environments (Kellner, D. 1995 cited in Loader, 1997: 3). Recently, the Internet has come far beyond its originally developed purposes and had great impact on every sector of the society. There is implication of internetworking to different elements of the large community, general occupational and interest groups and to a range of national concerns. Its impacts are multitudinous and numerous that no one can afford to ignore it.

The Internet is a worldwide communications system, often referred to as a "network of networks" (Barron, A.E. and Ivers, K. S. 1996: 12), because it comprises numerous computer networks throughout much of the world. The Internet is the largest network of the world, and is an entity with millions of users and millions of computer hosts. It comprised an estimated 50,000 subnetworks (Keen, 1995: 174), it reached 137 countries, and every 10 minutes a new network connected to it (Harris, 1996: 3). The figures of Internet system elements are educated guesses; no one really knows the size of the Internet (Keen, 1995: 17). Estimates of its size are always problematic, since it has no true central organization. It is global in scope and exists outside many recognizable boundaries of time and place (Harris, 1996: 3). Changes in the Internet is occurring very rapidly at broad level. A new paradigm of nomadic computing and communication is

made by the available pervasive networking along with powerful affordable computing and communications (Leiner, et al, 1997). One should not conclude that the Internet has now finished changing.

The predecessor of the Internet is the APRANet (1969-1990). In the 1960s the Advanced Research Projects Agency (ARPA) was funded by the U.S. Department of Defense (DoD) to experiment the linking of computers to each other and to institutional sites via telephone hookups (Quarterman and Carl-Mitchell, 1994: 19). This experimental network is the ARPANet. It was an experimental network designed to support military research in particular, research about how to build networks that could withstand partial outages and still function (Krol, 1994: 13). ARPA wanted to see if the computers in different location could be connected efficiently using a new technology known as package switching, which would allow several users to share one communications line. Packet switching cuts up data into discrete units, each one identified by a code or label, which can be sent over high-speed telephone lines. Each packet was given the computer equivalent of a postal address so that it could be sent to the right destination, to be reassembled shortly before reaching its destination into a message the computer could use, and finally, a human could understand. One of the original purposes of this system was to allow researchers and scientists to talk to each other. Packet switching and other protocols were designed so that if one or more nodes on the network went down, messages could be flexibly routed around them. The system then was also a communications network that the government hoped would be secure in case of nuclear or other emergencies.

The Internet is the largest and most comprehensive collection of human knowledge and experience which mankind has. It is encompassing the collections of many libraries and a myriad of other information sources (Harris, 1996: 3). The Internet's growing universality will create priceless resources for learning and self-advancement (Gilster 1997: 2). The Internet is a worldwide decentralized distributed cooperative interconnection of numerous underlying technologies and organizations with no overall

goals, management, and pricing structure (Quarterman and Carl-Mitchell, 1994: vii). It is flexible, and anti-monopolistic (Dempsey, 1998). However, the most popular use of the Internet is to exchange messages among people with electronic mail (Quarterman and Carl-Mitchell, 1994: 2).

To join the Internet is to join the center of the networked world (Quartermand and Carl-Mitchell, 1994:1). The community of users of the Internet is the most important reason for connecting to the Internet. This community is supported by a wide spectrum of services, such as electronic mail, file transfer, and file locators (Quartermand and Carl-Mitchell, 1994:1), bulletin boards, remote login, index program, and so on (Krol, 1994:7). Moreover, the Internet poses unusual challenges to explorers, everything from free software to graphic images, unique text files, and numerous databases (Gilster, 1994: xvii).

The belief that there is another structure to support teaching and learning emerges with the advent of the availability of the Internet (Forsyth, 1997: 16). Historically, the development of the Internet was intended for an exchange between peer in the scientific and military community. As such, academics are allowed access and an unintended extension is added to an information system. The Internet is seen as a means of delivery of information and there was an assumption that becames reality: the Internet also has possibilities to assist learning (Forsyth, 1997: 16). Originating from research settings, it is not surprising if today the Internet is widely used by educators and academic organizations. Many schools, colleges, and universities are connected to the Internet. For the university level, the organization feels embarrassed if it is not connected to the Internet. Technologies and activities currently available on the Internet premise the educator, management and administrator of academic organization the potential use of the Internet in teaching and learning. The utilization of the Internet in education is limited to the creativity of the educator. However, the installation of this technology in an organization needs quite a high investment. It covers the cost of internal network infrastructure, computer system, and other required equipment for the network to

successfully operate. Expenses for staff development to support the Internet implementation and operation are crucially important as well.

As the information age evolves, our society is undergoing massive changes. The Internet technology is one of the major forces on these changes. Like the other sectors, the Internet has a tremendous impact on educational systems. Advances in information technology, coupled with the changes in society, are creating new paradigms in education (Khan, 1996: 5). In the literature on education and training there is talk of a paradigm shift. This shift is from the expectation that education provides the basis for a job, to an emphasis on education and training as a lifelong process (Forsyth, 1998: 15-16). This shift means that the process of education which could be described as teachers telling is changed to a process of teachers facilitating access to information for the learner. This shift places a greater emphasis on the learners, who are expected to take control of their learning. This is a shift for education from ordered or imposed process on the learner to a more eclectic activity by the learner. This learner-centered learning also places delivery of the learning materials as a shared responsibility of the learner and the course. It is in this setting that the Internet has a role to play. But there are assumptions that the Internet needs to be examined. The new paradigm places learning with the learner. The old paradigm was that teachers must use the technology to teach technology. The new paradigm of eclectic education involves learners using technology to learn (Forsyth, 1998: 17). Nevertheless, successful integration of educational technology involves more than buying computers and related equipment for the classrooms, staff development, infrastructure improvements, changes in methodology, and stakeholders' involvement are all necessary complements to installing hardware (Ellsworth, 1997). Bringing technology into the classroom creates pressure for change on fellow faculty, academic computing organizations, students, and on teaching philosophy, and assessment strategy.

The impact and the benefits of the Internet to the society are very significant. The implementation of the infrastructure to support the utilization of the technology has begun.

Almost all of the universities are connected to the Internet. However, most institutions do not have a policy body to govern the utilization of the institution' Internet. There is a need to develop a specific policy to ensure equitable distribution of education offered by the Internet. Sound regulatory mechanisms need to be implemented to ensure that the positive aspects of technology introduction, transfer and diffusion are maximized and the negative aspects are minimized.

PURPOSE OF THE STUDY

This study has two levels of objective, general objective and specific objective.

1. General Objective

To examine possible alternative Internet Use policies

2. Specific Objectives

There are four specific objectives as follows:

2.1 To study and recommend key issues that might be included in Internet Use policy

2.2 To study how each key issue can best be addressed

2.3 To study and recommend mechanisms that can be used to support various Internet Use policies

2.4 To validate and recommended Internet Use policies for higher education through a survey of the opinions of key policy decisionmakers

RESEARCH QUESTIONS

This study has four research questions:

1.   What are the issues that might be included in the Internet Use Policy for Thai higher education institutions?

2.   What are the alternatives for addressing the issues that might be included in the Internet Use Policy for Thai higher education institutions?

3.   What are the feasible mechanisms that might be used to support the Internet Use Policy for Thai higher education institutions?

4.   What policies and mechanisms are feasible to implement in the Internet Use Policy for Thai higher education institutions?

SCOPE AND LIMITATIONS OF THE STUDY

This study has the following scope and limitations.

1. The higher education institutions in this study included only the closed system public universities/institutions under the control of the Ministry of University Affairs.

2.   The stakeholders in this study are divided into two groups, the Internet Use policy makers group and the Internet Use policy users group. The policy makers group includes rectors/presidents of the university/institution, vice rectors/presidents, deans of the faculties, directors of the centers/institutions/divisions, and heads of departments. On the other hand, the policy users group includes faculties, staff, and students.

3. The Internet Use policy for higher education recommendations from this study were intended as a general concept that might be utilized by all public universities, and specific regulations or rules or detailed plan are not within the scope of this study.

CONCEPTUAL FRAMEWORK

The objectives and research questions of the study indicated that the policy research is an appropriate methodology to employ in this study. Answers to the research questions were sought following a policy research study principle. Since Ann Majchrzak's methods for policy research is recommended for the beginning social scientists or the student at the graduate level (Majchrzak, 1984: 9) this study has adapted her method as the major guideline of this study. In addition, the fundamental concept involved in the analysis of the study was the public policy concept.

Considering the fundamental concepts to support the data analysis of this study, an understanding and knowledge of the higher education system and organization, and the Internet technology potential and applications is essential.

For the higher education aspect, the framework of the policy system, policy elements, and policy making processes in higher education need to be considered, analyzed and synthesized, in order to effectively utilize them as a guideline in the policy analysis of higher education institutions. Therefore, the current policies of the Ministry of University Affairs which govern the higher education institutions were selected to be the framework of the Internet Use policy resulting from this policy research study. In addition, the current policies of universities/institutions relating to the Internet were selected to complement the framework for the Internet Use policy research study.

For the Internet aspect, the policies related to the Internet use were selected for study and review. There were two major selected policies, National IT2000 policy and The Internet Society policy.
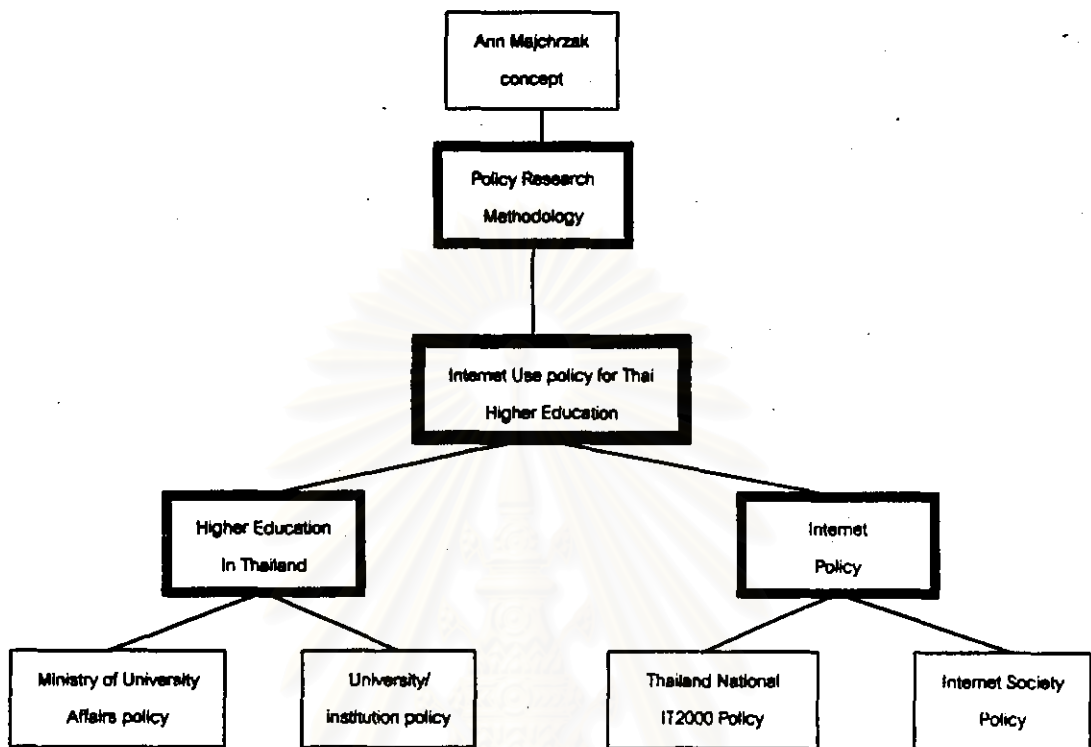
Figure 1.1 The Research Conceptual Framework

The details of this conceptual framework are described below.

1. Higher Education

There are two aspects of higher education that this study selected to use as the framework for the study. These are the management and administration systems of higher education institutions, and the policies.

The information on the management and administration systems of higher education institutions will be used for the analysis of the policymaking process of the Internet Use Policy for higher Education institutions.

Furthermore, the information on the policies related to higher education institutions will be used as principles and guideline to formulate the Internet Use Policy for higher education institutions.

2. Internet Policy

The existing Internet policies are directly involved in the study, since they can be used as guidelines to focus on the study of the Internet Use policy. The two sets of policies selected to be included in the framework of the study were the National Information Technology 2000 policy, and the Internet Society policies.

2.1 Internet Society policies

Even though, there is no central organization which owns or controls the Internet, the Internet Society is accepted world wide, as a non-profit organization that has influence on this global network, the Internet. The Internet Society is the international organization for global cooperation and coordination for the Internet and its internetworking technologies and applications. The policies and recommendations from the Internet Society are reviewed and studied in this study in order to ensure that the policy outcome of this study followed the Internet Society guidelines and does not contradict the existing Internet Society policies.

2.2 Thailand National IT2000 policy

The National IT2000 was developed in 1996. It is Thailand's first information technology policy. This policy covers information technology aspect in national development. Therefore, it is considered as one of the major frameworks to examine for the policy issues in this study.

3. Policy research

Since this study aims to examine alternatives to possible policies on the Internet Use, is the Policy Research, which was used as the methodology in the study.

Since the concept of methods to conduct a policy research study of Ann Majchrzak is recommended for the beginner policy study researcher and the graduate student, this study hass selected Majchrzak's methods of policy research as the framework of the study.

OPERATIONAL DEFINITIONS

The following definitions will be used:

Higher education refers to the highest level of education in a school-related system that is divided into three levels, lower than bachelor's degree level, bachelor's degree level, and graduate level.

Internet refers to a global communication system, consisting of extensive computer networks throughout much of the world, and computers of all kinds that can directly and transparently communicate and share services together.

Internet use refers to acts or practices, and ways of utilizing resources and services available on the Internet particularly in higher education institutions.

Internet users refer to the higher education institution members who are affected or influenced by the formulation and implementation of the Internet Use policy for higher education Institutions

Policy refers to statements of value that provide guidelines for the management and operation of the Internet in higher education institutions. It reflects basic principles or beliefs of people who are responsible for the institution.

Policy issue are those fundamental and enduring questions related to Internet use, that exist among or between stakeholders in higher education institutions.

Policy decisionmakers refer to the university or institution managers or administrators who involve in the decision making process of the university or institution policy regarding the Internet use.

Policy makers refer to the university or institution managers or administrators who affect or have influence in the policy making process in higher education institutions.

Policy mechanisms refer to tools or vehicles used by policy makers in order to develop and achieve policy objectives.

Stakeholders refer to individuals or groups who significantly affect by the Internet Use policies of higher education institutions.

EXPECTED BENEFITS FROM THE STUDY

The benefits from this study are as the following.

1. The processes of this study might motivate the university management and administrators to formulate the Internet Use policy for their institutions, if currently none is existing.

2. The Internet Use policy outcome of this study can be used as a framework to develop the Internet Use policy for each particular higher education institution and the national policy level.

3. The framework of processes in the policy research employed in this study can be used as a guideline to develop policies regarding Internet use for other educational levels such as primary education and secondary education.

4. Recently, the Internet is considered as an innovation in education, and has a great impact on people and organizations, both public and private. This study may inspire the awareness of the importance and applicability of the Internet in higher education institutions.

5. The proper preparation for an implementation and use of this new technology could be drawn from this study.

6. The results of the study can help policymakers to delineate issues that are effected by the Internet Use policy for higher education institutions.

7. Policy recommendations of the study can be used as strategies or guidelines for the management and administration of academic Internet service providers.