CHAPTER 1

INTRODUCTION
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The researcher divided information in this chapter as follows:

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1.2 A Broad Picture of the Internet in Thailand
1.3 The Objectives of the Research
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1.1 The Significance of Study

Nowadays, the advancement in communication enables the information to be conveyed globally. It is known as ‘Information society’. In this society, the information from any parts of the world could be transmitted and exchanged thoroughly and rapidly. This is the consequence of the information efficiency in which satellite, wireless transmission, optic fiber cable, microwave transmission and telephone connected with computer, etc. Thus, advancements in computer and communication technologies have contributed towards making the Internet feasible that has a profound impact on the lifestyle of present society.

The system of connection between computer and telephone is the most rapid among the information technology media development; this leads to the largest network of the Internet system; it is the interweaving locus of computers from all parts of the world and also a fundamental instrument for global communication. The networks consist of 233 countries all over the world. In this respect, the number of computers and networks connected to the Internet continues to grow consistently. In 1998, it was less than two per cent of the world’s adults had access to the Internet. At the beginning of the twenty-first century, it was found that out of 750 million people,
around 25 per cent of the world’s adults had accessed to the one million networks that make up the Internet.³

The Internet system facilitates the development of media and the multi-media to be interactive; this increases the communication efficiency. The system’s ability of connecting to all types and systems of computer, sustains the increase of network utility rate. Internet is one of the most useful and famous media for everyone all over the world because of its particular qualification, such as, the channel for people to be acquainted with strangers while the users can conceal their personal information. The Users name is the only one that can identify a person. Internet provides ample of information for active students, eager instructors, enthusiastic business persons and anyone who really needs extra knowledge twenty-four hours a day.

Using the Internet, keeps our lives modern and update continuously because Internet offers update information to users and it keeps us informed about matters occurred and changed everyday. Various information offered on the Internet responds to the needs of all the user groups. It is an important source of information for all; those in any career can search what they require and immediately read and see pictures at once on the Internet from various newspaper web sites. It has provided access to a larger range of information than could ever be made available in one given library.⁴

The Internet, therefore, is so important to present lifestyle of the people in all aspects of life such as business, entertainment and education, etc. The Internet is useful for all and keeps information technology meaningful and makes it more efficient and effective.⁵

In a broad picture, Internet has existed in Thailand since 1989 (supported by NECTEC: National Electronics and Computer Technology Centre). It has been used in Thailand for more than 14 years. It is very popular when compared with other technologies from the past. Among those Internet users groups, the students especially the university’s students respond to Internet in a large numbers in comparison with other groups in Thailand. The motivation behind their active use of Internet is drawn from the belief that Internet could provide them the ‘modern knowledge’.

The researcher is interested in the relationship between the Internet and the student, because Internet functions as a medium or channel to convey the message among the lecturers and students. The development of communication technology via
Internet not merely help lecturers and students in the process of exchange the knowledge, searching the data and setting up the study assistant medium, but also plays a role in stimulating the students to keep pace with the advance of communication technology and globalization. The interaction between Internet and the students, hence, attracts the attention of the researcher. Nowadays e-journals, online databases are available through Internet for researchers.

Until now, it appears that a few have been done regarding the study of the relationship between Internet and students. The available ones are mostly scattered and unorganized. This thesis title ‘The Usage of the Internet among State University Students in the North of Thailand’ is basically based on the direct experience of the respondents (students), the researcher hopes it would shed light on the concerned subject and enable those who are interested in this topic to have a comprehensive knowledge.

1.2 A Broad Picture of the Internet in Thailand

At the beginning when the Internet was introduced in to Thailand, the government provided necessary funding to the universities to install Internet connection. The government’s ThaiSARN was the first national backbone to serve the educational sector. Thai government devotes special attention for learning and education, which is described as “the most important long-term investment for the nation.” Indeed, education received the lion’s share of the government budget, some 25 per cent in the year 2000. Historically, there has been a strong link between Information and Communication Technology (ICT) and the education sector. Academics played a key role in introducing the Internet to Thailand.

As Meanwhile, the use of technology by the general public continues to grow (ISPs) the Internet has become a part of life in Thailand, Internet service providers provide various kinds of commercial ISPs have sprung up to support local demand; The Thai government has sponsored three Internet Service Internet connections Government Information :They are as follows .Departments, which are free of cost rof noitartsinimdA ygolonhceT noitamrofnl fo eciffO ,(GITS) Technology Service .detimiL ynapmoC cilbuP noitaroproC TOT dna ,(OITAED) mentEducation Develop
The GITS provides Internet service for all government sectors, while OITAED TOT is the only organization that provides Internet linkages among universities in Thailand. Thus, now Thai citizens can now access the Internet from everywhere in the country. Internet accesses occurred indicated that most of Thailand 2004 research in The Internet use mail was the most common-Bangkok and its suburbs, and that e .2004-1991 following table shows Internet users in Thailand from

**Table 1.1 The Number of Internet Users in Thailand**

<table>
<thead>
<tr>
<th>Year (B.C.)</th>
<th>Year (A.D.)</th>
<th>Users</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>2534</td>
<td>1991</td>
<td>30</td>
<td>NECTEC</td>
</tr>
<tr>
<td>2535</td>
<td>1992</td>
<td>200</td>
<td>NECTEC</td>
</tr>
<tr>
<td>2536</td>
<td>1993</td>
<td>8,000</td>
<td>NECTEC</td>
</tr>
<tr>
<td>2537</td>
<td>1994</td>
<td>23,000</td>
<td>NECTEC</td>
</tr>
<tr>
<td>2538</td>
<td>1995</td>
<td>45,000</td>
<td>NECTEC</td>
</tr>
<tr>
<td>2539</td>
<td>1996</td>
<td>70,000</td>
<td>NECTEC</td>
</tr>
<tr>
<td>2540</td>
<td>1997</td>
<td>220,000</td>
<td>Internet Thailand/NECTEC</td>
</tr>
<tr>
<td>2541</td>
<td>1998</td>
<td>670,000</td>
<td>Internet Thailand/NECTEC</td>
</tr>
<tr>
<td>2542</td>
<td>1999</td>
<td>1,500,000</td>
<td>ISP Club/NECTEC</td>
</tr>
<tr>
<td>2543</td>
<td>2000</td>
<td>2,300,000</td>
<td>ISP Club/NECTEC</td>
</tr>
<tr>
<td>2544</td>
<td>2001</td>
<td>3,500,000</td>
<td>NSO/NECTEC (household survey)</td>
</tr>
<tr>
<td>2545</td>
<td>2002</td>
<td>4,800,000</td>
<td>NECTEC (estimate)</td>
</tr>
<tr>
<td>2546</td>
<td>2003</td>
<td>6,000,000</td>
<td>NECTEC (estimate)</td>
</tr>
<tr>
<td>2547</td>
<td>2004</td>
<td>6,970,000</td>
<td>NECTEC (estimate)</td>
</tr>
</tbody>
</table>

Figure 1.1 Thailand's Internet User Population, 1991 to 2004.


According to the table 1.1 and figure 1.1, over the past decade from 1991 till 2004, the total number of users of the Internet have increased dramatically. At the onset there was only 30 total users, whereas there was an increased of 200 users in just one year (1992). A close look at the table shows a sharp increase from 1994 until the current period (2004-2005). Last years’ total was a whopping seven million users on an average.
According to the table figure 1.2, NECTEC’s usage record during 2002 indicated that 58.1 per cent of Internet use is connected through dial-up access, followed by leased-line access at 23.9 per cent. The method of Internet access depends on the population’s financial situation, thus, dial-up access, which requires the smallest investment per person, was the most popular access route. For business organizations, generally, the leased-line Internet access is used. New access technologies such as mobile Internet, satellite systems, and ADSL (asymmetric digital subscriber line) still see little use in Thailand. Investment costs for these technologies are prohibitive to most organizations, including those in the government sector. In addition, only a few companies in Thailand provide these services; mostly, they are available only in the big cities, primarily Bangkok.
According to the figure 1.3, the usage of Internet in Thailand in 2003, is spread among the four regions, North, Northeast, Central and South, the central region being the highest, chiefly Bangkok Metropolis. Bangkok Metropolis showed a high of 41.5 per cent followed by Greater Central of 13.7 per cent; this was followed closely by Suburbs at 12.8 per cent. The Northern region showed the same percentage (12.8). After which the Northeast with 10 per cent followed by the South with 7.4 per cent.8

It may be concluded that familiarity with the Internet is the greatest in Bangkok, which acts as a trend-setter for the whole nation. The central cities and North are influenced more quickly, followed by the Northeast and South.
1.3 The Objectives of the Research

To conduct the study, it is essential to outline the aims, objectives, its scope, method, etc. which are discussed in the following pages. The overall aim of this study is to find out the Internet usage of undergraduate and graduate students who use the Internet facilities. The six state universities in the North of Thailand will give some prominent results.

1. To study the IT awareness among the students in universities.
2. To find out Internet awareness among university users.
3. To find out the area of interest of the university students while searching the Internet and how they shift to Internet.
4. To find out what information university students would like to download and their satisfaction rate.
5. To find out the advance usage of Internet and web designing.
6. To evaluate the Internet usage and to study the benefits acquire by university students.
7. To study the problem faced by students in using Internet.

To satisfy the objectives a questionnaire was formulated and circulated among the students. These objectives may lead to produce the outcome of valuable results which can be implemented to develop the facilities for more use of Internet.

1.4 The Scope of Research and Place of the Study

The sample for study is restricted to undergraduate and graduate students. As the number of users are new and also beginner in the usage of the Internet. Hence, this study is undertaken. The study also covers the library and information science students. The six universities which are selected for study out of which Chiangmai University is offering Bachelor and Master Degree Courses in Library and Information Science. Remaining five universities they are not offering library science courses, however, use of the library and related subjects to library and Information Science are compulsory for all undergraduate students. However, the developmental activities of users from all subject areas who are using Internet are considered.
The scope of the study includes six state universities in the North of Thailand i.e. Chiangmai, Maejo, Maefaluang, Naresuan, Ramkamhang (Phare campus) and Thammasat (Lampang campus) Universities. The reasons that the researcher selected the aforementioned universities: Firstly, the universities are regarded as state universities, being recognized as top-ten universities of Thailand, therefore represent the universities in Thailand as a whole. Secondly, the available researches on the usage of the Internet in Thailand focus their interest mainly in Bangkok and its peripheral area. The research on the concerned subject in the provincial area is found to be scant. The dearth of the research in the provincial area, thus, inspired the researcher to devote attention specially to this particular area. Thirdly, since the researcher works as a lecturer in the North of Thailand, the researcher is familiar with the Internet using behaviour of the respondents. This resulted in the easy access of data collection.

1.5 The Expected Benefit of the Study

1. It is expected from the study “The Usage of the Internet among State University Students in the North of Thailand” would contribute certain results and a necessary information for the technological development and social change in Thailand.

2. It is expected that the opinions and suggestions collected from the study would benefit the academicians as it could help the various campuses and state universities in the process of administration, planning, policy setting and preparing themselves for the advancement of new information technology.

1.6 Research Methodology

The Internet usage is very common and also fruitful to the users. Users are increasing as observed from the statistics given in table 1.1 page number 4. To give qualitative services through Internet, it is necessary to find out users interest and why they are using the Internet. The questionnaire circulated among the students covers these issues without knowing the users, their interest and why they are using the Internet, will get good data for the study. However, the limitations had to be kept in
mind to restrict the coverage and get valuable results. The literature search helped to find out whether such type of study is conducted or any similar studies are carried out earlier in their area.

It is a survey conducted among the state university student in the North of Thailand. The list of the state universities is as follows: Chiangmai, Maejo, Maefaluang, Naresuan, Ramkamhang (Phare campus) and Thammasat (Lampang campus) Universities. Prior to the process of data collection, a pilot study was conducted. The questionnaire had been revised and approved before being distributed to the respondents. The procedures of the research contain information about the population and the sample selection. It also discusses on research's tools or instruments as well as its validity and reliability. Besides, it covers the data analysis and statistical devices. Moreover, the necessary documents are being used as sources and the guidelines of the questionnaire.

1.6.1 Population and Sample

The population of the research was the undergraduate and graduate students who are studying at the six universities. These are as follows: Chiangmai, Maejo, Maefaluang, Naresuan, Ramkamhang (Phrae campus) and Thammasat (Lampang campus) University. The total population of the students of the universities is 57,462.

The samples were selected randomly. The table of Yamane was applied to determine the sample size. According to the table of Yamane, 397 samples are considered to be an appropriate number, which can represent the over all number (57,462) of the population. The more samples we get, the more information and good result we gain, the researcher decided to add double number for the process of sample selection. The total number of sampling in this particular thesis became 800 samples. The details of sample selection are as follows.
<table>
<thead>
<tr>
<th>University</th>
<th>Students</th>
<th>Distributed questionnaires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chiangmai</td>
<td>23,897</td>
<td>220</td>
</tr>
<tr>
<td>Thammasart, Lampang Campus</td>
<td>1,200</td>
<td>80</td>
</tr>
<tr>
<td>Naresuan</td>
<td>21,314</td>
<td>200</td>
</tr>
<tr>
<td>Ramkamhang, Phrae Campus</td>
<td>2,714</td>
<td>50</td>
</tr>
<tr>
<td>Maejo</td>
<td>7,030</td>
<td>200</td>
</tr>
<tr>
<td>Maefaluang</td>
<td>1,307</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>57,462</strong></td>
<td><strong>800</strong></td>
</tr>
</tbody>
</table>

Sources: The Higher Education in Brief, Bangkok: Ministry of University Affairs Thailand, 2002.

1.6.2 Construction and Development of the Research Instrument

The study was performed in the following stages:

1. **Formulating a Questionnaire**

   The main content of the questionnaire basically related to the general use of the Internet. It seeks to find out the present status, the background of using computer and information technology, the purposes, the experiences of using the Internet; frequency of use, types of services and types of information used, attitudes, the benefits of using the Internet and the problems encountered by the respondent.

   The formulating of the questionnaire relied on various sources such as books, journals, paper of seminars and conferences, theses, CD-ROM Database, On-line Database, Internet, etc. A draft questionnaire was presented to the supervisor for further suggestions and comments. The language of survey is Thai since the respondents of the research are Thai students. To reduce the uncertainty, ambiguity and misinterpretation the preliminary questionnaire was tested through pilot study.
(2) Conducting Pilot Study and Revising the Questionnaire

Fifty students of Naresuan University, Phayao Campus were chosen as sample on the basis of their availability in participating in the pilot study. The respondents were asked to provide the answers to the preliminary questionnaire in order to identify ambiguous terms and statements. They were simultaneously requested to express the opinion and suggestion on the comments of the preliminary questionnaire. According to the pilot study, the average time consumed to complete the preliminary questionnaire pointed out by the respondents was about thirty minutes.

It is however notable that, these fifty students of Naresuan University, Phayao Campus did not participate in the final survey since their pre-conception would cause error to the result. Following the state of pilot study, the questionnaire was once again modified to avoid ambiguity. The final questionnaire was designed in Thai language. It was preferred instead of English language, so that the respondents would clearly understand it clearly.

(3) Implementing the Questionnaire in the Main Study

The next stage after the pilot study was the preparation of the covering letter specifying the purpose and significance of the research. Along with the covering letter, the instruction of the questionnaire (Appendix B) provided to the respondents was attached. The respondents were requested to fill the questionnaires with sincerity and, promised to keep their information and opinion strictly confidences. Furthermore, the researcher is a lecturer of Naresuan University, Phayao Campus requested an authorizing letter (Appendix A) from a vice-president of Planning and Development Section, Naresuan University asking for the cooperation in data collection from the four presidents of Chiangmai, Maejo, Maefaluang and Naresuan University and two vice-presidents of Ramkamhang (Phrae campus) and Thammasat (Lampang campus) University. After having gained permission from the four presidents and two vice-presidents of the six universities, to be in accordance with the pilot study, the researcher provided the respondents thirty minutes to complete the questionnaire.

1.6.3 Tools or Instruments of the Research

The questionnaire aim to find out the IT and Internet awareness, the area of interest, kind of information that university students would like to download, the
advance usage of Internet and web designing, the evaluate Internet usage, the benefits acquire and the problem faced by the state university in the North of Thailand. The questionnaire consisted of six parts, it is as follows:

**Part I:** The survey tried to study demographic data like gender, class and subject of the respondents.

**Part II:** The survey attempted to find out the IT and Internet awareness among the students in universities. The subjects were asked as topics: parents' income, owning a personal computer, the place of use computer, computing subject and computer programme to study at high school, the computer course from other institutes, rating knowledge as an Internet user, information resources about Internet knowledge, finding information of new Internet services, rating familiarity/ability with the topic of computer and Internet, period of year and time on using the Internet, the reasons to use the Internet at a specific time, and the habitual activities that the Internet has replaced.

**Part III:** The survey aimed to find out the area of interest and what information university students would like to download and their satisfaction rate in these topics: the reasons and objectives of using the Internet, places to access the Internet, places in the universities to access the Internet, knowledge and information resources of Internet services for students, Internet account owners, the reasons to have an Internet account, the use of Internet services /chat programme/browser/web sites/search engine/frequency of retrieve journal article on-line, gaining type of format and the plenty of information on Internet.

**Part IV:** The survey aimed to find out the advance usage, evaluate the Internet usage, the benefits acquire and problem faced by university students consist of: creation and procedure to create a web page, upgrade the knowledge and time frequency to do, the use of Internet for studying, the necessary of Internet for education and importance for life, the attitude toward using the Internet, the level of usefulness and the problems faced while using the Internet.

**Part V:** The survey ask to find out suggestions to improve the require use of Internet by open ended question in the last question.
1.6.4 Validity of the Questionnaire

This study was intended to survey the present status, the background, the purposes, the experiences, frequency of use, types of services and types of information used, the attitudes, the understanding, the benefits, the problems, the promotions of using the Internet and the policy of the Internet services of state university students in the North of Thailand. Efforts were made to ascertain the content validity of the questionnaire. Validity is defined as the instrument to measure the performance which is intended to measure. Therefore, the researcher carefully and systematically examined whether the questions of the questionnaire represented the kind of information that the researcher wanted to get. The questionnaire’s construction and development were based on the review of literature, from both overseas and local research and interviews with researchers and teachers who have studied the subject of the usage of the Internet. During the pilot study, the respondents were also asked for their comments and these together were discussed with specialists. The thesis supervisor’s suggestions were used to modify the final questionnaire and was employed in the main study. Therefore, it is reasonable to claim that the questionnaire is valid in term of content.

1.6.5 Reliability of the Questionnaire

Busha and Harter stated that reliability is used to characterize stable, consistent and dependable research methods. The questionnaire can be used anytime to obtain current use and extend the usage of the Internet with the same set of questions of this questionnaire. The answers may vary according to time and situations of the subjects. However, the questions will be the same if it requires information similar to the study topic. The questionnaire serves as a measuring instrument to measure the same thing. Further, the instrument was statistically analyzed for internal consistency/reliability using Cronbach’s Alpha. The analysis shows that the survey instrument has a reliability coefficient of 0.887.

1.6.6 Measurement and Statistical Devices

After the process of data collection, the information was organized, computerized and analyzed by means of Statistical Package for Social Science (SPSS) programme. The information later was categorized and calculated to find the
frequency, percentage, mean and standard deviation. The result of the study was presented in descriptive statistics.

Notably, the data analysis of part I based on percentage, part II and V which are rating scales, applied percentage, mean (\( \bar{X} \)) and standard deviation (S.D.), whereas, part III and IV were analyzed without percentage, which mainly relied on mean (\( \bar{X} \)) and standard deviation (S.D.).

According to Likert scaling technique, the range of the scores was described as follows:

Question No. 13, inquired about how they rate their familiarity with the topics of computer and Internet. 5 levels of answers of their familiarity and their scores were provided in order to calculate the percentage and means were as follow:

<table>
<thead>
<tr>
<th>Scale Value</th>
<th>Level of performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>they are expert user/knowledgeable users</td>
</tr>
<tr>
<td>4</td>
<td>they are confident users</td>
</tr>
<tr>
<td>3</td>
<td>they are casual users (Used only a few times/sometimes)</td>
</tr>
<tr>
<td>2</td>
<td>they have heard about/seen it, but never use it</td>
</tr>
<tr>
<td>1</td>
<td>they have never heard/seen it</td>
</tr>
</tbody>
</table>

Question No. 19, asked the number of times they used the Internet during the week. 5 levels of answers of their number of times and their scores were provided in order to calculate the percentage and means were as follow:

<table>
<thead>
<tr>
<th>Scale Value</th>
<th>Level of performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>More than 6 times</td>
</tr>
<tr>
<td>4</td>
<td>5 – 6 times</td>
</tr>
<tr>
<td>3</td>
<td>3 – 4 times</td>
</tr>
<tr>
<td>2</td>
<td>1 – 2 times</td>
</tr>
<tr>
<td>1</td>
<td>Does not use</td>
</tr>
</tbody>
</table>

Question No. 39, asked the time frequency they upgraded the knowledge about the Internet networking. 4 levels of answers of their time frequency to upgrade the knowledge and their scores were provided in order to calculate the percentage and means were as follow:

<table>
<thead>
<tr>
<th>Scale Value</th>
<th>Level of performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Everyday</td>
</tr>
<tr>
<td>3</td>
<td>Once every 3-4 days</td>
</tr>
</tbody>
</table>
2 Every other day
1 Once in a while

Question No. 44, asked their attitudes of using the Internet. 5 levels of answers of their attitudes and their scores were provided in order to calculate the percentage and means were as follow:

<table>
<thead>
<tr>
<th>Scale Value</th>
<th>Level of performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Strongly agree</td>
</tr>
<tr>
<td>4</td>
<td>Agree</td>
</tr>
<tr>
<td>3</td>
<td>Not sure</td>
</tr>
<tr>
<td>2</td>
<td>Disagree</td>
</tr>
<tr>
<td>1</td>
<td>Strongly disagree</td>
</tr>
</tbody>
</table>

Question No. 45, 46 and 47, asked about the levels of usefulness of using the Internet, problems in using the Internet and body pain from using the Internet. 5 levels of answers and their scores were provided in order to calculate the percentage and means were as follow:

<table>
<thead>
<tr>
<th>Scale Value</th>
<th>Level of performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Highest</td>
</tr>
<tr>
<td>4</td>
<td>High</td>
</tr>
<tr>
<td>3</td>
<td>Medium</td>
</tr>
<tr>
<td>2</td>
<td>Low</td>
</tr>
<tr>
<td>1</td>
<td>Lowest</td>
</tr>
</tbody>
</table>

After calculating the data from Part I to Part V, the researcher made conclusions of the results of the study and presented the data in tables, figures and narrative descriptions.

1.7 Hypothesis

1. The respondents selected for the study learn to use the Internet from their friends rather than other sources.

2. Majority of the students upgrade their knowledge about the Internet networking at libraries.

3. The respondents mostly use the website from Thailand.
1.8 Chapter Schemes

The study is divided into six chapters, which is as follows:

**Chapter 1:** The introduction includes the significance of the study, broad picture of the Internet in Thailand, objectives, scope and place of the study, definition of terms, expected benefit, research methodology, chapter schemes and literature search.

**Chapter 2:** Profile of Thailand. This chapter focuses on geography, climate, people, culture and language in Thailand. Further, the researcher explains about historical background of education in Thailand, higher education in Thailand, it's education reform, administration and management, education system and library and information science education in Thailand. Moreover, the last part of this chapter presents the details of each university in the North of Thailand and information technology reform in Thailand is also highlighted in order to provide a broad background to the readers.

**Chapter 3:** The Internet: This chapter renders the readers, various details of the Internet. It also clarifies about the Internet in Thailand. It covers the topic of categories of networks, definitions, history, Internet in Thailand, basic of the Internet services, locations in cyberspace, the Internet connection, resources requirements, its usefulness, the World Wide Web, search engines, the Internet and education, the Internet in library and information centre, information resources on the Internet, wireless connection, advantages and limitations of the Internet and Intranet.

**Chapter 4:** The Internet and Library: This chapter examines and studies the range of tools and impacts of the Internet as applied in Library and Information Science practices. Any new development will transform both the institution and the user theory. It has therefore taken the approach to look in depth at this change and their extends. The researcher’s home, Thailand, has bee mentioned to some extend owing to the evidence of Internet use both in and outside the libraries. Some clear example as with Naresuan University library, has been given to illustrate this point. The research hopes that the reader has profited from this knowledge.

**Chapter 5:** Data Analysis: This chapter handles the result of the questionnaire survey including data analysis. It is explained in descriptive statistic with the presentation of the tables and graphs.
Chapter 6: Conclusion: This chapter attempts to demonstrate the interpretation of data including conclusions, implications and recommendations. At the end of the work, appendices and bibliographies are provided.

1.9 Review of Literature

Review of literature is conducted from various sources i.e. periodicals, research papers, theses, dissertations etc. The researcher separated the area of research and type of resources are as follows:

1.9.1 Review of Literature in Thailand

(1) Ph. D. Thesis

Kalaya Udomvitid (2003) did a study on “The E-Commerce Sales Tax: A Case Study of Thailand.” This study illustrated that criteria such as efficiency, equity, administrative costs, and technology feasibility which should be used to assess an e-commerce tax. This study applied such criteria to assess the e-commerce tax in developing countries by using Thailand as a case study. After weighing the criteria, this study suggested that an e-commerce tax should not be imposed in Thailand in the next few years. This study also demonstrated that there has been only a small amount of sales tax that has been lost from e-commerce in recent years. If the e-commerce transactions are exempted from sales tax, the tax loss is less than one per cent of total tax revenues by 2004. Nevertheless, the tax losses would increase significantly in the future. The study recommends that the Thai government needs to revise the existing tax rules to prevent the tax losses and keep tax neutrality between traditional and electronic commerce. Moreover, to facilitate policy-making decision concerning e-commerce including tax policies, data gathering is the most important task of the Thai government.11

Wanna Pongthinthongngam (2002) did a research on “Information Infrastructure in Thailand from Policies to Practice: A Case Study of the Tambon Internet Project.” According to the result the Thai Information Technology policies and the Thai National Telecom Master plan were developed as a result of direct and indirect pressure from international organizations and transnational corporations. However, in the case of the Tambon Internet Project, it could be concluded that the
project was not directly pressured by both international organizations and transnational corporations since it was seen as a minor project. The project was pushed forward by a national politician in order to get more votes for his party in the next general election. However, the use of the Tambon Internet by the participants was very limited. This project, which aimed to provide a networked computer system for Thais to access information, may fail to meet the government objective because the use of the Tambon Internet at Subdistrict Administration Organization conflicted with their pre-existing communication behaviours. The study concluded that before introducing any new information technologies into villages, the government should take appropriate steps to insure that the new technology will be accepted and used by Thai people in the field and the new technology will fit with the local culture.12

**Busakorn Suriyasarn (2002)** did an “Analysis of Thai Internet and Telecommunications Policy Formation during the Period 1992-2000.” This study described the development of Thai Internet and analyzed the policy making process of telecommunications industry reforms. The study employed John W. Kingdon’s political model of policy process and J.P. Singh’s conceptual framework of factors determining telecommunications restructuring and state types in decision-making process to analyze the role of multiple policy forces and the role of the Thai state in network policy formation. While the main impetus for restructuring is Thailand’s aspiration to become the economic hub of Southeast Asia, a myriad of forces are found to be at work in telecommunications policy reforms. Economic integration and global liberalization agenda enforced by the WTO and the IMF have had direct impact on the country’s policymaking. Domestically, in the juxtaposition of maturing democracy and intensifying money politics, business interests become increasingly influential in telecommunications policymaking through more direct political maneuvering at the top levels. There is also a burgeoning influence from public interest groups and the Senate. The plurality of interests in the policy process hampers the ability of the state to direct policy outcome. In the system where policy-making is plagued by vested interests and political squabbles, the policy-making function of the state is seriously undetermined and the development of Thai Internet suffers as a result.13

**Nareerat Suwanvaree (2000)** did an analysis on “Moral Behaviour of Graduate Students on Internet Network”, the results revealed that the moral behaviour
on Internet network of students in prosaic was higher than those in private violation, illegal gamble and pornography. The least moral behaviour yielded to security disturbance and crime. Most of the graduate students used Internet network for entertainment and communication. Those variables correlated with the moral behaviour were gender, institute, faculty and field of study, experience, Internet account and homepage. There were significant difference between male and female, as well as the institutes and their opinions on moral behaviour. Hacking access, privacy, offensive language, gambling and pornography found in using Internet network were serious problems. The result findings suggested that there should be some kind of Computer Abuse Act in Thailand. The immoral behaviour on Internet network should be prevented cooperatively by parents, network administers and the institutes.14

Kobkul Sunphakitjumnong (1998) examined “A Policy Research Study for the Formulation of Internet use Policy for Thai Higher Education Institutions” The fourteen key issues of the findings, which should be included in the Internet use policy for Thai higher education institutions are the following — user entitlement, statement of objective, proper use, responsibility, intellectual property, privacy, equity, security, ethics, network etiquette, academic freedom, freedom of expression, data and information, and service charge. The study found alternatives to address each key issue. Some alternative are coincided with Western ideas, some alternatives reflected the value of Thai culture and norms. The mechanisms that the respondents of the study preferred to use to support the Internet use policies involved mostly, the dissemination of data and information measures such as training, circulation of documents rather than the operation and control measures such as rigid and complex rules and regulations.15

Boonruang Niamhom (1997) conducted a survey on “The Development of Instructional Systems on Internet for Higher Education.” The findings were as follows:

1. From content analysis on WWW the instruction emphasized activities and services on Internet. Teachers controlled, checked, followed-up the students, and prepared learning-supporting resources on the Internet. E-mail and WWW used were mainly in instruction. Instruction was based on behavioral psychology, collaborative learning, and self-directed learning. The instructional web-site include home-page,
information, course description, teacher and learner profiles, learning activities, and link resources.

2. The instruction system include the following steps: learning objectives, specification, learners’ analysis, lesson plan, learning strategies and activity designs, learning resources on Internet, teachers’ training, implementation of instructional process with Internet services, students’ learning skills, students’ control and follow-up, students’ evaluation, teaching evaluation, and feedback for improvement of instruction.

3. The implementation of the developed instructional systems found that the instructional systems were suitable. Every step was essential. Most participants were able to implement the systems in designing and developing of instruction via Internet. Problems found in the implementation were the slowness in linking to the outside resources and communication systems.

(2) Master Thesis

Alisa Kosolvijak (2003) studied about “Internet in Schools: Socio-Economic and Political Factors in Internet Use in Rural and Urban Schools in Thailand.” This study explored the influences of social, economic and political factors of Internet use in eight rural and urban schools in southern Thailand. The results indicated that most of the respondents in both rural and urban schools perceived IT as a beneficial medium for education and for daily life. However, most teachers lacked understanding and proficiency in the use and application of IT in their teaching. Workloads, age and time constraints were highly related to the lack of IT proficiency in teachers and consequently limited IT manpower in schools. Most schools faced computer and IT budget constrains, low capacity equipment and inconvenient Internet connections. Most rural schools experienced unstable telephone signals leading to Internet connection difficulties.

Sawita Kanjanatanakorn (2003) did a research on “Information Technology Competency of Grade 9 International School Bangkok Students.” The results of the study revealed as follows:

1. The demographic factors of Grade 9 ISB students, the frequency of using computer and Internet both at home and at school, the time spent on accessing the computer and Internet at school, and the quantity of academic information on-line at
ISB had no relationship with knowledge on Information Technology and the skill of computer technology.

2. The time spent on accessing the computer and Internet at home had positive relationship with the computer technology skill but had no relationship with the knowledge of Information Technology.

3. The quality or usefulness of English subject presented on-line had positive relationship with knowledge of the students while the other academic information had no relationship with the knowledge of Information Technology. The quality or usefulness of Science subject had positive relationship with the computer technology skill of the students.

4. The school could use this result to adjust or input more information on-line and information and communication technology courses in order to increase the students’ Information Technology skill and knowledge.\textsuperscript{18}

Atchara Suwannakin (2003) examined on the “Behaviour and Needs to Access Information Through the Internet of Persons with Visual Impairment Living in Bangkok and Vicinity.” The study found that:

1. In order to access information through the Internet, most of the interviewees used a personal computer at home. A minority of them used the Internet at work or in academic institutions. Mostly they learned to use the Internet from friends. A minority learned from classmates at high school from radio or TV programmes.

2. The purpose of using the Internet was to search for information. A majority used it to increase their knowledge and download programmes. Concerning their needs for accessing information and communicating through the Internet, they needed information that was of quality, variety and easily readable, quick to download, and was accessible by an up-to-date real-time search.

3. Concerning the format and presentation, they need a presentation that is helpful for accessing information. A minority need a more suitable programme for using and reading the content of the Internet.

On problems and obstacles while accessing information through the Internet, most of the interviewees confronted the problem of having English as the media to access information and communication. A small group had problems with the format
Urapa Prasertsaruay (2002) identified the "Factors Affecting Internet Chatting of Kasetsart University Laboratory School Students." Results of the study showed that the students’ demographic factors which consisted of gender, age, and study programme were not the factors that affect the Internet chatting, keeping in mind the behaviour of the students. Moreover, the communication factors which consisted of mass media and people media were also not the factors that affect the Internet chatting using the behaviour of the students. As regard the Internet accessibility, convenient places for Internet chatting like - home, school, and Internet café also did not affect the Internet chatting, using behaviour of the students. Furthermore, family factors, which consisted of the number of students' family members and parents' job, did not affect the Internet chatting, using behaviour of the students. Besides, it was also found that parents allow their children to use the Internet for unlimited period of time and there was no control over the time spent for Internet chatting. The students could use the Internet whenever they could at any hour of the day with no restriction by their parents.

Sabaiporn Charupan (2001) identified in her work entitled: "The Use and Problems of the Internet for English Language Teaching in Thai Public Universities." The results were as follows:

1. With reference to the general background, it was found that more than half of Thai English teachers used the Internet for some part of their teaching. Only 8.3 per cent never used the Internet for their teaching. Slightly less than half used the Internet for classroom teaching, while only one teacher used it for distance learning.

2. Regarding the use of CMC (computer-mediated communications), and resource on the Internet, e-mail was used mostly. Most teachers used the Internet for planning, for accessing ready-made teaching materials on-line and a few of them for needs analysis. Teachers also used web sites for accessing articles on English teaching, doing exercises from on-line courses, summarizing news and assessing work assignments while using the Internet. Nearly half of them were interested in creating their course web pages to teach on-line.

3. As for the difficulties of using the Internet, the most serious problem was limitation of student access to the Internet. Other problems teachers reported from
their current using was time consumption, not knowing locations of required web site and not finding previously used web sites. Most teachers faced problems of lack of computer skill in using computer-conferencing programme and in creating class web page for their future use. While some teachers lacked skills in creating web pages in their Internet current using.\textsuperscript{21}

According to Jantima Jinwuth (2001) findings regarding “The Use of the Internet by Upper Secondary Level (Mattavom 4) Thai Students who are High Achievers in English Language” were as follows:

1. Nearly all students use the Internet. All agree that using the Internet was useful for their study, choosing “enjoyment” as the first benefit while using the Internet. Almost all the students had used the Internet for 1-3 years. More than half used it once a week and their family members influenced them in its use. The majority of the students never received any Internet training. Most students used Yahoo as a main search engine. The vast majority used the Internet 25 per cent of the time compared with 75 per cent of the time reading textbooks. The most popular activities were reading for entertainment, listening to songs from on-line radio, chatting in voice chat rooms, and writing e-mails.

2. When Internet is used as an aid to learn, they often found information to prepare their own reports. As for self-development, the students often used e-mail for communication. For other purposes, they often used the Internet for entertainment.

3. The top three preferred features were as follows: i) various kinds of challenging/interesting activities, ii) information relevant to the title, subject matter, purpose, activity and procedures, iii) sites that were not overloaded and not limited to browser technology or software requirement.

4. The main problems were difficulties in locating appropriate information, insufficient computers and support staff at school.\textsuperscript{22}

The case study on the use of Internet by the “Youth in Daily Life of Assumption University Students” by T. Sri-udomsilp (2000) revealed that about 56.41 per cent of 312 students had a low knowledge of Internet use, while the other 43.59 per cent had a high knowledge. 50.96 per cent were exposed to the media at a high degree, while other 49.04 per cent were at a low degree. The percentage of those who watched television most frequently about 3-5 hours everyday was 75.96 per cent. Those who received most information through the Internet, accounted for 47.12 per
cent of the respondents. 46.38 per cent used the Internet at the university the most. Most of them had used Internet for 2-4 years. In a week they spent 3-4 days on the Internet for 1-2 hours a day. They checked e-mail and searched WWW 1-2 times a week. 166 students had the right knowledge of using the Internet, whereas 146 students had a little knowledge about this. Out of 8 variables, it was found that only the family economic status influenced the students' Internet use, while the other variables such as sex, age, field of students, GPA, monthly allowance, knowledge of Internet and exposure to the media had no impact on their Internet use.23

**Seksun Saiseesod (1999)** studied “The Use of the Internet by Students, Instructors and Administrators of Rajabhat Institute Udon Thani.” In this study three hundred and sixty-one students were used as samples. It was revealed that most students used the Internet 1-2 times a week (66.5 per cent) for 1-2 hours per session (59.8 per cent). Most of them reported that the purpose of using the Internet was for self-study and to save time in seeking information. They revealed that there were not enough computers in the institution to browse the Internet. Most of them suggested that the institution should increase the number of computers in the computer rooms.24

**Jiracha Thaothong (1999)** identified the “Factors Affecting Personal Internet Demand of Public Universities in Bangkok.” The result of this study showed that sex, age, salary, field of study, accessibility to the network, number of computers serviced and websites regularly used are not relevant factors to determine the Internet demand. Whereas the following factors such as occupation, education level, possession of the computer, places from where the Internet was accessed, efficiency of the main server, habitual use of the Internet, ability to use English and operate computer, regular time of using the Internet and commonly used search services indicated that they were related to Internet user demand.25

**Pussadee Nonthakumjane (1999)** conducted a survey entitled: “Information Seeking on the Internet of Engineering Students” in order to find the purpose of use, location, frequency of use, service of the Internet, information source, and problems in information seeking. The research findings indicate that most engineering students (76.77 per cent) used the Internet to seek information on the Internet. Their main purpose of information seeking was for entertainment. Most students (40 per cent) accessed the Internet from their own houses for 1-2 times a week. Service used by most students was WWW. Most of them (81.64 per cent) used educational
organization sources on the Internet to find information. A problem encountered by most students (70.75 per cent) was that they were unable to connect to the Internet servers when they needed.26

C. Timtong (1999) studied “State, Problems and Needs Concerning the Use of Internet for Instruction of Teachers in Secondary Schools Participating in School Net Thailand.” The majority of the secondary school teachers participating in the School Net Thailand accessed to the Internet service used modem and telephone line connected to the NECTEC. Most teachers accessed the Internet from school due to the unavailability of the Internet access at their homes. Teachers use WWW service frequently. Supporting budget for the Internet came from parents’ associations. Teachers were trained to use Internet. The schools had a policy to support the use of the Internet for instruction. The most serious problem concerning the use of Internet for instruction of teachers was found by the study was, the slow speed of the Internet connection. The network system was complicated. The Remote Login service was found to have serious problem. Most teachers did not find time to use the Internet. The teachers using Internet for instruction wanted the speed of Internet service to be increased. Also it was found that there was a need to increase the budget to support the Internet project in schools.27

Wassana Anuwarn (1998) evaluated the “Internet services at the Provincial University Libraries.” The results of the study were as follows:

1. The status of Internet services in the provincial university libraries revealed that there must be a Centre for Library Resources and Education Media. Most libraries used its university computer centres/networks and some used private company’s services as their host servers and linked to the host servers through fiber optic cables or telephone cables with the speed of less than 64 K. All libraries provided Internet services during the regular open-hours of the libraries. Most libraries allowed the users to use the Internet by themselves, with the assistance of the librarians. An Internet service available at each library was WWW. Most libraries provided access to Telnet/Hytelnet, e-mail, Gopher, FTP and Usenet News.

2. The opinions of administrators and librarians/officials toward Internet services in the libraries revealed that both of them agreed on the importance and the need to provide Internet services in the libraries at the highest level. They viewed that Internet enabled the library users to search for information both inside the country and
abroad, and provided great benefit for study and teaching in universities at the highest level.

3. Problems in providing Internet services in libraries according to the opinions of the administrators and librarians/officials were found similar as follows: inadequate budgets for purchasing and maintaining materials; library personnel lacked skills in using the systems and lacked language skills, users lacked skills in using the system; computers for Internet services were inadequate; and the library space was so limited and crowded that there was no specific area for Internet services.28

Results of the study conducted by T. Sintupong in 1997 regarding “status, need and problem of Internet usage in export business” indicated that most of the export business use Internet to improve their potential of business communication. Internet usage has more advantages than disadvantages in their point of view. The most popular service is the electronic mail (E-mail). Most of the export business users need to expand their database capacity and the non-Internet users should decide to use it in the near future. The major problem is slow data loading, expensive service fee and the system being frequently down. Most export businessmen strongly agree that the Internet usage can enhance opportunities in marketing competition for business sector due to its convenience and high efficiency. Moreover, it will lead to more benefits in the global business and facilitate convenience in electronic commerce system by the year 2005. For this, the improvement and development of the fundamental system base need to be done first.29

According to Komkrit Tapkila (1997) findings about “The Internet Users’ Behaviours of Upper Secondary Education Students in Schools Participating in Schoolnet Thailand” are summarized as follows:

1. Behaviour of the users before they were introduced to Internet: Most students had experience in using Internet for about 9-10 months. They used Internet in schools and learned from friends. Entertainment and advantages of learning were the reasons for using Internet. Between groups of gender, field of study, and school location were significantly different in the process of learning Internet.

2. Behaviour of the users during the use of Internet: Most students logged on about 6-7 hours per week, 1-2 hours in each time, has used during day time on working days, using alone, had used WWW for entertainment and used English language rather than Thai. They mostly used e-mail to communicate with friends.
Once they found an interesting topic, they wrote down the URL. Male students used Internet, e-mail, and opened English language website more than female students, while female students opened Thai language website more than male students. Arts students hooked to entertainment and online chat to communicate with friends more than science students. Provincial students logged on Internet for knowledge and education during day time and on working days on Thai website more than students in Bangkok, and also mostly with friends.

3. Behaviour of the users after using the Internet: Students gained pleasure and knowledge, and met new friends on the Internet. Students applied the knowledge acquired from Internet to their education, talked and shared information with others. They were also acquiring more knowledge. Arts students enjoyed their use of Internet more than science students. Provincial students applied knowledge gained from Internet to their education more than students in Bangkok.

4. Factors on school support, learner characteristics, and method of learning Internet were positively related to amount, day and timing of using the Internet. School support and attitude toward Internet was also found to be related to the benefits gained from Internet.

Ongarj Ritthongpitak (1996) studied about “The Use of the World Wide Web on Internet among the University students.” The results of this research were as follows:

1. Most of the students used WWW at the university. Entertainment was the main topic of their interest. The main purpose of using WWW was to develop their knowledge and skill of using WWW in seeking information and relaxation.
2. The students were satisfied with the format and contents of WWW.
3. The advantage, complexity and compatibility of WWW were positively correlated with the students’ use of WWW.
4. The amount of time spent using WWW varied according to sex, age, and computer ownership.
5. Satisfaction cannot explain the amount of time spent using WWW.

P. Jirapinnusorn (1996) studied “Information-Seeking Behaviour through Mass Media and Internet among Students and Employees of King Mongkut’s Institute of Technology North Bangkok.” The study found that the main reason for seeking information through mass media and Internet was to acquire personal knowledge. The
types of information sought from the media were entertainment and news. Cinema, radio and television were the most popular media used for entertainment. News-seeking was through printed media. Internet was used for acquiring information on education/research, science/technology and entertainment. The WWW, electronic mail was used for two-way communication and downloading software for work, were the main purposes of using the Internet. The slow speed of the Internet system was the main problem of while using the Internet.32

Pojanart Thongkamcharoen (1996) did a research on “States, Needs and Problems Concerning the Internet Utilization in Instruction in Higher Education Institutions under the Jurisdiction of the Ministry of University Affairs.” One of the purposes of this research was to study states, needs and problems related to the Internet, 333 students in higher educational institutions were chosen for this purpose. It was shown that most students used electronic mail to communicate with friends and teachers (92.8 per cent). For their educational purpose, most students used WWW search from the services of the Internet network system, electronic mail, file transfer, and remote login respectively. The main problem for the students applying the Internet services into their instruction was that they did not have their own computers and such application could not reach the maximum implementation. Moreover, the support from institution was inadequate on the management of areas, equipment and personnel to provide advice.33

Ravadi Kongsuphakul (1995) did an observation on “The Use of the Internet among University Students in Bangkok.” The purpose of the study was to analyze the status of information technology utility, particularly the Internet. It was found that there was a correlation between possessing a personal computer and the use of the Internet system. Specifically, possessing a personal computer is compatible with the frequency of the use of Internet for educational purposes, with extra research on academic matter, with the number of access to the system. Most students used e-mail for contacting their friends and they used it to exchange knowledge with the students of one institution with the students of other institutions and/or with foreign friends. It was also found that students used the Internet for their homework or assignment because they did not have much time to surf the Internet for other purposes as they had a lot of subjects to study. The obstacles in using the Internet, were the internal system itself and the communication lines. Because of lengthy download timing and
insufficient on-line availability, most students felt frustrated while using the university Internet system and logging on to the system at home.\footnote{34}

(3) Research

Noppadol Prammanee (2003) studied about “A Critical Analysis of Adoption and Utilization of the Internet in Thailand for Educational Purposes” In this research it was found that the Thai government has recognized that the country needs more educated people to stimulate its development. In this regard, the Internet can play a pivotal role in providing mass education, cheaply and conveniently. Thailand has adopted the Internet to improve educational systems because the Internet has the potential to improve the quality of education. Thus, the Thai government utilizes the Internet in an optimal manner to link schools and universities throughout the country in order to achieve basic universal literacy.

Yet to implement the Internet in Thailand, the policy makers and educators need to consider the economic and cultural aspects of the country carefully, including attitudes and opinions of the citizens, about the Internet. Adopting the Internet technology from more advanced countries is a crucial factor for Thailand because it is still a developing country, and it lacks human resources, funding, and technology expertise. This makes it difficult for it to adopt and assimilate Internet easily from Western countries.

Successful adoption of the Internet in Thailand demands technological adjustments in the Thai social structures. Policymakers should be encouraged to incorporate the Internet into all future educational plans. The Thai government administrators need to act as opinion leaders to provide plans and policies to support this technology. Moreover, both policymakers and administrators should work with educators as change agents. Educational administrators need to consider the complete cost of the whole Internet package as well as the attitudes and skills of potential end users before framing policy for adopting the Internet.\footnote{35}

Peter Vitartas and Sutida Sangkamanee (2000) did a survey on “Thai Student’s Use of the Internet: Implications for Web Page Design.” This paper reported on the Internet behaviour of university students in Thailand and in particular through the results of the research on the impact of the Internet on media usage and factors considered important in Web page design for this group. The findings revealed that the use of the Internet is prevalent among University students in Thailand and that
is used for leisure and entertainment as well as study, E-mail to friends and contact with the university. The Internet does not appear to influence the amount of television viewing or print media usage and the key factors identified for Web page include information content, graphic/perceptual effects, entertainment and rewards/benefits obtained from the page. Implications for Web page design and limitations are discussed.36

S. Joy Aswalap (1999) paper entitled: “Internet Use Study: The Implication of Culture, Language, and Policy: A Study at Thai University,” identified ways to achieve success in the use of global computer-mediated communication (CMC) – symbolized by the Internet and the Web – in developing countries whose understanding of and accessibility to the technology are far less than those of developed countries. Based on research on CMC conducted in industrial countries, the study was conducted at a higher educational institution in Thailand. It is hoped that the result will help local policy maker to understand the technology and consequently plan proper policy in a better way.

The research presented results of a study on the use of Internet use by all the faculty members of all departments and schools or a large university in Thailand. The primary focus of the research is on the impact of culture and language on the use of Internet – its services and influencing factors – among various disciplines of faculty members. New dimension of culture and language added to previous Internet-use studies, consequently added new perspectives and initiate research in CMC, specifically in developing countries whose characteristics differ from industrial countries. The results will help Internet users, professionals, organizations, administrators and policy maker to understand the “imported” technology better and fine-tune their actions and policies in achieving success in this CMC adoption.37

Jeerapan Sawatdipong. (1999) examined the “Use of World Wide Web Service in the Main Library, Chiangmai University.” The results revealed are as follows:

1. The majority of the users of the WWW service were undergraduate female students from the faculties of Social Sciences and Humanities.

2. The majority of the users had basic knowledge of computers. They used the service in order to search for information one or two times per week taking one hour at a time. The users had no problem accessing educational web sites using self-
learning techniques. The information they often retrieved was bibliographic or with abstract information by accessing many web sites at a time and most of them never accessed via the Chiangmai University Library Homepage. The users were satisfied with the library Web site guide which was available on the computer tables. They disagreed with the idea of giving their identity cards to the library staff before using the service.

3. The main problems were the inadequacy of computers for users and the lack of high-speed computers to retrieve information.38

1.9.2 Review of Literature in Foreign Country

(1) Ph.D. Thesis

Wei-Long Hwong (2003) did a study on “Internet Learning: An Assessment of Students’ Internet Usage in One College in Thaiwan (China).” Major findings derived from this research include: (1) There were three variables correlated with the levels of Internet usage: Internet literacy, years of experience with the Internet and number of access locations. These three variables contributed positively to the level of Internet usage in studies. (2) The higher the levels of Internet literacy students had, the more frequently they used the Internet in their studies. (3) Students who had a higher level of experience with the network had a higher usage of the Internet. (4) Students who had a higher level of access to the Internet had a higher use of the Internet. (5) Students perceived the Internet traffic congestion as the major barrier to its use. Insufficient bandwidth that caused very slow data transfer, was a large problem for college students in Taiwan.39

James Edward Myrick (2003) conducted a survey on “Internet Filters in Alabama Public School Systems.” Technology coordinators and elementary and secondary teachers in Alabama public school systems were surveyed regarding their use and perceptions of Internet filters in school. The study found that all participating school systems were using an Internet filter for the most common purpose. Technology coordinators and teachers agreed that Internet filters should be used to protect students from inappropriate materials on the Internet. The majority indicated that having an Internet filter in place did not interfere with students who were learning to use the Internet. Furthermore, both groups indicated that Internet filters did not prevent teachers from planning, using and teaching effectively in the classroom by
using resources available on the Internet. The understanding level of teachers concerning the use of an Internet filter was lower than that of technology coordinators. It was not evident that effective educational classes were being conducted to cover the implementation of an Internet filter and the application of acceptable use of policies concerning the use of the Internet.40

Christine Theresa Chelus (2003) conducted a survey “Access, Assessment, and Bandwidth: High-Speed Internet Access and Distance Education.” This study examined the relationship between high-speed broadband Internet access and student achievement in an on-line course environment. No face-to-face contact was required in this course and professors’ immediacy was available via digital interaction only. Digital interaction was achieved through the use of the discussion groups, virtual chats, and e-mail exchange. Bandwidth and participation levels were compared to and contrasted with the final grades. This paper sought to support the contention that increased Internet speed encourages higher levels of participation, information-access and exchange, thereby, increasing overall student achievement as measured by a traditional grading system. Although the examined data comprised of the students who were seeking distance education, the growing use of the Internet by the on-campus students made this study relevant to general education.41

Scott Adam Webber (2003) studied about “Ideology and Pedagogy: The Uses of and Justifications for Computers and the Internet in Elementary Schools.” The school-based use of computers and the Internet was justified mainly either as providing increased students’ effectiveness in the future or as required for students’ future success and even survival in a technology-heavy society. Students were being trained, as early as elementary school, to prepare for high-tech careers, to posses specific technology-related skills, and with the belief that these skills guarantee them a successful future. It was a critique not only of the current use of computers and the Internet and the justifications on which this use is based, but overall could be seen adding to the voices critical of a notion that use of technology was reflective of progress. The major contention was that of perceived importance of computers and other information and communication technologies (ICTs). The suggestions that they must necessarily appear in curriculum plans and budget proposals were being driven not solely or even primarily by pedagogy or by best practices in schools, but by the ideology surrounding the importance of technology in society, and also by the
perceived connection between technologies and notions of progress, and the belief that computer and Internet skills will be critical to the future success of the 10-year-olds at Harper and Lincoln elementary schools.\footnote{42}

Jennifer A. Andrade (2003) probed into "The effect of Internet Use on Children's Perceived Social Support." The researcher had attempted to examine the impact of the Internet on its users' social relationships, and had found a paradoxical effect of increased time on-line resulting in higher levels of depression and social isolation among adults. The major part of the research to date focused on adults and failed to examine how Internet use may influence children. To explore its impact on children, they were enrolled in catholic education classes (grade six to eight) in two Roman Catholic churches in Connecticut. They were asked to complete the survey used in this study. Results indicated that increased time spent on-line did not have any impact on social support or mood. However, results suggested that parents were playing a major role in monitoring how their children used the Internet and had an increasing awareness of the activities in which their children engaged while on-line.\footnote{43}

Deborah Jean Clark (2003) examined "The Physical, Behavioural, Economic, and Psychosocial Consequences of Adoption of Internet Technology among Older Adults." Participants reported an average of 7 hours of Internet use, six to seven hours of other computer use per week and spent an average of seven to eight hours engaged in different Internet activities. The Internet Consequences Scale (ICONS), a researcher-developed questionnaire, was used to measure the physical, behavioural, economic and psychosocial consequences of Internet use. Participants reported frequent physical pain, and more women than men experienced symptoms like body ache, eye irritation, etc. during or after computer use. The more hours spent on-line, the higher the economic and behavioural consequences were, although these consequences remained below the neutral scale scores. The psychosocial consequences of Internet use included improved self-confidence, self-esteem, sense of accomplishment, ability to learn new skills, feelings of being connected to the outside world, and perceived quality of life. Internet use can be an important resource for older adults in locating useful healthcare information, maintaining connections with friends and family members, and possibly ameliorating loneliness.\footnote{44}

Nai Li (2002) did a survey on "Culture and Gender Aspects of Students' Information Searching Behaviour Using the Internet: A Two-Culture Study of China
and the United Kingdom.” The ability to use information and communication skills, especially Internet skills, has become a necessary form of literacy in higher education in the twenty-first century. The study found that there were differences in Internet experience, attitudes, usage and competence between Chinese and British students, which were associated with their national cultural origin. Gender differences were found in both national groups and national culture also had an impact on the gender patterns in terms of use of the Internet. To enhance cultural sensitivity and gender equality in the use of computers and the Internet, the researcher made recommendations for practice in teaching and learning policy at the university level, both internationally and nationally. The study identified a lack of formal Internet training and the effect this had on students’ information searching.45

Hamood K. Al-Harti (2002) assessed “Student-Faculty Power/Knowledge Relations: The Implications of the Internet in Mathematics Education and Social Studies Education Programmes at Sultan Qaboos University (Oman).” This study examined the experiences of professors and undergraduate students in using the Internet searching for subject related to their courses. The findings indicated that the existence of the Internet and even its use by professors and students had not changed the existing structure of student-faculty power knowledge relations. This was the case because the Internet was perceived as just another, less-valued source of knowledge. Students showed different type of resistance to this control, including consulting the Internet sources when they did not understand or were not convinced by what the professor or the textbooks said. It also showed differences in students’ perceptions and actions in relation to power/knowledge and the use of the Internet depending on their academic subjects and gender. The study concluded that the Internet would change existing student-faculty power/knowledge relations in Sultan Qaboos University and other similar institutions. However, it is not enough to encourage professors to use different teaching methods or students to consult the Internet for their own research papers.46

Charles W. Munster (2002) studied “The Application of Internet Technology to the Admissions Process for the Non-traditional Undergraduate Student: A Delphi Study.” The purpose of this study was to examine the application of Internet technology to the admission process for the non-traditional undergraduate student and present scenarios for enrollment management personnel. The results saw a general
acceptance of Internet technology usage as an enhancement for admission process. In
term of current practices being replaced, however, the results were mixed. In the
category of Lead Generation/Recruitment, respondents did not agree that any current
practices would be replaced through Internet technology. In the category of the
Student Application Process, it was determined that faxing application materials both
by the school and the student would be eliminated through Internet technology. In the
category of the Student Admissions Advisement and Credential Assessment Process,
it was determined that advisement via snail-mail and the delivery of hard copy plan of
study documents would be eliminated. Respondents disagreed that Internet
technology would replace student advisement in person. In the category of the Student
Enrollment Process, it was determined that registration via telephone and snail-mail
would be eliminated through the technology of the Internet.47

(2) Article

Grete Pasch and Quinn Stewart (2002) did an observation on “Using the
Internet to Teach the Internet: An Opportunistic Approach.” Presented a conversation
between Grete Pasch and Quinn Stewart, co-developers of the Web-based version of
“information in Cyberspace” at the University of Texas Graduate School of Library
and Information Science. The developers recounted their experience from the initial
idea to experimentation with technologies and selection of tools, to course
development, converting the class to a web-based format, to use streaming media for
content delivery, e-mail and discussion boards for student-faculty interaction. It
emphasizes using a team approach, testing the materials, getting student feedback and
counting on effective technical support as critical success factors. The creation of
Web-based courses as an opportunity for instructors to research and experience
various technologies for content presentation, to stay in touch with student needs, and
to look toward the future of digital materials.48

Clyde and Klobas (2001) did a research on “The First Internet Course:
Implications of Increased Prior Participant Experience.” They Examined changes in
experience and confidence among students taking their first Internet course at a
university between 1994 and 2000 in a country with high Internet use. Times series
showed that the number of participants who had used the Internet before commencing
university has increased so it was now rare to encounter a student with no prior
experience. While almost all new students were experienced and confident users of e-
mail and the WWW, not all had used search engines. Very few had built a Web page. The first Internet course at universities should develop students’ understanding of the Internet, as it was used in everyday life by developing knowledge of the Internet’s history and development, advanced skills in Internet use, and the knowledge required to evaluate the potential of new Internet technologies and applications.49

Cumming and Cuthbertson (2001) did a survey on “Wired in Whitehall: A Survey of Internet and Intranet use in Government.” A questionnaire survey giving details of Internet and Intranet was circulated in 23 government departments for their response. The survey had found a considerable increased in access to the WWW than the previous survey but erratic implementations widespread existence, with erratic implementation of the use of web policies. Training in Internet searching was becoming a significant activity for many libraries. There was little improvement by library staff in departmental websites; with considerable use being made of external consultants when designing, setting up and restructuring sites. E-mail was proving to be a standard tool in governmental departments. Intranets were becoming more prevalent and there was board recognition of the relevance of information management skills to the development and management of Intranets. There were unrealistic expectations of Intranets and a widespread belief that Intranets were not used to their full potential. However, there was a universal agreement that the Intranets were very positive additions to organizations.50

Burnett and Seuring (2001) did an “Organizing Access to Free Internet Resources: An Overview of Selection and Management Issues in Large Academic and National Libraries with a View to Defining a Policy at Oxford University.” In this research, it was found that Internet resources were increasing in number and importance. This paper reported on the practices and policies adopted for organizing access to free Internet resources in a number of large university libraries and national libraries. References were given to some general printed literature on the topic as well as to websites exemplifying particular approaches. This paper intended to give an impression of how libraries were integrating to free Internet resources into their descriptions of information which their users could access, which resources should be included, and how they should be treated. It concentrated on the integration of free Internet resources, although the electronic resources were divided into ‘free’ and ‘paid for’, they were not usually made at the institutions were studied.51
Heimrath and Goulding (2001) did an analysis on “Internet Perception and Use: A Gender Perspective.” This paper reported, findings of a study undertaken in late 1999 which aimed to identify and analyse the differences between gender in the use of the Internet. A review of the literature of the differences in use, by gender, of computers generally was provided. The study involved students at Laughborough and Slongh. The results of this (fairly limited) study showed that female use, interest and confidence in using the Internet was high but, in comparison with male respondents the females had not taken to the Internet as rapidly.52

Richard Biddiscombe (2001) identified “The Development of Information Professional’s Needs for Internet and IT Skills: Experiences at the University of Birmingham.” This paper sought to illustrate Internet and IT skills that were required by information professionals in their support for learning, teaching and research within the changing context of the higher education sector in the UK and the development of managed (or virtual) learning environments. In this work environment, as in most others, IT skills, particularly in relation to the Internet were essential. However, some of the more traditional skills that had always been a part of the armory of the information professional should not be abandoned. Current developments at the University of Birmingham would provide the background throughout the paper.53

Nagar, Lakshmi and Gupta (2000) did a case study on “Surfing for Indian Information on the Internet.” In order to popularize the Indian web, the focus should be on content migration. It aimed at the migration of all the information from the print to electronic media to port into the Internet and which is brought out from corner to the centre stage. The Collectorate of Pune had taken the lead in this respect and was in the process of making the web a single window for all the information under its departments. The Government of Hyderabad was also exploiting the potential of the Internet for the welfare of the common man. Another good example of content migration was “Rediff” on the Internet. It had migrated GMAT and GRE test content on the web, thereby creating an entire community of users. Users could take test on the site, enroll for courses, get feedback on their performances, buy books, and sit for counseling session with experts. Internet connection should be provided to schools/colleges at large for its maximum utilization.54
Jha, Mishra and Sinha (1999) studied “Internet: Emerging Technology for Information Generation and Its Services to Users.” It is proved that Internet emerged as a powerful tool for modern libraries and information centres in providing information services. This study discussed information generation from the Internet and access to a wide range of services from e-mail to electronic publishing available to a user. The basic requirements for availing these services, along with the approximate costs for the introduction and maintenance of the facilities, were explained. The extension of the traditional role of the information specialist in providing up-to-the-minute information was elaborated, be it for research or technical purposes, for corporate use, or for the general reader.55

Madell and Muncer (2003) did a survey on “Gender Differences in the Use of the Internet by English Secondary School Children” Access to the Internet is an important issue in terms of equity and the UK government has stated ‘Our goal is to ensure that everyone who wants it has access to the Internet by 2005.’ (UK On-line Annual Report, 2002). This survey of Internet use by 1340 secondary school students from four schools in the Teesside area of England was carried out in order to assess whether the government is realising its ambition of Internet access amongst 11–16 year-olds, and also to determine whether or not gender differences exist in Internet use. Furthermore, the data supplied are intended to inform later studies of more specific aspects of children’s Internet use. Generally, it was found that most children who used the Internet, were quite comfortable with it, and used it for a variety of applications. However, a considerable minority of respondents also considered themselves non-users of the Internet. There were also some gender differences found in the data which in general suggested something of a male bias towards Internet use. It was concluded that these are issues that need to be addressed for the purposes of equity, and if the government is to achieve its goal of Internet access for all by 2005. A number of suggestions for further research on Internet use by children are also suggested in this paper.56

Wiesenmayer and Koul (1998) studied “Integrating Internet Resources into the Science Classroom: Teachers’ Perspectives” This paper presents teachers’ perspectives on the impact of Internet usage on their teaching practices. Semi-structured interviews with ten teachers and two identical on-line surveys were used to collect data from teacher-participants in the West Virginia K-12 RuralNet Project.
Questions were directed toward teachers' understandings of Internet resources, the development of collaborative relationships and the use of investigative projects in classrooms. Teachers' enthusiasm for the benefits of the information highway is mingled with frustrations with the nature of the Internet medium and constraints within the school.57

(3) Research

According to K.O. Jagboro (2003) research on “Internet Usage in Nigerian Universities: A Case Study of Obafemi Awolowo University, Ile-Ife, Nigeria”, the Internet was arguably one of the most significant technological developments of the late 20th century. However, despite the added benefits of this tool to learning, teaching and research, a number of problems still plagued Internet connectivity and usage in the Nigerian University system. The objective of this study was to evaluate the level of utilization of the Internet for academic research. A questionnaire was administered to postgraduate students ranging from arts to science based programmes. The results showed that the use of the Internet ranked fourth (17.26 per cent) among the sources of research materials. However, respondents who used the Internet preferred research materials (53.42 per cent) to e-mail (69.86 per cent). The study concluded that the use of the Internet for academic research would significantly improve through the provision of more access at Departmental and Faculty levels.58

Helmi Noman (2002) studied “The Demographics and Usage Patterns of Internet Users in Developing Countries: Yemeni Internet Population as a Case Study.” The study indicated that the Internet population in Yemen was dominated by young male users who used the Internet primarily for electronic communication and were attracted by the entertainment available on the Internet. On-line activities such as academic and scientific research, on-line shopping and e-commerce, and Internet governmental transactions were either under-utilized or virtually non-existent because of the lack of institutional support and poor telecommunication infrastructure. As in many developing societies, the current Internet penetration rate would continue to be very low because the cost and associated cost of Internet access compete with the cost of basic necessities. The estimated total number of Internet users in Yemen was 46,400. That is only 0.26 per cent of the total population. Any significant growth would be largely limited to the 24.7 per cent urban population.59
Oftel Company (2001) surveyed “Consumers’ Use of Internet.” It was found that home Internet access continued to grow. 40 per cent of U.K. homes claimed at that time to be connected to the internet. Most subgroups had seen a rise in home Internet access, however penetration remained highest amongst younger and middle aged groups, higher income and large households. The vast majority of customers were still using the traditional Personal Computers (PCs) and ordinary phoneline/dial up method to access the Internet. 35 per cent of home Internet users claimed to use fully or partially unmetered packages. Average weekly household time spent on-line had risen to just over 7 hours. Satisfaction levels remained high with 90 per cent of customers satisfied with the overall service provided by their home ISP. This was broadly in line with both the fixed and mobile markets.

Hasim and Yusooff (2000) did an intensive study on “Patterns of Internet Usage among Teenagers in Malaysia: A Study In and Around Multimedia Super Corridor.” Results showed a high percentage of respondents spent a long time watching television. It was an important source for information, entertainment and education for teenagers. Most teenagers choose entertainment as their main purpose of using computer and Internet. They saw computer and Internet as a source of entertainment rather than as a source of information or knowledge. Respondents’ level of knowledge of computer and Internet was quite high. Internet Relation Chat (IRC) was very popular among the teenagers.

Internet was still at an infancy stage in Malaysia. Teenagers did not depend on their parents or teachers to learn about Internet and computer. Instead, they went to their friends and to a lesser extent to their siblings. They would like to be alone while using the Internet. By and large, they accessed the Internet from homes and cyber cafes. There was no difference between male and female pertaining to where they had accessed the Internet. They still felt close to their families despite Internet and they preferred to get in touch with their friends through the telephones than through the Internet. Many of them felt they were not addicted to Internet. They felt it was much easier to get information through the Internet but also felt that some information on it was not accurate. They felt that parents should monitor the usage of Internet and there should be a code of ethics for Internet usage. The higher income group could afford to buy computer and to install Internet at home while the lower income found it difficult in doing so.
Madison On-line Company (2000) studied about "The Commercenet /Nielsen Internet Demographics Survey." The study found that the lack of information about Internet user demographics was a major obstacle prohibiting the Internet from moving from trial activities to mainstream business applications. This research was a milestone in the measurement of the Internet and WWW usage. For the first time, users of the Internet, the WWW, and the on-line services had been scientifically surveyed about their interactive usage, interests, and on-line interactive. The results seemed to indicate that while a number of Internet obstacles needed to be eliminated, various questions required answers. Some of the key conclusions from the study were a sizable base of Internet Users in the US and Canada (24 million Internet users and 18 million WWW users). WWW users were a key target for business applications. The Internet was heavily skew towards men in terms of both usage and users. Access through work was an important factor for both the Internet and on-line services. Total Internet usage exceeded on-line services and was approximately equivalent to playback of rented videotapes. The use of the Internet differed from that of commercial on-line services. Internet based surveys did not represent the population as a whole.

Lorraine Sherry (1999) did an investigation on "Internet and WWW Usage in an Institution of Higher Education." This paper reported the results of a five-year case study of the use of on-line tools: Internet, e-mail, and the WWW, at the University of Colorado at Denver's Graduate School of Education. Ten research questions were investigated using multiple surveys; interviews of faculty, staff, and students; a focus group; and an analysis of electronic artifacts. Principal findings included the following: self-efficacy perceived value persisted across time and across programmes as success facilitators. Personal/cultural compatibility, rather than time, separated earlier from later adopters. "Finding a voice and having something to say", a factor identified under various names by other researchers, posed a barrier for students and faculty alike. Users valued personal scaffolding but had individual preferences concerning specific types of scaffolding.

Fujitsu Research Institute (1998) surveyed "Internet User Survey: Trend is Toward ‘Passive’ Usage, Pursuit of Personal Interests." FRI compiled the results of its survey of Japan’s Internet users. The study was conducted for the purpose of understanding both consumer trends and business potential in the Internet.
marketplace. The results showed that the women and housewife segments had been growing amid an Internet user market that was overwhelmingly dominated by men initially. The general trend was towards the use of the Internet as a medium of entertainment and enjoyment of personal interests. Web sites of interest were located primarily via search engines and e-mail newsletter services. A total of 40.2 per cent of all respondents had on-line shopping experience. A breakdown by sex showed that 42.1 per cent of men and 33.7 per cent of women had done shopping on the Internet. Students were most likely to have personal home pages. Japan’s Internet users could be segmented into four basic types. They were as follows: Information Elite (13.8 per cent), Model Japanese Businessman (17.7 per cent), Internet Enthusiasts (26.0 per cent) and Future Mass Market (46.6 per cent).^4*

Yeung Yau Yuen and others (1998) in “Using the Internet for Education: Training for Student – Teachers”, they envisaged a model of putting the concept of using the Internet for education into real practice in school in which the student-teachers played the key role for the successful implementation. Those student-teachers were trained to have certain competence in developing course materials in the WWW format for broadcasting on the Internet. Some preliminary findings of the questionnaire on their attitudes towards using the Internet for education indicated that they generally had positive attitudes but they probably needed more time by self-practicing in order to develop sufficient confidence in authoring their own course materials on the Internet. The situation was critical at Hong Kong Institute of Education (HKIEd) as there was still no strategic planning to integrate the Internet with any existing teacher education programme. It remained largely the responsibility of individual teacher educators in helping the students and teachers to develop basic competence and favorable attitudes in using the Internet for education.65

Jonathan Grove and David Jennings (1998) evaluated the “Skills in Information Communications Technology & the Internet: A Training Needs Survey for the Living IT Programme.” The study found that the great majority (87.1 per cent) of respondents were employed, with the remainder being self-employed, students, unemployed or retired. Education/learning and leisure were the most significant uses of the Internet by respondents. The vast majority of users were familiar with e-mail and the web. The consensus was that all aspects of the respondents’ Internet usage was likely to increase. Information retrieval, rather than more advanced area, clearly
stood out as being of most interest to the respondents. However, the level of interest in group-working on-line and web page authorizing was still significant. The areas that were expected to grow in the use map directly over the three main Living IT programme, i.e.: Information Retrieval, Group Working On-line and Web Page Authoring. The research reported here gave the Living IT consortium a strong basis for developing further courseware, timed to the demands of learners in the region.  

Kevin Starr (1997) enumerated “Internet Access Questionnaire Analysis.” The issues related to Internet Usage by children and youth, boiled down to the issues of censorship or protection issues that were deeply rooted in people’s professional ethics, beliefs concerning intellectual freedom, religious beliefs, attitudes toward children and ideas about the rights of other people in a democratic society. Access to the Internet by them, provided a wide range of up-to-date information that was not available in any other format in a public library. The percentage of access issue-related incidents were low, when one looked at the overall number of Internet users. The data supported a number of overall conclusions: the Internet was a valuable reference tool that provides up-to-date information. The number of negative incidents related to Internet Access by them was relatively small compared with the number of jurisdictions that offered public access to the Internet. It was very important to have an Internet Access Policy in place. Training for both staff and the public was essential. The fact that only one terminal was placed in a Young Adult area was indicative of the lack of available space designed for Young Adults in most public libraries. Location of terminals was often decided by physical layout of the building and availability of electrical outlets. Most libraries did not take a proactive approach in promoting Internet Access.
REFERENCES


