Survey Research on e-Learning

in Asian Countries - Fiscal Year 2002

(Country Specific Report - Thailand)

- Table of Contents -

1. Market: Market Trends of e-Learning

1.1 Status of IT Promotion (Centered on the Internet)

1.1.1 Outline of the Internet

In Thailand, the Internet was first introduced by Asia Institute of Technology (AIT) in April 1988 and was first used in academic fields.

According to the statistics of ITU in 2001, the number of Internet users in Thailand in 2001 was about 3,536,000, which means that the Internet diffusion rate in this year was about 5.77%. Comparing this figure with the results of an investigation by ITU in 1999, in which the number of Internet users was about 1.3 million, reveals that the number of Internet users in this country has been growing steadily.

There are an increasing number of Internet cafes in areas in and out of Bangkok, but most of which are used by foreigners and tourists.

Broadband connection is not widely used in Thailand because of cost and technical problems. Thus, although some companies already provide broadband connection using DSL and CATV, dial-up connection is mainly used.

1.1.2 Outline of ISP

In Thailand, there are 22 main ISPs, consisting of 18 commercial providers and 4 non-commercial providers. ISPs in this country are under the jurisdiction of the Communication Authority of Thailand (CAT).

Table 1-1 Main ISPs

ISPs	URL
Commercial	
A-Net Co., Ltd.	http://www.a-net.net.th/default_en.asp
Asia Infonet Co., Ltd.	http://www.asianet.co.th/
C.S. Communications Co., Ltd.	http://www.cscoms.com/
Chomanan Worldnet Co., Ltd.	http://www.cwn.net.th/
Data Line Thai Co., Ltd.	http://www.linethai.net.th/
E-Z Net Co., Ltd.	http://www.eznet.co.th/
Far East Internet Co., Ltd.	http://member.fareast.net.th/fe4/index-flash.shtml
Idea Net Co., Ltd.	http://www.idn.co.th/
IEC Internet Co., Ltd.	http://www.asiaaccess.net.th/
Internet Thailand Public Co., Ltd.	http://www.inet.co.th/
Jasmine Internet Co., Ltd. (J-I Net)	http://www.ji-net.com/
KSC Commercial Internet Co., Ltd. (KSC Comnet)	http://www.ksc.net.th/
Loxley Information Services Co., Ltd. (Loxinfo)	http://www.loxinfo.co.th/
Reach Global Services Ltd.	http://www.reach.com/
Roynet Public Co., Ltd.	http://www.roynet.co.th/en/index.html
Samart Infonet Co., Ltd.	http://www.samarts.com/index_eng.php
Siam Global Access Co., Ltd.	http://www.sga.net.th/main.htm
World Net & Services Co., Ltd.	http://www.pacific.net.th/
Non-commercial	
PubNet	http://www.nectec.or.th/pubnet/
SchoolNet Thailand	http://www.school.net.th/
ThaiSARN	http://www.thaisarn.net.th/
UniNet	http://www.uni.net.th/en/

Source: CAT Website and NECTEC Website

1.2 Status of Education and Training System

1.2.1 Higher Education

In Thailand, higher education is provided in universities and colleges to those having completed twelve years of primary and secondary education (except open universities). An associate bachelor course requires a term of study of three years, a bachelor course requires a term of study of four years, and special academic degrees (e.g., medical, dental, and pharmaceutical degrees) require a term of study of five to six years. Those who complete these courses are provided with academic degrees. Graduate schools in Thailand normally require a two-year term of study for a master's degree and an additional two to three years for a doctor course after graduation from a master's course. Other higher education institutions include teacher training schools for two to four years, occupational training schools for two to four years, military and police schools for five years, and music and acting schools for two years.

As of 2002, there were a total of 74 universities, consisting of 22 national universities, two national universities open to the public, and 50 private universities and in which more than one million students, including those in graduate schools, are now studying. There are other schools, such as 36 national regional universities that have been upgraded from teacher training schools to universities (Rajabhat institute), 37 national industrial technical colleges (Rajamangara Institute), and 413 vocational education colleges.

The number of universities has been increasing due to the increase in the number of private universities and regional universities. The number of students continuing on to universities has also increased (increased 26.5%, which means 1,120,000, in 2002), showing a higher advancement rate than that shown by other Southeast Asian countries.

Now Thailand is pursuing educational reform to achieve the following objectives.

- To improve the quality of teachers;
- To provide more opportunities to receive higher education by achieving the objective of a 40 % university advancement rate in 2020 and by encouraging the building of new campuses and establishment of community colleges;
- To improve the way of managing universities by increasing the income from industrial fields and by privatizing the university management system;
- To strengthen collaboration among stake holders (e.g., a regional society, other universities, and industrial fields); and
- To pursue internationalization and provide universities open to international society by improving the level of the universities to the international average level.

1.2.2 Vocational Education

Vocational training in Thailand are classified into a late intermediate vocational education (certificate course, hereinafter referred to as "vocational training high school") equivalent to a late secondary education in which 15-year-old students start studying for three years; and an advanced level technical vocational education (diploma course, hereinafter referred to as "vocational training junior college") equivalent to a higher education level.

The vocational training junior college includes various courses such as a two-year advanced level vocational education certificate course for those who have graduated from vocational training high schools; and a two-year engineering qualification course equivalent to an associate bachelor for those who have completed the secondary education of a general course. Those who have acquired these qualifications have a further opportunity of a two-year qualification course equivalent to a bachelor course. These courses are under the jurisdiction of the Department of Vocational Education (DOVE) of the Ministry of Education (MOE).

These courses mainly provide seven major fields of commercial, art/craftwork, home making, management, tourism, agriculture, and fishery. Popular fields among them are included in vocational training high schools and junior college. Commercial fields are popular among boys and management fields are popular among girls. The advancement rate from primary secondary education to advanced secondary education has declined due to economic reasons caused by the influence of the Asian currency crisis. With this background, the current educational reform shows a movement in which the policy of providing 12 years of general education free of charge is also to be applied to occupational training high schools.

1.3 IT Human Resources Required

Although the government is implementing IT promotion policies, there is an urgent need of securing human resources for IT fields.

Outstanding Thais who study in Europe and the U.S. often do not come back to Thailand. A particularly difficult problem for Thailand is the shortage of engineers due to the shortage of graduates from science and technological schools. The number of annual graduates from engineering departments is only about 10,000, a very small part of the population of about 63 million. This number of engineering graduates is also small as compared with that of main Southeast Asia countries and also causes a tendency where the number of students proceeding to master and doctor courses is severely limited. Another problem found is that about 20% of engineers in Thailand do not satisfy the needs of companies due to insufficient skills.

The Ministry of Economy, Trade and Industry of Japan supports the policies for fostering IT human resources in Thailand by supporting the preparation of an examination system.

1.4 E-Learning Market Trends

1.4.1 Outline of e-Learning Industry

e-Learning has attracted attention from government and education-related parties and some e-learning related projects have already been put into action. Conventional e-learning related projects that have been partially introduced mainly include synchronous ones using a videoconference system, and asynchronous learning was used only partially.

Recently, the improved communication infrastructure has allowed major universities to provide limited web-based lectures. As in the Engineering Department of Chulalongkorn University (CU), some universities provide supplemental lectures by Video-On-Demand (VOD). AIT distributes VOD lectures to Vietnam.

According to Chiang Mai University (CMU), a high-speed optical fiber network for connecting 51 higher education organizations has been provided together with Internet connection and a videoconference system. The Ministry of University Affairs (MUA) had a budget for 30 online coursewares in the past two years. These coursewares have been developed by many higher education organizations in and out of Thailand and 13 courses have been completed.

In addition to such programs using the Internet, there are also remote education programs using a broadcast satellite called "Thailand Training Network" established by the cooperation of various organizations. Although not able to provide academic degrees, Thailand Training Network provides education to employees and engineers of general companies through the cooperation of the National Electronics and Computer Technology Center (NECTEC).

Up to now, there have been two big e-learning conferences held with more than 250 participants. There are also universities with new budgets for developing e-learning courseware. They provide education to a large number of students using conventional

information communication technology (e.g., radio, TV broadcast), and aiming for providing an improved service and increasing the number of students by using e-learning.

In Thailand, there are universities open to the public established through the influence of the open universities in Britain in which correspondence education using the postal service and schooling have been provided. These universities are positive about promoting the e-learning courses. Sukhothai Thammathirat Open University (STOU) is working on a project to increase the number of web-based trainings (WBT). Another university open to the public, Ramkhamhaeng University, has a plan to provide all course materials prepared in the university online.

1.4.2 Market Size of e-Learning

Information unavailable.

2. Technology: Trends of e-Learning System (Synchronous & Asynchronous)

2.1 Chulalongkorn University (CU)

URL: http://www.chula.ac.th/

2.1.1 Overview

CU is the oldest university in Thailand that was established in 1917 by King Vajiravudh (Rama VI). In the first 20 years in 20 century, this university was the only higher education institution in Thailand. CU has a campus at the center of Bangkok where modern shopping centers and business centers are built. Now CU has 17 departments, 16 special research organizations, and more than 270 courses and subjects in the college subject taught by more than 2,500 teachers. CU provides all students with e-mail addresses.

2.1.2 Activities Related to e-Learning

(1) Synchronous technology and its usage

CU actively uses a videoconference system within its campus.

As an e-learning experiment, the Pharmaceutical Dept. had provided a remote lecture to a local hospital 200 km from Bangkok.

CU also has projects as described below.

(a) Remote education project with World Bank "CU-WB Knowledge Management Project"

http://wb-cu.car.chula.ac.th/

As a part of "Global Development Learning Network (GDLN)" project of World Bank, CU campus formed Distance Learning Center (DLC) in 2000. This is a videoconference system using a satellite connection. GDLN provides more than 75 courses to more than 2,500 students.

However, the result of an investigative hearing has not always showed a high evaluation of this program of the university. Reasons for the negative evaluation include "the courses are provided in English" and "the contents of the courses do not sufficiently incorporate the demands from Thai parties".

Table 2-1 Main Courses and the Number of Lectures

Theme	Number of Lectures
Reconsider the miracle in East Asia	35
Remote study seminar series for HIV/AIDS	103
Discussion on globalization and Asia	73
Corporate governance and strategy in East Asia	109
Debt rating in Asia	57
E-finance in emerging market	71
Seminar on lessons from financial currency crisis in East Asia	69

Source: Pairash Thajchayapong (2003.1), Briefing paper for "International Seminar on e-Learning 2003"

(b) Remote lectures with Osaka University and Mahidol University

This remote teaching has a purpose of providing an opportunity to many highly motivated students and researchers in Asian countries to directly receive education from Osaka University and establishing an active system through which Asian countries can conduct research in a cooperative manner.

Since April 2002, Osaka University, Mahidol University, and CU electronically exchange lectures with one another and about 150 students of the three universities take the lectures electronically. The three universities also plan to incorporate a "Cyber Debate" system in which students can have real time oral discussions on the Internet so that an effective education can be provided through the exchange of opinions from the students. The "Cyber Debate" system has been promoted by Osaka University (Biotechnology Course in Graduate School of Engineering and International Center for Biotechnology) as a part of a plan to establish a "Cyber School" for the biotechnology field using the Internet. The "Cyber Debate" system uses a synchronous-type e-learning system called "InterWise Millennium" in which real time interactive communication is used to provide on-line teaching.

(2) Asynchronous technology and its usage

(a) "CU Flexible Learning"

http://flex-learning.eng.chula.ac.th

CU Flexible Learning has been promoted by Engineering Department of CU. In addition to WBT, CU Flexible Learning provides education in a flexible way by combining various techniques (e.g., TV conference system, collective education, e-mail, fax).

The courses include "CDA/CAM", "production design and manufacture", and "digital management".

(b) "ChulaOnline"

http://www.chulaonline.com/

The "ChulaOnline" project was established with an objective of making a social contribution and running a profit-making business and is administered by the university's Continuing Education Center. The staff for this project includes 30 academics from a committee and other full-time system development staff.

This project provides lectures to CU students free of charge and charges some fees to external students.

"ChulaOnline" uses a system with a combination of WBT using a website, stream distribution, e-mail, synchronous lectures using a P2P TV conference system, and regional center or the like.

(c) "CU-KEIO University WBT Project"

In 2001, "CU-KEIO University WBT Project", in which CU and KEIO University had a cooperative WBT teaching as an experiment, was started with the support of the Ministry of Economy, Trade and Industry. Lectures provided included IT literacy and basic programming and the system was provided with the support of the HITACHI Group.

2.2 Thammasat University (TU)

URL: http://www.tu.ac.th/

2.2.1 Overview

TU is the second oldest university in Thailand. TU is composed of seven departments and a graduate school. Since establishment in 1933, TU sends out about 3,000 graduates each year.

TU, originally famous for the arts and social science studies, formed engineering departments in 1990. In 1994, Sirindhorn International Institute of Technology (SIIT) was established with the financial support of the Japan Federation of Economic Organizations and the Confederation of Thailand Industry for the purpose of fostering engineers who can actively work in international organizations and international companies.

2.2.2 Activities Related to e-Learning

(1) Remote lectures with Osaka University

Since June 2002, Osaka University (Osaka School of International Public Policy and Cyber Media Center) has provided remote lectures to SIIT using international ISDN lines (128 kbps).

In the remote teaching, lectures are provided in such a manner that lectures are sent from Osaka University via a TV conference system to Thailand and SIIT students can ask questions while the lecture is provided. The lectures also use study management software called "WebCT". The lectures are transmitted through on-campus LAN in Osaka University and thus can be seen by other departments.

One course consists of 12 lectures, each of which is provided every Thursday for 90 minutes. Those who have received the course are given a credit by SIIT. This remote teaching is provided in a period of two years. About 30 students of the third and fourth grades can receive lectures by the instructors of Osaka School of International Public Policy, Cyber Media Center, Graduate School of Information Science and Technology and researchers of private companies.

The contents of lectures include technical IT research and the application to social economy for the purpose of introducing the current status of IT research in Japan, its application, or the like, to cooperate with TU for IT development in Thailand, particularly for the fostering of human resources for communication and broadcast fields.

This project is the second remote education project of "ICF-HIT Japan-Thailand Remote Education Project" and is financially supported by the cooperation of the International Communications Foundation (ICF), Hoso-Bunka Foundation, Inc. (HBF), and the Telecommunications Advancement Foundation (TAF). HIT has provided the main equipment and materials to SIIT.

(2) Remote lectures with Nagaoka University of Technology

Nagaoka University of Technology provided remote teaching to TU in March 2001 in order to promote active research by both universities while cooperating for seven years until March 2001 with a project by Japan International Cooperation Agency (JICA) called "Thammasat University Engineering Department Improvement Plan".

In March 2001, remote teaching for management information was provided after which a test using the Internet (Web-based Testing) was conducted. In the test, the Thailand-side allowed teachers to use a remote controlled camera to provide more interactive remote teaching.

A remote seminar between students in Thailand and those studying mechanics in a research room in Japan has been also performed in which Japanese students presented research results while having discussions with professors and students in Thailand.

2.3 Sukhothai Thammathirat Open University (STOU)

URL: http://www.stou.ac.th/

2.3.1 Overview

STOU is a university open to the public that has conventionally provided lectures via TV, radio, postal services and schooling. This was made possible by adopting the method used by Open University in Britain. Students of universities open to the public mainly include people with various backgrounds such as those who do not have a sufficient academic ability for common style of universities and those who are working and thus have no time for going to universities. The objective of such universities is based on a life-long education to improve regional society and the quality and ability of the life of individuals.

STOU has been improved since its foundation and now the campus has 10 departments, a graduate school, and 10 offices, while holding 75 Study Centers nationwide. STOU is striving to introduce new techniques and skills into Thailand through education projects like the National Printing Training Center in the campus.

STOU is located along Chang Wattana Road of Nonthaburi province at a point about 5 km away from Vibhavadi-Rangsit Road and Don Musang tollway. STOU is also located in the vicinity of Bangkok International Airport and Bangkok.

2.3.2 Activities Related to e-Learning

Since the late 1990s, STOU has gradually provided more course materials in CD-ROM packages. As a university-side activity, STOU is now working on an e-learning related plan called "STOU Plan 2000".

STOU Plan 2000 consists of several projects. Once of the main projects is "STOU Virtual University Project". This project allows for activities in a conventional correspondence university to use various IT techniques. STOU is mainly responsible for adult education and life-long education in Thailand and thus provides most lectures in Thai.

The main pilot courses include:

(1) A specialized English course for staff speaking and using English that are commissioned to NOLP (which is described later) for administration

(2) Graduate school level courses including "System Approach in Education", "Information System Management", and "Curriculum and Instruction".

2.4 King Mongkut's Institute of Technology, Ladkrabang (KMITL)

URL: http://www.kmitl.ac.th/

2.4.1 Overview

KMITL was established in 1971 as a Ladkrabang campus of King Mongkut University and became independent as a national university in 1981. KMITL is one of the biggest universities in Thailand for science and technologies. There are 59 department courses (subjects), 24 master courses (subjects), and two doctor courses of electronic technique and vocational education management and the number of students is more than 10,000.

KMITL is located in Ladkrabang District, 30 km away from Bangkok in the east, and the vicinity includes a site on which the Bangkok Second International Airport is planned.

In addition to the Ladkrabang campus, KMITL has a Champon campus and a Rayong campus.

KIMTL has a satellite facility through which a conference and individual seminar can be received from and transmitted to universities in and out of Thailand. KIMTL has an active interaction with Tokai University in Japan.

2.4.2 Activities Related to e-Learning

KIMTL is known for having one of the top engineering departments in the nation (Faculty of Engineering).

The Faculty of Engineering had a remote conference and a single remote teaching with Tokai University in Japan via a satellite-based facility. KIMTL and Tokai University exchange their teachers and students through an exchange program and have a very close relationship. The chancellor of Tokai University has received an honorary doctorate from Faculty of Engineering of KIMTL.

KIMTL also had satellite-based conferences with Tokyo Institute of Technology of Japan for two or three years.

In Thailand, more universities are transformed into independent administrative institutions and thus more universities are required to have a budget on a self-paying basis. For such more profit-sensitive universities, it is more difficult to have such a conventional teacher exchange with other universities for cost reasons. Thus, a remote teaching using a TV conference system or the like is now being actively examined.

In addition to the above campus, KMITL has a new Nonthaburi campus and is considering allowing the campuses to have remote teaching.

2.5 Chiang Mai University (CMU)

http://www.chiangmai.ac.th/

2.5.1 Overview

CMU was the first higher education organization in North Thailand and the first local university in Thailand, established in January 1964. Since its foundation, CMU has provided four activities of education, research, culture fostering, and regional service while particularly realizing the importance of the needs of the northern regions in Thailand. CMU also actively has an international cooperation through which affiliation with a number of foreign universities and research organizations can be obtained.

2.5.2 Activities Related to e-Learning

In addition to the CD-ROM course materials, CMU also provides on-line lectures.

There are six on-line courses. Among the interactive on-line courses, there are 40 low-cost courses that are developed using Knowledge Creator (KC). KC is a unique LMS developed by a group of experts at the Information Technology Service Center, CMU.

The e-learning activity by CMU can be browsed in a website called "CMU Online Learning". A unique basic English course by CMU can be freely accessed.

2.6 Asia Institute of Technology (AIT)

URL: http://www.ait.ac.th

2.6.1 Overview

AIT is a higher education organization and a graduate school university that was established in 1959 to satisfy the demand for a higher technical education. In November 1967, AIT took its current name and formed an international organization for providing academic degrees. AIT can provide master and doctor degrees in the four departments of engineering, management, social science, and management.

The AIT campus is located 42 km to the north of Bangkok. In the campus, there are more than 1,500 students from 42 countries. For the past 42 years, AIT has sent out more than 11,000 graduates having 66 nationalities. AIT has more than 200 teachers from 30 countries.

2.6.2 Activities Related to e-Learning

AIT has provided advanced e-learning related activities in Thailand by having various workshops for e-learning.

Now AIT has an AEN demonstration experiment project through the cooperation with National Science and Technology Development Agency (NSTDA) and Tokyo Institute of Technology.

2.7 Distance Learning Foundation (DLF)

URL: http://www.dlf.ac.th/dltv/
*This site is in Thai only.

2.7.1 Overview

Since the foundation in 1996, DLF has provided a satellite-based remote education by using 11 to 16 channels of UBC to send lectures to more than 3,000 junior high schools.

Since 2002, DLF has provided web-base information free of charge through the cooperation with Institute for Promotion of Teaching Science and Technology (IPST). Two types of information can be accessed through the Internet: live and on-demand.

2.8 Thailand Training Network (TTN)

URL: http://ttn.learn.in.th/

2.8.1 Overview

TTN was established in 1999 and has continuously provided training to professionals working in industrial fields.

From 2000 to 2002, TTN has provided:

- More than 520 hours of trainings in 71 courses;
- Training to more than 18,500 employees in more than 130 companies in Thailand.

Training by TTM is mainly received by insurance, automobile, agriculture, electricity fields or the like. The contents of the courses include management, production, quality insurance, marketing management, hygienic management, and information technique. One course provides 6 to 12 hours of lectures.

The required cost for receiving the course is 600 to 700 U.S. dollars and a company receiving a lecture must pay 60 U.S. dollars for one hour of lecture in each site.

2.9 LearnOnline

http://www.learn.in.th/

2.9.1 Overview

LearnOnline is an e-learning vendor established in 2000 by Thailand Graduate Institute of Science and Technology (TGIST) and NSTDA.

In Thailand, LearnOnline provides WBT courses to more than 2,100 customers. Students of LearnOnline mainly include graduate school students and working people. Once course costs 30 to 110 U.S. dollars.

Table 2-2 Example of Main WBT Courses

Title of course	Year(s)	Number of registered students
Bioinformatics	5	520
Cyber tool for research	4	546
Biological diversity in Thailand	2	198
Digital design by VHDL	1	40

Source: Pairash Thajchayapong (2003.1), Briefing paper for "International Seminar on e-Learning 2003"

2.10 NSTDA Online Learning Project (NOLP)

http://www.thai2learn.com/

2.10.1 Overview

NOLP is a so-called e-learning vendor established by NSTDA in March 2000 and provides e-learning solutions to education organizations and companies.

NOLP provides services such as:

- Contents development;
- Provision of LMS contents; and
- Provision of contents.

3. Advanced Activities

Information unavailable.

4. Government Policy and its Vision (Mid- and Long-term Direction)

4.1 Status of IT Policies

4.1.1 Overview

As in other ASEAN countries, Thailand puts an emphasis on the strategy on information technique and has various promotional policies.

In March 1992, the National Information Technology Committee (NITC), composed of IT-related government sectors and private sectors, was established. The prime minister of Thailand chairs NITC.

NITC's main role is to implement and adjust IT-related policies and plans including various fields (e.g., human resource fostering, development of information system in public sectors, arrangement of national information infrastructure, promotion of research and development, promotion for raising the citizens' consciousness toward IT). NITC's head office is run by NECTEC, one of the departments of NSTDA, and is provided in NECTEC. NECTEC is responsible for orchestrating IT policies in Thailand.

There was a reorganization of Cabinet-level ministries and agencies in October 2002. In place of the old Ministry of Transport and Communications, the newly established Ministry of Information Technology and Communications monitors the entirety of communication and plans to include IT-related departments of NECTEC within about one year.

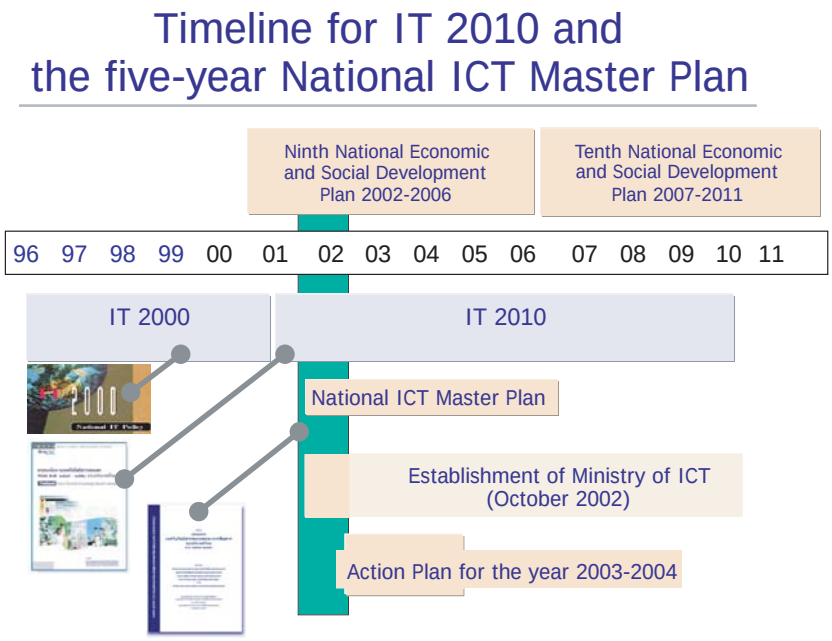
4.1.2 Policies and its Details

The first IT policy was disclosed by NITC in June 1995 as "IT 2000 (1996 - 2000)".

Table 4-1 Main Objectives and Projects

Objectives	Projects
- To establish nation-wide information infrastructure. - To foster human resources for supplying IT human resource. - To introduce IT to public sectors and enhance the development of human resources.	- ThaiSARN (academic research net) - SchoolNet Thailand (education net) - GiNet (government net) - Building Software Park - Others

Due to the recession caused by the Asian currency crisis in 1997, many IT-related projects were postponed or reduced. "IT 2000" has provided a framework for IT promotion. After the completion of "IT 2000" in the end of 2000, a new IT policy plan "IT 2010 (2001 to 2010)" was adopted in October 2001. As a specific five-year plan for realizing "IT 2010", "ICT Master Plan (2002 to 2006)" was adopted in September 2002. The details are as follows.



Source: NSTDA briefing paper (2002.12)

Figure 4-1 Time Schedule of IT 2010 and ICT Master Plan as a Five-year National Plan

(1) "IT 2010 (2001 to 2010)"

"IT 2010" was adopted in October 2001 by NITC and was approved by a cabinet meeting in March 2002.

The main purpose is to use IT for coping with a knowledge-based economy and society by achieving the following objectives of:

- Promoting Thailand from the current position in the third group to the top position in the second group in accordance with UNDP Technology Achievement Index;
- Fostering gold-collar workers (by increasing the proportion of gold-collar workers to 30% of the entire workforce);
- Fostering knowledge-based companies (by increasing the proportion of knowledge-based companies to 50% of companies).

In order to achieve the above objectives, the following targets are provided:

- e-Society (for eliminating digital divide and for improving level of living or the like)
- e-Government (e.g., electronic government, laws)
- e-Commerce (e.g., finance, tourism, IT service)
- e-Industry (e.g., IT-related industries, standard specification)
- e-Education (e.g., life-long education, computer literacy, human resource fostering)

(2) "ICT Master Plan (2002 to 2006)"

This is a specific five-year plan adopted in September 2002 for the purpose of realizing "IT2010". ICT Master Plan includes the following seven strategies and targets.

1) Thailand as an ICT leader

- To expand the software market to 90 billion bahts (among which 75% is for export);
- To increase the number of research developers to 60,000;
- To establish Software Industry Promotion Administration in 2003 for the purpose of promoting the investment in software;
- To expand the government-related IT market to 5 billion bahts size; and
- To promote the use of open sources and domestic software to increase the share to 50% of the entire market.

2) Improvement of level of living or the like by the use of ICT
   - To provide telephone lines to all agricultural villages in the nation by 2005.
   - To allow a broadband service to be used by all provinces;
   - To allow 70% or more of the poverty group to use information services;
   - To provide IT service centers to all communities; and
   - To provide an organization for monitoring the security while ICT is used.
3) Improvement of competitive strength
   - To allow 70% of employed population to access ICT and to allow 40% of employed population to access the Internet;
   - To allow more than 90% of all students to receive ICT-used education; and
   - To annually provide 150,000 gold-collar workers at the minimum.
4) Promotion of development of ICT research
   - To allow research and development by governmental and private sectors to occupy 3% or more of the ICT market;
   - To find a large-scale software development project;
   - To increase the share of domestic brand PCs to 80%; and
   - To allow 70% of domestic software development companies to use network services and web service techniques.
5) Application of domestic companies to international market
   - To increase the workforce in ICT field to 600,000; and
   - To annually expand the size of an e-commerce market by 20%.
6) Promotion of use of IT by medium and small-sized companies
   - To allow more than 100,000 SMEs to use ICT for back-office works;
   - To allow more than 40% of 100,000 SMEs to use ICT for the core businesses; and
   - To annually increase the number of SMEs performing a supply chain management by 10%.
7) Use of IT in government
   - To allow all governmental organizations to exchange data electronically;
   - To allow 90% of basic government services to be provided electronically;
   - To provide more than 100 government services to citizens by promoting the information exchange among ministries and agencies;
   - To allow the government to have an electronic procurement of 100 billion bahts or more; and
   - To provide a national ICT security plan.

4.2 E-Learning Related Measures as Part of IT or Educational Policies

4.2.1 Overview

As described above, education in IT policy is considered important to provide e-education (e.g., life-long education, computer literacy, human resource fostering).

There are "SchoolNet" for elementary and secondary educations and "UniNet" for higher education.

4.2.2 Policies and its Details

The following section will describe the outline of "Inter-University Network (UniNet)", a main IT-related policy for higher education.

(1) "Inter-University Network (UniNet)"

http://www.uni.net.th/en/

UniNet is a nonprofit higher education network project (for education equal to or higher than secondary education) that was started in 1997 by the initiative by MUA.

The objective of "UniNet" is to provide a networked education by the use of IT and has the following targets:

- To provide IT infrastructure in higher education organizations;
- To develop and promote a self-schooling center in which electronic library databases and the Internet can be used;
- To develop and promote a life-long study system by providing course materials, databases, and a remote study system; and
- To foster human resource such as teachers who can teach IT-related subjects.

"UniNet" provides education network services in and out of Thailand for the purpose of promoting research and development in all higher education organizations in Thailand. Other services include a remote study service by a videoconference system and the provision of study course materials. The Ministry of Education (MOE) rents communication lines for UniNet from private companies but there is a problem of only providing a slow communication speed. Now communication lines are provided to more than 200 higher education organizations, such as national and private universities.

"UniNet" has mainly worked on the arrangement of communication infrastructures among universities but has started to provide software related services as a further step.

4.2.3 E-Learning Related Organizations

AEN-related activities in the government are promoted by NECTEC, one of the government sections. In June 2002, an AEN-related international conference was held by NECTEC.

However, in February 2003, communication among the following e-learning related organizations, NECTEC, and Advanced Learning Infrastructure Consortium (ALIC) was started. The details of the organization are as follows.

(1) UniNet e-Learning & Multimedia Consortium

This is a part of UniNet in which a consortium for e-learning "E-Learning & Multimedia Consortium" was established in 2002. This consortium has a gathering semi-annually (next gathering is planned to be held at AIT in June 2003). The leader of this consortium is Dr. Panjai Tantatsanawong, Director of Computer Center Silpakorn University. Since this consortium is a part of UniNet, 133 member universities are considered as a member of this consortium.

Objective of this consortium include:

- To provide a consolidated management to the exchange of courses and credits among universities;
- To provide a virtual university (now policies for virtual university are being selected);
- To provide a remote education using a videoconference system.

In July 2002, a seminar for the standardization of e-learning and courseware was provided. The second seminar is planned for March 5, 2003.

UniNet was originally under the jurisdiction of MUA. However, the integration of MUA into MOE has allowed UniNet to now be financially supported by MOE. Specifically, MOE supports UniNet only for the cost of seminars or the like and the cost for preparing contents is borne by each university.

Until January 2003, this consortium had no relation with NSTDA, NECTEC, LearnOnline or the like and thus did not know what other organizations were doing.

This consortium includes a group for preparing LMS by open source (Linux) that is working with an object of completing LMS in July 2003. Now there are 700 courseware subjects, any of which is provided in accordance with different LMS depending on each university (i.e., there are 10 to 12 Thailand-made LMSs prepared not in accordance with the standardization such as SCORM). Thus, the biggest target is to share them. This consortium plans to prepare 50 contents in 2002 and 100 contents in 2003.

This consortium conventionally had a relation only with MOE. However, an IT Plan must be submitted to Ministry of Information and Communication Technology in order to provide e-learning lectures from now. Thus, this consortium will also have a relation with Ministry of Information and Communication Technology. Although e-learning is provided only within UniNet, it is planned to expand the coverage to "Ed-Net (MOE-Net, School Net)" (which is planned to be opened next year) including public lines.

In addition to this consortium, there is another e-learning consortium of a working group called "e-MAC" which is provided under the software industry group of Thailand called "The Association of Thai Software Industry (ATSI)". Members of e-MAC are 13 companies among ATSI members. According to Mr. Anukul Tamprasirt, Vice President of the ATSI who plays the role of an engine for the working group, e-MAC had no information for this consortium but both consortiums are to be consolidated after the gathering in February 2003 through the coordination by NECTEC.

From February 2003, these working groups have started communicating with ALIC for the future cooperation to AEN.

4.3 Laws Regulating Rights for Intellectual Property and Personal Information in e-Learning

Laws for intellectual property and individual information in Thailand include "copyright law (1994)" and "laws for courts for intellectual property and trade (1996)".

In April 2002, e-commerce laws were enforced. ICT-related laws will be further provided (e.g., national information infrastructure law, data protection law, computer crime protection law, electronic funds transfer law).

4.4 Vision

Information unavailable.

4.5 International and National Conference

The following conferences were held.

(1) "Asia e-Learning Initiative Forum (AEI Forum)"
- Period: June 2002

(2) "Comtech / Commart Thailand 2002, e-Leader Seminar"
- Period: October 2002