# Survey Research on e-Learning in Asian Countries – Fiscal Year 2002

## (Overview)

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(Survey Research on e-Learning in Asian Countries)

(Overview)


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# 1. Introduction

## 1.1 Purpose

The purpose of this survey research is to study the trends of e-Learning in the Asian region by focusing on activities in major Southeast Asian countries, thus contributing to establishing a cooperative relationship between Japan and other Asian countries. It is also meant to provide information for considering AEN's future activities.

## 1.2 Basic Concepts on Selecting Samples and Methods to Conduct Surveys

Table 1-1 Surveyed countries and survey methods

| Country | Survey methods & number of countries to be surveyed.<br>A-1) Interview: 3<br>A-2) Participation in conference: 2<br>B) Based on reference documents: 2<br>C) Based only on country reports: 5 | Survey contents | | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | Market | Technology | Advanced activities | Policy | International activity | Experiment | 2002 Experimental projects | |
| Brunei | C) | | | | | | | | |
| China | A-1) Interview | (b) | (b) | (a) | (a) | | | | |
| Cambodia | C) | | | | | | | | |
| Indonesia | C) | | | | | | | | |
| Republic of Korea | A-1) Interview | (a) | (a) | (a) | (a) | | | | Japan-ROK Consultation. Conference was held in November 2002. |
| Laos | C) | | | | | | | | |
| Malaysia | A-1) Interview | (b) | (b) | (a) | (a) | (a) | (a) | x | Conference was held in January 2003. National Steering Committee on e-Learning was established. |
| Myanmar | C) | | | | | | | | |
| Philippines | A-2) Participation in conference | (b) | (b) | (a) | (a) | (a) | (a) | x | ITECC-HRD e-Learning Subcommittee. Conference was held in August 2002. |
| Singapore | B) Based on reference documents | 2 | 2 | 2 | 3 | 2 | 2 | x | E-Learning Competency Centre (ECC) |
| Thailand | A-2) Participation in conference | (b) | (a) | (a) | (a) | (a) | (a) | x<br>x | AEI Forum was held in June 2002. |
| Vietnam | B) Based on reference documents | 1 | 1 | 2 | 1 | 2 | 2 | x | |

This survey covers a wide range of 12 different countries as targets, including Indochina countries whose information is often difficult to collect, China and the Republic of Korea, as well as major Southeast Asian countries.

These countries vary greatly in levels of economic development, IT policies, education policies, and cultures. Since "e-Learning" is itself a new concept in Asia, and is fully understood or actually utilized in only a limited number of countries, this survey was conducted as part of a basic survey over a wide geographical area to contribute to "the promotion of Asia e-Learning Network project".

Opportunities for interview surveys were limited, and some countries had to be researched mainly by consulting documents and using the Internet. Before starting the research, therefore, countries were classified by survey method (main information sources and approach to be taken) as follows:

In the "Survey method" column, each classified topic means the following:

- A-1) Interview: Target countries are visited to research trends of major organizations. (three countries in total)
- A-2) Participation in conference: Information is collected by attending e-Learning conferences held in the target countries. (two countries in total)
- B) Based on reference document: Information is collected from materials obtained at "AEN Conference 2002" (described later) or from e-Learning related organizations in the target countries. (two countries in total)
- C) Based only on Country Report: Only Country Reports consisting of a few pages are used, which are obtained at "AEN Conference 2002" and published by each country. (five countries in total)

Collecting and analyzing the Country Reports proved, however, that only a few of them contained sufficient information. So, thorough research was additionally conducted by consulting reference documents and using the Internet.

For each survey topic in the "Survey contents" column, estimated availability of information to be collected is classified as follows, before conducting surveys:

(a): Certain amount of information is expected to be collected.
(b): Sufficient amount of appropriate information may not be available.
[Empty]: Appropriate information may not be collected, or the amount of information is unknown.

The difference between B and C is: for C, only Country Reports were put together, while for B, a survey was conducted using reference documents based on the information obtained in Country Reports, in order to achieve a preliminary survey level to be ready for future in-person surveys.

In rows labeled B, each number in the Survey contents & topics columns means as follows:

1) Detailed survey is not necessary.
2) Surveys can be conducted without interviews.
3) Certain interview surveys have already been conducted.

Since e-Learning is a new IT field, organizations to gather and manage domestic information related to e-Learning have not yet been established in most of the surveyed countries, or have just started activities in a few countries. Consequently, in-person interviews and inquiries by e-mail were made to experts from governmental offices and universities. Additionally, information obtained over the Internet and reference documents were also consulted.

The "x" in "2002 Experimental Projects" column indicates that Asia e-Learning Network (AEN) Experimental Projects were conducted with that country in 2002.

## 1.3 Details and Processes of the Survey

Details and processes of this survey are as follows:

(1) Market: Market trends of e-Learning

Information on e-Learning related market trends is collected and analyzed, focusing on movements of the market and major players within the surveyed countries.

[Major topics]

- Status of IT promotion

  * Due to the fact that IT promotion itself being extensive, the status of the Internet which is closely related to e-Learning is addressed.

- Status of education and training system

  * Higher education and vocational education are addressed, which is the target of the Asia e-Learning Network (AEN) project.

- IT human resources required

  * Surveys of needs for IT human resources have not been conducted in all countries. For countries from which no survey results are available, the tendency of its needs are shown instead.

- Trends of e-Learning market (if the market has already been established)

  * Because few countries have developed e-Learning to a specific "industry" or "market", trends of major organizations and market forecasts (if any) were studied.

(2) Technology: Trends of e-Learning system (synchronous & asynchronous)

Main actual examples of e-Learning implementations are discussed, to analyze synchronous and asynchronous type technologies, and also to analyze trends of products that are utilized within those examples.

[Major topics]

- Synchronous type technology and its usage
- Asynchronous type technology and its usage

* Initially, classification was attempted by synchronous and asynchronous type of technologies, but as the survey proceeded, this classification was found difficult because both technologies are used in typical e-Learning examples of major countries. As a result, the classification, being centered on major examples of organizations or projects, has been broken down into "overview" and "e-Learning related activities". Technologies used, synchronous and/or asynchronous, are described and classified in a list.

(3) Advanced activities in ASEAN

Within the ASEAN countries, such countries as Singapore have already started advanced activities in the field of collaborative learning and quality standards. Trends of those activities are studied in this topic.

* Although "In ASEAN" is assumed, a supplementary survey was also conducted for China and the Republic of Korea.

[Major topics]

- Next Generation Learning Infrastructure, such as collaborative learning (specifically in Singapore)
- Quality standard: Quality standards of contents and services

* As for the above two topics, the number of countries and applications surveyed were limited, since e-Learning is a technology still under development in Asia.

(4) Government policy and vision (mid- and long-term direction)

In relation to IT policies and educational policies of surveyed countries, how e-Learning is understood and positioned is addressed and analyzed.

[Major topics]

- Status of IT policies

* Those that are especially important among IT policies are discussed.

- e-Learning related measures as part of IT or educational policies

* With respect to the fields of IT and educational policies, those specifically related to e-Learning measures are discussed. Standardization policies as well as activities of organizations related to e-Learning are also included in this topic. As this topic addresses IT human resource education described in section "2.3", its contents may partly overlap depending on specific countries.

- Laws regulating rights for intellectual property and personal information in e-Learning

* Although no legal regulations on e-Learning have been enforced, not only in Asia but also all over the world, any information about laws concerning rights for intellectual property and personal information is introduced if it is found.

- Vision (mid-and-long term direction)

* Although it is difficult to distinguish from IT and education policies, "directions and goals in mid-and-long term" is specifically discussed in this topic, which has been announced regarding e-Learning in view of the long-term perspective.

- International and national conferences (an additional topic)

* International and national conferences which are specifically thought to deserve mentioning are selected from those held in each country, and are directly associated with AEN projects or hosted by AEN related organizations.

(5) International activities: International efforts and promotion activities within ASEAN, such as e-ASEAN

E-Learning related activities by surveyed countries which are meant to be expanded externally, and activities by international organizations or aid agencies are studied under this topic. E-Learning projects collaborated with Japan (if any) are included in particular.

[Major topics]

- E-Learning related activities in e-ASEAN and others

- Efforts by international organizations, such as ASEAN Secretariat (including legal guidelines concerning rights for intellectual property and personal information, for example e-ASEAN Framework)

* Extensive research was conducted on international organizations, aid agencies, and university associations, which are expected to internationally perform e-Learning related activities in Asia, because e-Learning related activities within e-ASEAN are very limited.

(6) Direction of pilot experiments

Based on results from the above-mentioned topics, details of pilot experiments that are deemed necessary in Japan and other Asian countries are discussed.

Furthermore, an overview is shown for concurrently conducted AEN experimental projects, and how to expand and coordinate them is discussed.

* On the basis of results from the above-mentioned topics and overview of pilot experiments, any desirable activities that can be promoted jointly by Japan and Asia are discussed.

## 1.4 Configuration of "Survey Research on e-Learning in Asian Countries"

This survey consists of six topics, as explained so far.

Topics 1 - 4 address each nation's circumstance, topic 5 the activities of entities such as international organizations, and topic 6 the pilot experiment surveys.

This "Overview" section is configured to allow the entire view to be seen, because the details that can be discussed vary widely for each nation and each topic, and are not appropriate to be used for comparison. More specifically, topics 1 - 4 summarize the description in the "Country-specific Reports" section. For more details, please refer to topics 1 - 4 in the “Country-specific Reports” section.

Surveyed countries appear in the following order.

In this report, not the alphabetical order of country names, but the following order is applied, in consideration of whether "abundance of information" or "large number of joint activities with Japanese organizations in e-Learning (namely, high possibility of continuous cooperation)" exists:

(1) Singapore
(2) Republic of Korea
(3) China
(4) Malaysia
(5) Thailand
(6) Philippines
(7) Indonesia
(8) Vietnam
(9) Myanmar
(10) Laos
(11) Cambodia
(12) Brunei

## 1.5 [Notes] About "AEN Conference 2002"

The following conference was held as part of Asia e-Learning Network (AEN) activities. Information collected in the conference has been consulted in this survey.

For more information on the conference, refer to the "International Conference" section of this report.

1. Conference held

(1) Overview of conference

- Name: Asia e-Learning Network Conference 2002
  [Abbreviation: AEN Conference 2002]
- Hosted by: AEN Promotion Committee, JAPAN
- Sponsored by: Ministry of Economy, Trade and Industry (METI, Japan), Advanced Learning Infrastructure Consortium (ALIC, Japan)
- Date: July 24-25, 2002
- Venue: Tokyo Bay Ariake Washington Hotel [http://www.ariake-wh.com/]

Agenda for 2-day Conference:

| Date | Descriptions | Number of participants |
|---|---|---|
| July 24 | Closed meeting for AEN members | Approx. 50 |
| July 25 | AEN members + guests from ALIC | Approx. 150 |

(2) Invited guests (from ASEAN 10 countries)

- From target countries of experimental projects

[1] Staff from government or e-Learning council, [2] Partner of experimental project

- From non-target countries of experimental projects

[1] Government officers, [2] nongovernmental personnel (for example, from universities)

In addition to the invited ASEAN 10 countries, China and the Republic of Korea were also notified of the conference. Two or more participants attended the conference from every 10 ASEAN country and the Republic of Korea, except for China which did not attend.

(3) Country Report

Before the conference was held, AEN had asked delegates of each country to answer a questionnaire about situations regarding e-Learning and to provide information or reference materials of e-Learning. Country Reports were finally collected from nine countries out of 11 participating countries.

They are Singapore, Republic of Korea, Malaysia, Thailand, Philippines, Indonesia, Vietnam, Cambodia, Laos, and Brunei.

## 2. Market: Market Trends of e-Learning

Regarding this topic, surveys were conducted on such basic indices for e-Learning development as "status of IT promotion (centered on the Internet)", "status of education and training system", "status of IT human resources," and "e-Learning industry and market".

### 2.1 Status of IT Promotion (Centered on the Internet)

Recent information about the Internet usage in target countries and Japan is listed below:

Table 2-1 Internet usage of each country

| | Total Number of Hosts | Hosts per 10,000 inhabitants | Number of ISPs | The number of users (unit: 1,000) | Penetration rate of users |
|---|---|---|---|---|---|
| Singapore | 197,959 | 479.18 | 42 | 1,500 | 36.31 |
| Republic of Korea | 439,859 | 94.01 | 99 | 24,380 | 52.11 |
| China | 89,357 | 0.68 | 936 | 33,700 | 2.57 |
| Malaysia | 74,007 | 31.10 | 6 | 6,500 | 27.31 |
| Thailand | 71,995 | 11.75 | 18 | 3,536 | 5.77 |
| Philippine | 30,851 | 3.94 | 51 | 2,000 | 2.56 |
| Indonesia | 45,660 | 2.18 | 60 | 4,000 | 1.91 |
| Vietnam | 487 | 0.06 | 4 | 1,010 | 1.24 |
| Myanmar | 2 | — | 1 | 10 | 0.02 |
| Laos | 165 | 0.31 | 3 | 10 | 0.19 |
| Cambodia | 623 | 0.46 | 4 | 10 | 0.07 |
| Brunei | 8,707 | 259.91 | 2 | 35 | 10.45 |
| Japan | 7,118,333 | 559.22 | 4,000 | 55,930 | 43.94 |

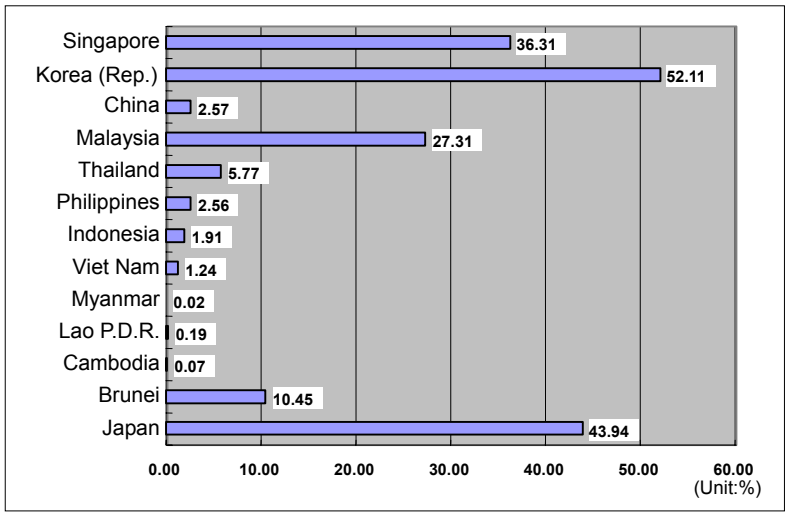
Note: The number of ISPs of Laos and Cambodia is quoted from the following materials.
ITU (2000.3) *Internet on the Mekong: Lao PDR Case Study*
http://www.itu.int/ITU-D/ict/cs/laos/material/LAO%20CS.pdf
ITU (2002.3) *Khmer Internet: Cambodia Case Study*
http://www.itu.int/ITU-D/ict/cs/cambodia/material/KHM%20CS.pdf

Data: Compiled from the following materials
ITU (2001) *Internet indicators: Hosts, Users and Number of PCs*
http://www.itu.int/ITU-D/ict/statistics/at_glance/Internet01.pdf
ITU (2002.12) *International Internet bandwidth in Asia-Pacific & Asia-Pacific Internet economy*
http://www.itu.int/itunews/issue/2002/10/indicators.html

"Penetration rate of Internet users" is the most frequently used index to evaluate the status of Internet usage.

For the number of Internet Service Providers (ISP), the most typical numbers were adopted though several different numbers are reported for Indochina countries and the Philippines. There are problems, however, about the reported numbers. For example, the number of ISPs in Indonesia and the Philippines is far greater than that of Malaysia, but there are many cases where the ISPs in the two countries just have the business licenses or provide only a limited number of services.

As values which can be used to compare different countries, the most typical survey results from International Telecommunication Union (ITU) were used for these indices, and various kinds of documents were also referenced. However, even the ITU's survey results contained inconsistencies and is not necessarily consistent in all instances.

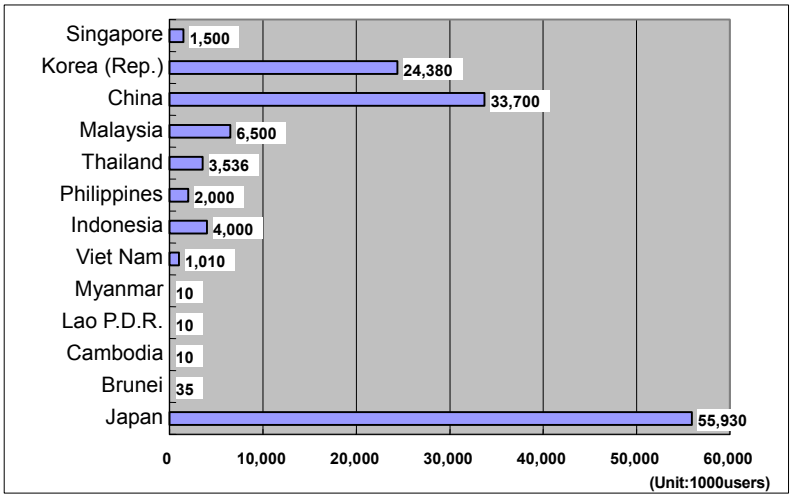



Data: Compiled from the following materials.
ITU (2001) *Internet indicators: Hosts, Users and Number of PCs*
http://www.itu.int/ITU-D/ict/statistics/at_glance/Internet01.pdf
ITU (2002.12) *International Internet bandwidth in Asia-Pacific & Asia-Pacific Internet*
http://www.itu.int/itunews/issue/2002/10/indicators.html

Figure 2-1 Comparison of Internet penetration ratio

As shown in the above figure, the Republic of Korea is outstanding in Internet penetration rate. Among Southeast Asian countries, the penetration rate in Thailand and Philippines is relatively high following that of Singapore and Malaysia. The rate in Indochina countries, except Vietnam, is less than 1 %. The high penetration rate in Brunei may be ascribed to the country's favorable financial situations as well as its small population.

The penetration rate only serves as one of the referential indices, however, since comparing 2.57 % of China that holds more than a billion population with 10.45% of Brunei that accommodates a small population does not make much sense. In practice, other factors such as the number of users and contents of provided services should also be taken into consideration. For example, broadband services such as CATV and DSL have become widespread in metropolises in China, as well as in the Republic of Korea and Singapore, though such services are not included in this comparison because they are provided in only a few countries.




Data: Compiled from the following materials.
ITU (2001) *Internet indicators: Hosts, Users and Number of PCs*
http://www.itu.int/ITU-D/ict/statistics/at_glance/Internet01.pdf
ITU (2002.12) *International Internet bandwidth in Asia-Pacific & Asia-Pacific Internet*
http://www.itu.int/itunews/issue/2002/10/indicators.html

Figure 2-2 Comparison of Number of Internet Users

Though China is low in penetration rate, it is second to Japan in the target countries in terms of the number of users. The number is still rapidly increasing and it is estimated that China will become the world's largest user of the Internet within the next few years.

Determining comprehensively the current levels of IT infrastructure based on these indices, the surveyed countries are categorized into following 3 major groups.

- Group A: Republic of Korea, Singapore, Malaysia, China
- Group B: Thailand, Philippines, Indonesia, Brunei
- Group C: Vietnam, Cambodia, Laos, Myanmar

Although China can be categorized into Group B, it is put in Group A because of the great number of users and its potential in the future. Brunei is categorized in Group B, but we should note that the number of users is less than that of Vietnam in Group C.

Important factors to determine e-Learning growth potential of a country include the penetration rate of the Internet, that provides the most basic means for e-Learning, and the number of potential users (based on the size of population and income level) that is expected to take advantage of large-scale implementation of e-Learning.

## 2.2 Status of Education and Training System

This topic focuses on "higher education" and "vocational education" that are target areas of Asia e-Learning Network (AEN).

For higher education, ages for entry and graduation do not greatly differ for each country, but there are countries, such as Singapore, which are unique in that multiple learning courses are provided to be selected prior to higher education. As IT promotion is rapidly evolving in each society, efforts to integrate IT into higher education are attracting more and more attention.

Vocational education in various forms is conducted in each country. Since in many countries, there are vocational schools specialized for each area of ministry, the overall view of vocational education can hardly be seen.

## 2.3 IT Human Resources Required

This topic deals with "IT human resources required" and "status of IT human resource training."

In "IT human resources required", current status and future needs of IT human resources is researched for each country. Research on this topic was conducted mainly by IT related ministries and organizations in Singapore, Malaysia, and the Republic of Korea, but few results are available which can be used to compare different countries.

Results of the research conducted by South East Asia Regional Computer Confederation (SEARCC) back in 1999-2000 were also referenced but ignored, because the results contain only four of our target countries.

The problem common to all target countries is the shortage of human resources from science and technology fields to activate IT promotion. Singapore, which is said to have become one of world's leaders in IT development, has also a problem of shortage in IT human resources, and tries to invite good human resources from overseas and to retain domestic human resources. In Thailand where those who graduated from higher science and technology education are traditionally scarce, shortage of human resources in these fields causes difficulties in inviting foreign manufacturing industries, and may considerably affect future growth of the economy. On the other hand, China that holds many graduates from science and technology fields is attracting global attention.

In the "status of IT human resource training" topic, we tried to understand policies and programs of IT human resource training in each country. Although Asian governments are highly concerned about IT human resource training and have enforced many policies, many of them have not been implemented or successful, and further improvements may be required.

## 2.4 E-Learning Market Trends

In this topic, "outline of e-Learning industry" and "e-Learning market size" are researched.

E-Learning has reached a certain level that can be viewed as an "industry" only in a few countries such as Singapore and the Republic of Korea, if the "e-Learning industry" is to be represented by e-Learning providers (or vendors) including universities and companies. In China and Malaysia, there are many cases in which e-Learning is provided by universities and their affiliated companies. In Thailand, there are cases where projects operated jointly by the government and private sector play a role of e-Learning vendors, in addition to universities.

In Indochina countries, since there are only a few projects related to e-Learning, as a part of foreign aids, and a long distance still lies ahead before e-Learning is provided, it is very doubtful if "e-Learning industry" will ever be established in the future.

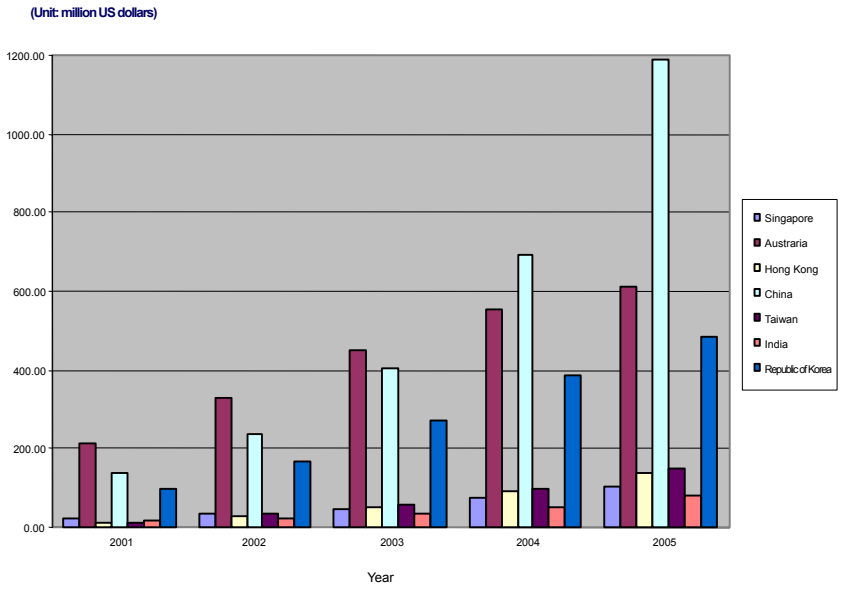
As to "e-Learning market size", data from surveys conducted by governments or trusted research agencies is available only for Singapore and the Republic of Korea at this moment.

For Singapore, Infocomm Development Authority (IDA) had declined to disclose results of surveys that were commissioned to a private research agency, because of defects in the results, but finally publicized it in February 2003.

With the goal of "becoming a hub of e-Learning in Asia," Singapore has been conducting

research on the trends of domestic markets as well as markets in surrounding countries that are regarded as future markets.

The figure 2-3 shows the trends of the e-Learning market in certain Asian countries, which was researched by IDA.

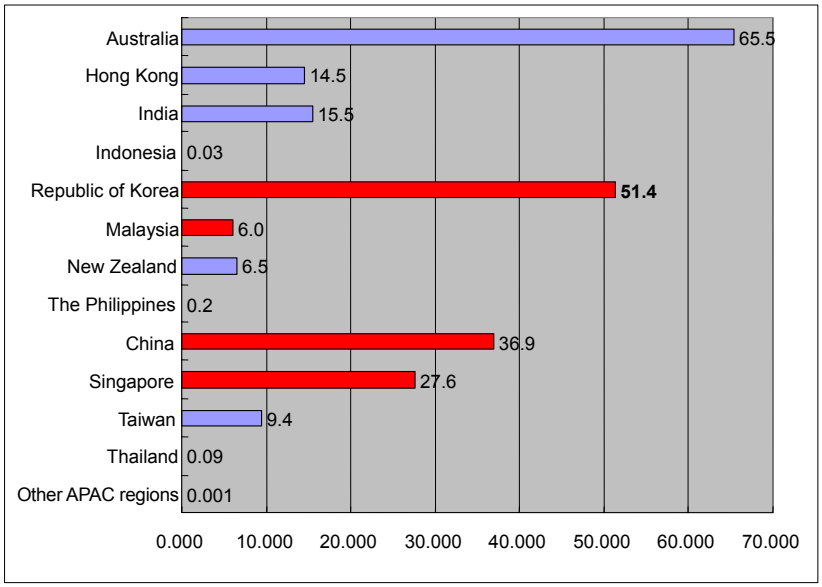



Source: IDA (2003.2) *Survey on the e-Learning Market of the region*

Figure 2-3 e-Learning Markets in Asia (by Country)

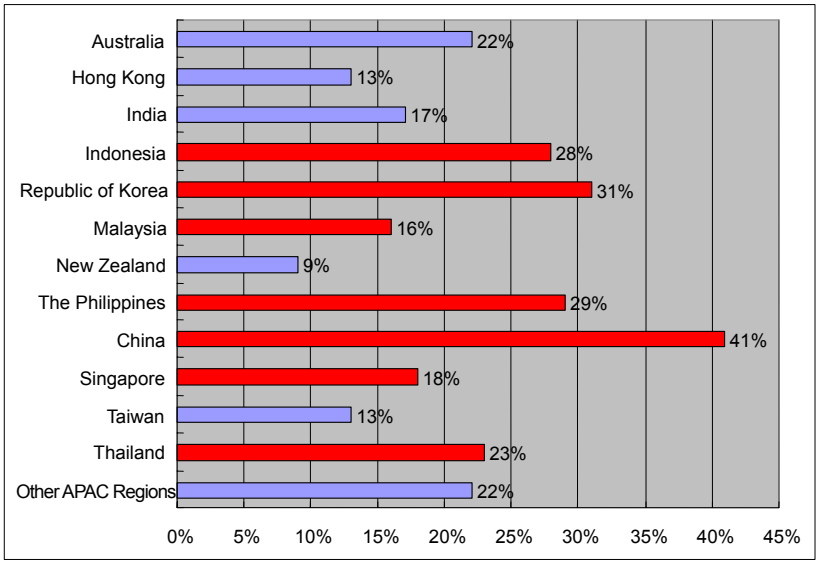
We can consult results of other research conducted by IDC, an American private IT research agency, which is often quoted for the size of e-Learning market. Although it does not contain all of the target countries, its results on the market size of e-Learning are introduced as a reference to corporate education.

The results are greatly different in values from those of IDA's research, which may be due to the difference in prerequisites set for target markets and in estimating methods.




Source: Cindy Sim(2001)*E-Learning: Panacea or Placebo*, Asia Pacific Development
Source: IDC Survey 2001
Note: Bars of our target countries are changed to a darker color.

Figure 2-4 Estimated amount of investment in e-Learning for corporate education in 2005




Source: Cindy Sim(2001)*E-Learning: Panacea or Placebo*, Asia Pacific Development
Source: IDC Survey 2001
Note: Bars of our target countries are changed to a darker color.

Figure 2-5 Growth rate of e-Learning for corporate education (2000-2005)

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

In this topic, an attempt was initially made to address and categorize e-Learning systems by synchronous and asynchronous technologies. However, while different countries address themselves to e-Learning in different ways, we see an increasing number of practical usages of both synchronous and asynchronous technologies or plans to apply such a usage. We determined, therefore, not to categorize them by the technology types, but describe first overviews of each organization or project, and then describe the topic using categorizations only if applicable.

The most active e-Learning sector in Asia is the field of higher education. There are many reasons for it: certain number of users constantly exist, communication infrastructures are relatively well developed in the domestic environment, and e-Learning has been initiated in the process of researching IT and educational technology.

Among target countries, some, including Singapore, are in the top level in the world of developing and operating e-Learning systems that are conformable to international standardization, while others are still on a level at which only dial-up Internet connections are available.

Developing countries are behind in establishing higher education systems, and the ratio of students who enter higher education schools is low, resulting in limited opportunities for young people to receive higher education. Thus, potential demands for e-Learning may be great.

In Thailand, as correspondence courses (public education) have been widely offered, colleges that provide such courses are promoting utilization of multimedia. In Malaysia, the Philippines, and Indonesia, efforts are being made in recent years to establish and operate correspondence course colleges in the prospect of using multimedia.

On the other hand, in other Indochina countries, little progress has been made in education systems because not only correspondence courses, but also colleges are very limited in number. In China and Korea, in addition to conventional higher education institutions to which students commute, professional e-Learning colleges (e.g. International Cyber University in the Republic of Korea) and departments (e.g. network institutes in China) that utilize multimedia are being established.

In China, where IT companies are founded under colleges and play a major role in domestic IT industry, these companies are serving as e-Learning vendors in many cases. Thus, the cases are increasing where results of research and development of e-Learning systems that were intended for use inside colleges are sold to others by affiliated companies. Similar cases are also found in colleges in Singapore.

As the means of providing lectures, some countries, including Singapore and the Republic of Korea, mainly use the Internet, and others, including China, Malaysia, Thailand, and Indonesia, actively use satellite communications, depending on each one's geographical conditions.

Organizations that represent major instances of e-Learning differ for each country, which include colleges, government projects, vendors and a few user companies. This made it difficult to compare all instances comprehensively. Therefore, a category list was created for each country for better understanding of each case, although the system operation methods (synchronous or asynchronous) were not easy to be determined because of the amount of information available. Details to characterize the case are described in the Remarks column.

Applicable items are checked with "x" in the grid. Items that are not applicable or unknown because enough information is not available, are left empty in the grid.

### 3.1 Singapore

Colleges in Singapore are considered to be in the top level in the world of their approaches to e-Learning.

E-Learning vendors include many foreign firms such as American companies. Several unique user companies exist, but e-Learning utilization by private companies has just started.

Lectures are available in English.

| Institution name / Project name | Category | Synchronous | Asynchronous | Remarks (Important point, keyword, financial sources, budget scale) |
|---|---|---|---|---|
| National University of Singapore (NUS) | University | x | x | IVLE and Open IVLE, NUSCast |
| Nanyang Technological University (NTU) | University | x | x | EdVeNTUre, Blackboard Consortium |
| Singapore Management University (SMU) | University | | x | SMUConnect |
| Singapore-MIT Alliance (SMA) | Government, domestic/ foreign universities | x | x | A joint program of NUS, NTU, and MIT |
| Civil Service College | Training institute | | x | e-Learning portal site "Open Academy" |
| Temasek Polytechnic (TP) | Polytechnic | | x | TraIL, THEC, CITE |
| NTUC Income | Company | | x | Off-the-shelf, service manual, product knowledge, preparation course for certification examination, and others |
| CityCAB | Company | | x | Taxi Vocational License(VL)Course |

### 3.2 Republic of Korea

Main leaders of e-Learning industry in Korea are educational institutions, especially cyber-colleges in higher education fields, and large-scale enterprises using e-Learning for corporate education, as well as e-Learning vendors who provide these organizations with services.

There are numerous e-Learning vendors domestically, and most of them are engaged in achieving solutions, contents development, and educational service businesses. It is said that the number of such vendors exceeds 100. There are also other firms which sell LMSs that conform to SCORM.

Main firms are listed below:

- Mediopia Technology (www.mediopia.co.kr)
- Samsung SDS (www.e-campus.co.kr)
- Credu (www.credu.com)
- Hanbitnet (www.hanbitnet.com)
- Baeoom (www.Baeoom.com)

Status of e-Learning users is described below:

Approximately 20,000 students attend 15 domestic cyber universities, and approximately 300,000 workers participate in e-Learning courses to improve their capabilities. Further, approximately 100,000 school teachers are making use of e-Learning.

Online classes are used by the general public, for such subjects as English education, clerical work, or computerization.

Lectures given in English are not many.

| Institution name / Project name | Category | Synchronous | Asynchronous | Remarks (Important point, keyword, financial sources, budget scale) |
|---|---|---|---|---|
| Cyber universities (15 universities as of 2002, which will continue to increase) | University | x | x | Offered by combining TV conference system based on PCs, mail, chat, etc. |
| Ewha Womans University | University | | x | International Cyber University (ICU) |
| Mediopia Technology | Company | x | x | EduTrack |
| Samsung SDS | Company | x | x | e-Campus, eduPort |
| Credu | Company | | x | Cyber MBA, e-Learning specialized course |

### 3.3 China

Characteristics of China lie in the fact that IT enterprises affiliated with colleges are promoting domestic IT industry. There are many cases in which these IT enterprises are acting as e-Learning vendors. Thus, in China, cases are increasing where results of research and development of e-Learning systems that were intended for use inside colleges are sold to others by affiliated companies.

"Network Schools" dedicated for correspondence education using multimedia are being established within universities which aim to attract more students, and as many as 20,000 students enrolled in a specific case.

In China, usage of satellite communications have long since been frequent, and satellites are used to deliver lectures to local centers of those "Network Schools" of major universities.

Few enterprises have started to take advantage of e-Learning for corporate education.

Lectures given in English are scarce.

| Institution name / Project name | Category | Synchronous | Asynchronous | Remarks (Important point, keyword, financial sources, budget scale) |
|---|---|---|---|---|
| Fudan University | University | x | x | Cooperation with Aoyama Gakuin University and Waseda University in the past Affiliates with vendors Conformable to SCORM |
| Tsinghua University | University | x | x | Cooperation with Waseda University in the past Affiliates with vendors |
| Renmin University of China | University | x | x | Operates network school jointly with China Net |
| Peking University / Beida-Online | University | x | x | Company affiliated with Peking University |
| PRCEDU.com | Company | | x | Provides platforms and educational contents |

### 3.4 Malaysia

In Malaysia, e-Learning technologies are being developed mainly by colleges and enterprises, including the University of Malaya which first developed COL (Course OnLine) in 1998. Ever since, various colleges have been developing e-Learning systems on their own. Such systems include Multimedia Learning System (MMLS) by MMU or Virtual On-line Instructional Support System (VOISS) by UNITAR.

UNITAR also provides schooling at its college specialized in correspondence education. Its affiliated e-Learning vendor company, with dozens of employees, is responsible for the development of contents. Additionally, it is devoting itself to internationalization, and offers lectures at regional centers in Cambodia and Indonesia.

MMU was successful in making its own LMS "MMLS" conformable to SCORM in the AEN experimental project.

Lectures are available in English.

| Institution name / Project name | Category | Synchronous | Asynchronous | Remarks (Important point, keyword, financial sources, budget scale) |
|---|---|---|---|---|
| Multimedia University (MMU) | University | x | x | Funded 100% by Telecom Malaysia<br>Established to educate IT engineers taking responsibility for MSC plan<br>LMS "MMLS" on its own<br>Development group consisting of 40 members |
| Universiti Tun Abdul Razak (UNITAR) | University | x | x | First virtual college in Malaysia<br>Also positive in international activities<br>Owns affiliated vendor company |
| Universiti Sains Malaysia (USM) | University | x | x | Uses VideoNet for delivery over Internet |
| Open University of Malaysia (UNITEM) | University | x | x | College specialized in remote education |
| Universiti Teknologi MARA (UITM) | University | x | x | Established to educate human resources of Bumiptra |
| Universiti Putra Malaysia (UPM) | University | x | x | Mahirnet is in charge of technology |
| National Institute of Public Administration Malaysia (INTAN) | Civil servent training organization | x | | Organization to take over J-Net |

### 3.5 Thailand

E-Learning technologies in Thailand have been developed under the leadership of colleges and enterprises. In addition, satellite communications and TV broadcastings have been used to support local elementary and secondary educations. Two correspondence education colleges have been established, based on the concept of British Open University, and they are on the way to the multimedia era.

Some projects, such as NSTDA/NECTEC which was led jointly by the government and private companies, have been transformed to act as vendors.

Lectures given in English are scarce.

| Institution name / Project name | Category | Synchronous | Asynchronous | Remarks (Important point, keyword, financial sources, budget scale) |
|---|---|---|---|---|
| Chulalongkorn University (CU) | University | x | x | CU-WB<br>Knowledge Management project<br>CU Flexible Learning<br>ChulaOnline |
| Thammasat University (TU) | University | x | x | Remote lectures connected to University of Osaka<br>Remote lectures connected to Nagaoka University of Technology |
| Sukhothai Thammathirat Open University (STOU) | University | | x | STOU Virtual University Project |
| King Mongkut's Institute of Technology, Ladkrabang (KMITL) | University | x | | Uses satellite transmitting facility for remote lectures connected to Tokai University and Tokyo Technology University |
| Chiang Mai University (CMU) | University | | x | CMU Online Learning |
| Asia Institute of Technology (AIT) | University | x | x | AEN pilot experiment project in cooperation with NSTDA and Tokyo Technology University |
| Distance Learning Foundation (DLF) | Private company | x | x | Implemented remote education using satellites |
| Thailand Training Network (TTN) | Private company | x | | Provides continuously professional trainings for industry |
| LearnOnline | Private company | | x | Provides WBT courses |
| NSTDA Online Learning Project (NOLP) | Private company | | x | Provides e-Learning solutions to educational or corporate organizations |

### 3.6 Philippines

E-Learning related projects in the Philippines are in progress through cooperation between the government and private companies, in addition to each party's individual activity. Especially, many projects have been created for the purpose of establishing infrastructures through joint efforts of private companies and governmental organizations.

With regard to systems and technologies, CBT or multimedia educational materials are used. As an asynchronous technology, CD-ROMs are typically used, in addition to WBT. Among lectures offered by colleges and others, few are using WBT systems of asynchronous type.

Many lectures at the graduate school level are offered in English.

| Institution name / Project name | Category | Synchronous | Asynchronous | Remarks (Important point, keyword, financial sources, budget scale) |
|---|---|---|---|---|
| University of the Philippines, Open University (UPOU) | University | | x | OPEN IVLE<br>Lectures are delivered through Internet |
| De La Salle University (DLSU) | University | | x | mba.online@gsb InterMATL |
| International Rice Research Institute (IRRI) | Governmental foreign foundation | x | x | Rice Knowledge Bank |
| STAC-J | Non-governmental organization | x | | Japan Pilot Distance Education Project<br>Videoconference system<br>EDUCONFAB 2002 |

### 3.7 Indonesia

In Indonesia, although needs for remote education are high, in view of its wide spreading territory and 200 millions of population, e-Learning which uses networks over the Internet is not developed. Factors preventing e-Learning from evolving include the Indonesian government's policy, which does not admit diplomas for e-Learning except for Indonesian Open Learning University, a correspondence education style university. On the other hand, a few colleges (Bandon Institute of Technology, Bogor Agricultural University, Gadjamada University, Diponegoro University, etc.) have started to investigate e-Learning.

Lectures given in English are scarce.

| Institution name / Project name | Category | Synchronous | Asynchronous | Remarks (Important point, keyword, financial sources, budget scale) |
|---|---|---|---|---|
| Indonesian Open Learning University | University | x | x | Offers tutorials only online. |
| Petra Christian University of Surabaya | University | | x | Offers online a part of lectures |
| Indonesian Distance Learning Network (IDLN) | Governmental organization | | | Conducts surveys on e-Learning |
| (MHA:Ministry of Home Affairs) | Governmental project | x | x | Currently planning Implementation<br>plan is aided by Japanese Ministry of Public Management, Home Affairs, Posts and Telecommunications |

### 3.8 Vietnam

In Vietnam, most e-Learning related activities are based on individual projects, primarily owing to communication infrastructure environments and level of IT literacy.

The e-Learning center established in the suburbs of Hanoi, with support of the Ministry of Economy, Trade and Industry, Japan, is expected to form a central entity for future e-Learning related activities, and currently offers services through digital training materials to be learned using LAN installed within this center's facility.

Lectures given in English are scarce.

| Institution name / Project name | Category | Synchronous | Asynchronous | Remarks (Important point, keyword, financial sources, budget scale) |
|---|---|---|---|---|
| Hanoi University of Technology (HUT) | University | | x | 2 WBT courses for physics are offered on the Web site, which is thought to have been started in September 2000 |
| The Distance Education project | University joint project | | x | 3 different experiments were conducted in the fields of economics, science, and others using WBT, during phase 1 which is between April 1998 and March 2003 |
| Vietnam human resource training project | Joint project between Public service corporation and college | x | | Conducted remote training experiments starting from 1999 up to 2000 |
| E-Learning center (affiliated to Ministry of Science, Technology and Environment) | Governmental project | | x | Supported by Japanese Ministry of Economy, Trade and Industry |
| MeetingPlaza | Joint project of private companies | x | x | Commercial service to offer TV conference service using ASP in Vietnam |

### 3.9 Myanmar

In Myanmar, e-Learning had hardly been experimented with or implemented so far, and is far behind other Asian countries in comparison.

YUCS was once used as one of the locations to receive lectures through satellite Internet communication, as a part of "SOIASIA Project" operated by Keio University. The organization that participated in this project was the college itself (entire institution), and attendants were approximately 80 consisting of students in the latter part of their doctoral courses and graduate school students. Video and audio was transmitted through 500kbps lines from Japan, which were responded to with a number of e-mails from Myanmar.

The very few findings that have been confirmed so far are as follows.

| Institution name / Project name | Category | Synchronous | Asynchronous | Remarks (Important point, keyword, financial sources, budget scale) |
|---|---|---|---|---|
| E-Learning center | Joint project with the government | | x | Uses WBT to provide basic data processing engineer's training materials for data processing engineer examination |

### 3.10 Laos

No information is available on e-Learning activities conducted independently by Laos.

NUOL was once used as one of locations to receive lectures through satellite Internet communication, as a part of "SOIASIA Project" operated by Keio University. The organization that participated in this project was the technology faculty of NUOL, and attendants were teaching staff of computer education department. LAN was partly installed within the institution, and chat windows were used on the Internet dial-up connections, to submit questions to Japan and to explain various situations concerning Laos.

### 3.11 Cambodia

Whether appropriate information exists or not is unknown.

### 3.12 Brunei

In Brunei, e-Learning activities are being carried out in Universiti Brunei Darussalam (UBD). UBD is now considering using e-Learning to supplement existing methods of offering lectures, and plans to employ e-Learning in a few faculties within the next 2 years.

Some teachers have already started to experiment with e-Learning using TV conference systems, and currently trying to determine a common basis for the contents of courses that can be applied on commonly used platforms.

| Institution name / Project name | Category | Synchronous | Asynchronous | Remarks (Important point, keyword, financial sources, budget scale) |
|---|---|---|---|---|
| Universiti Brunei Darussalam (UBD) | University | x | | TV conference system for international conferences was installed in UBD Education Technology Center (ETC) |

## 4. Advanced Activities in ASEAN

This topic researches movements within ASEAN countries plus China and Korea, in terms of "Next Generation Learning Infrastructure such as Collaborative Learning" and "Quality Standard" which represent advanced fields of e-Learning.

However, these are the advanced fields to be focused on at the future stage where e-Learning activities are well established and materialized, but in Asia which has just started e-Learning, the number of countries in which e-Learning related activities are recognized is limited.

In international conferences, many specialists suggested that the quality standards of e-Learning would be our main concern in the future, but few specific procedures for activities were mentioned.

The countries are as follows, in which activities have been confirmed for " Next Generation Learning Infrastructure such as Collaborative Learning" and "Quality Standard":

| Country | Collaborative Learning | Quality Standard |
|---|---|---|
| Singapore | Efforts to apply e-Learning in colleges contain efforts for collaborative learning. For example, in "SMA Program", in order to encourage communication between teachers and students not only during lectures but also in other occasions, most-advanced facilities are installed to improve the quality of collaborative learning. NUS is also proceeding in developing a plan for a network collaborative learning environment, called "Collaborative Virtual Interactive Simulations (C-VISions) System". | E-Learning Competency Centre (ECC) publishes "Quality Criteria for E-Learning Courseware" and "Recommended Processes for E-Learning Courseware Development".<br>Quality Control (QC) approach is taken for Quality standard for coursewares, and Quality Assurance (QA) approach is taken for the evaluation criteria of the courseware development process. These approaches would complement each other to help improve the quality of e-Learning coursewares. |
| Republic of Korea | Korean e-Learning vendors include many firms that develop their own LMS, and presumably they also develop products for collaborative learning. However, organizational efforts conducted by the government or e-Learning related organizations is unknown. | Quality standards of e-Learning contents and services attract high concern, but have not been defined by the government or by associations / organizations. |
| China | "Chinese E-Learning Technology Standardization Committee (CELTSC)", which is affiliated with Chinese Ministry of Education and is promoting standardization of e-Learning technology, has a working subcommittee for collaborative learning (CELTS-16). | "Chinese E-Learning Technology Standardization Committee (CELTSC)" contains a working subcommittee for "standards for educational service quality".<br>To maintain the level of education, the Ministry of Education announced "recommendations on advanced control of network education school within college to improve education quality" in July 2002. |
| Philippines | | Technical Committee in CHED is trying to improve e-Learning contents quality.<br>It released "Updated Policies and Guidelines on Open Learning and Distance Education", to emphasize the necessity of instructional design. In addition, it also plans and defines "Quality Assurance Framework". |

## 5. Government Policy and Vision (Mid- and Long-term Direction)

This topic describes the overview of IT policies in “Status of IT Policy”, and then focuses among them on the educational policies in "e-Learning Related Measures as Part of IT or Education Policy". As part of such e-Learning related measures, approaches of each government in cooperation with private sector to the e-Learning standardization are also discussed. Countries having e-Learning standardization organizations or consortia are introduced in this topic.

As for Intellectual property and copyright issues, which indirectly support (or prevent) penetration of e-Learning, information related indirectly to e-Learning (if any) are described, since information that is directly related to e-Learning was scarcely available.

In "Vision", any mid- or long-range policies or plans that are meant to promote e-Learning are discussed, though it may overlap to some extent with the description of e-Learning related measures.

### 5.1 Status of IT Policies

Policies related to IT promotion are proposed or enforced in every country, as shown in the following table.

However, we should note that the levels of implementation and achievement can vary, because some developing countries set a goal regarding IT development which seems impossible to attain (such as training some 10 thousand of IT human resources), or because some plans are not put into operation due to a regime change and other reasons.

Table 5-1 Strategies for Computerization by Each Country

| Country | Computerization Strategies | Goal, Plan, and others |
|---|---|---|
| Singapore | Infocomm21 (2000-2005) | Strategic plan for information and communication technology promotion. Aims at becoming a premier infocomm hub. |
| | Singapore ONE (1996-) | Action plan by IT2000. Project to construct infrastructure and develop applications, to allow for connection of each household via broadband network to take advantage of multimedia services at home using high-speed Internet. |
| Republic of Korea | e-KOREA VISION 2006 (2002-2006) | IT Vision. Plan which focuses on enhancement of people's awareness in computerization, in accordance with evolving infrastructures such as high-speed communication networks. Computerization in society or industry is encouraged, and international cooperation is reinforced to be ready for global information society. Aims to increase usage of the Internet to 90% of the population. |
| | Cyber Korea 21 (1999-2002) | International competitiveness and quality of people's living will be raised to the level of advanced countries, by constructing a high-speed data communication infrastructure, promoting the creation of electronic government, etc. |
| China | 10th 5-year Plan (2001-2005) | Targeting to construct high-speed networks. |
| Malaysia | 8th National Development Plan (2001-2005) | Aims to become ICT multimedia hub, by completing communication infrastructure, developing human resources in ICT area, etc. |
| | MSC Plan (1996-) | An area of 15km x 50km between Kuala Lumpur and the new international airport, which are connected by a high-speed optical fiber network, will be used as a "testbed for computerized society", and central location for data communication industry will be created at the same time. Project constituting a part of "Vision 2002" plan whose aim is to be counted as one of the advanced countries by 2020. |
| Thailand | IT 2010 (2001-2010) | IT policy plan oriented to 5 directions; e-Society, e-Government, e-Commerce, e-Industry, and e-Education. |
| | ICT Master Plan (2002-2006) | Action plan to realize IT2010. Aims to complete broadband network for use in every province. |
| Philippines | IT21 (1998-2007) | Consists of 3 phases and aims finally to become an Asian knowledge center before 2010. |
| Indonesia | President instructions for ICT (IT) development and promotion (2001-) | Aims to promote democratization, to improve living standards, to construct and promote a national data communication foundation, and to create an electronic government. |
| | Nusantara21 (Delayed: -2004) | Project to connect domestic islands through high-speed backbone by 2001. |
| Vietnam | IT Vision2020 (2005-2020) | Aims to bring domestic IT industry to a higher level than that of surrounding countries by 2010. Also aims to provide a domestic communication super highway across the nation at a reasonable price, and increase the number of Internet users up to the world's average ratio. |
| Myanmar | IT Master Plan (2001-2010) | Aims to construct information and communication infrastructure, to establish and operate an active IT industry, to utilize IT in education and training, etc. |
| Laos | ICT Guideline (2001-) | Promotes construction of ICT infrastructure, utilization of ICT in domestic social economy strategies, economy, and national defense, and promotion of human resource education to utilize and evolve ICT. |
| Cambodia | ICT policy plan (2001-2005) | 5-year master plan by NICTDA. Short-, mid- and long-range policy to promote ICT. |
| Brunei | 8th National Development Plan (2001-2005) | Aims at construction of an infrastructure, human resource development, and social service improvement. Human resource development and IT utilization are emphasized. |

Source: multiple reference materials

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

Items relating to educational policies are mainly extracted here, though it overlaps to some extent with the above IT policies. It is assumed that these policies are directly or indirectly involved in e-Learning promotion to varying degrees.

Table 5-2 IT Policies Related to Educational Policies in each Asian country

| Country | Policy or Project |
|---|---|
| Singapore | "IT Education Master Plan (April 1997-)" |
| Republic of Korea | Promotion of "Second phase comprehensive plan for ICT usage in education"<br>"Plan to promote education appropriate for computerization age (July 1996-)" |
| China | "Education Management IT Standardization (1999-)"<br>"Plan of education promotion for 21st century (1998-)" |
| Malaysia | "Smart School plan (April 2001-)" |
| Thailand | "UniNet (1997-)"<br>"SchoolNet (1996-)" |
| Philippines | "PREGINET (1994-)" |
| Indonesia | Policy for human resource education usng IT was discussed in "No.133/M.PAN/5/2001 (5-year plan)" |
| Vietnam | Usage of ICT in education was discussed in "Ministry of Education and Training No.29/2001/CT Direction (2001)" |
| Myanmar | "E-education Internet system (under consideration)" |
| Laos | Draft for "ICT human resource education action plan" project was created in "ICT guideline (2001-)", and preparations are being made to ask for aids to supporting countries. |
| Cambodia | "SchoolNet project" is implemented jointly with e-ASEAN task force. |
| Brunei | Human resource development and usage of IT were discussed in "8th National Development plan (2001-2005)" |

Source: multiple reference materials

Major e-Learning related organizations are as follows: These organizations are often acting also as contact locations for AEN in individual countries (except for China where no definitive contact is assigned).

Table 5-3 Organization involving e-Learning in each country

| Country | Organization <Agency if deputized by government> [Time of establishment] | Description of activities |
|---|---|---|
| Singapore | E-Learning Competency Centre (ECC) [December 2001] | Central consortium for e-Learning which was established by IDA and other entities. Main activities consist of acceptance of e-Learning standards and promotion of its usage, holding seminars for diffusion and education, and development and promotion of e-Learning guidelines (quality criteria and development evaluation criteria of courseware, etc). Holds Plugfest, standardization seminar, etc. |
| Republic of Korea | Korea e-Learning Industry Association (KELIA) [September 2002] | Organization founded mainly by e-Learning related enterprises, and also supported by government. Primary activities include promotion of e-Learning industry, finding markets, implementation of joint projects with foreign organizations.<br><br>* Note: The following e-Learning related organizations consisting mainly of colleges are also cooperative members of KELIA:<br>・Korea Association of Cyber Education<br>・Korea University Alliance for Cyber Education |
| China | Chinese E-Learning Technology Standardization Committee (CELTSC) [2000] | Although no industry-government-academia consortium is established, this committee is promoting standardization of e-Learning technology under control of the Ministry of Education. |
| Malaysia | National Steering Committee on e-Learning [October 2002] | A committee established by government, universities, etc. Primary activities include an international conference held in January 2002. |
| Thailand | NECTEC, UniNet e-Learning Consortium, etc. | NSTDA/NECTEC is leading governmental activities. UniNet e-Learning & Multimedia Consortium has operated only within colleges since 2002. Collaboration with related organizations with AEN, are planned for the future. |
| Philippines | ITECC HRD e-Learning Sub committee [2001] | A committee organized by government, colleges, enterprises, etc. Primary activities include an international conference held in August 2002. |

Source: multiple reference materials

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

It is said that legal awareness is low in Asia as far as rights of intellectual property and personal information are concerned.

Along with increasing Internet usage, however, IP and personal information issues are beginning to be discussed widely. But it is unknown if any laws are enforced regarding rights of intellectual property or personal information directly that are related to e-Learning.

Furthermore, some specialists from countries which are actively addressing themselves to e-Learning have an opinion that "legal restrictions, if used inappropriately, may prevent e-Learning from progressing that is barely started." It may take, therefore, considerable time before any conclusions are reached.

## 5.4 Vision

Countries that have developed mid-range vision on e-Learning are Singapore and Korea. As for China, there are promotion activities on e-Learning as part of higher education, but nothing could be confirmed as national vision.

In other countries, education and promotion of its computerization are often addressed in national development or IT policies.

## 5.5 International and National Conferences

Conferences are described here, including large-scale international and domestic conferences for e-Learning, and conferences involving member organizations belonging to Asia e-Learning Network (AEN), in order to understand respective movements of e-Learning in each country.

Conferences are listed below, which AEN members attended:

| Event | Location & Date | Sponsor | # of attendants | Remarks (such as participation of Japan) |
|---|---|---|---|---|
| Asia e-Learning Initiative Forum | Bangkok<br>June 5, 2002 | Sponsored jointly by NECTEC and Ministry of Economy, Trade and Industry, Japan | 200 | Foreign lecturers from Japan, Singapore, Malaysia, and Philippines.<br>Ministry of Economy, Trade and Industry, Japan, (METI) and ALIC gave lectures.<br>Also participated by Cambodia, Laos, and Vietnam. |
| AEN Conference 2002 | Tokyo,<br>July 24-25, 2002 | AEN Promotion Committee (Ministry of Economy, Trade and Industry, ALIC, etc) | 200 | 12 AEN member countries participated, and lectures were given on e-Learning situations, followed by discussions and announcements of experimental projects of the year.<br>Japan presided over all proceedings as secretariat. |
| The 1st National Conference on e-Learning | Manila<br>August 1-2, 2002 | ITECC (Filipino agency responsible for AEN ) | 900 | A Filipino domestic conference. An exhibition was also held participated by about 10 companies. ALIC also participated. |
| Comtech / Commart Thailand 2002,<br>e-Leader Seminar | Bangkok<br>October 18, 2002 | NECTEC and others | 40 | A seminar was held as one of the exhibitions relating to IT for domestic participants.<br>Lecturers from METI, Japan, also participated. |
| Korea e-Learning 2002 | Seoul<br>November 14-15, 2002 | Korean government, KELIA | 400 | A Korean domestic conference. Accompanied by an exhibition participated by some 10 companies.<br>Two foreign lecturers participated. ALIC lectured on AEN. |
| International Seminar on e-Learning | Kuala Lumpur<br>January 21-22, 2003 | National Committee on e-Learning | 70-100 | Operated mainly by Multimedia University (MMU).<br>Foreign lecturers from Japan and Singapore participated.<br>METI, Japan, and ALIC gave lectures.<br>Technical seminar was held on the 2nd day. |

Source: multiple reference materials

# 6. International Activities: International Efforts and Promotion Activities within ASEAN, such as e-ASEAN

## 6.1 Overview

As effective measures to aid human resource education in developing countries, e-Learning has long since been used by international organizations or international networks. International university associations also are interested in e-Learning as a part of educational exchanges and reinforcement of cooperation.

In international organizations, though positive efforts are being made to resolve digital divide between advanced and developing countries, few activities are performed for practical usage of e-Learning.

Primary e-Learning cases found among international organizations are listed below:

World Bank operates a program named "Global Development Learning Network (GDLN)" using a satellite and the Internet.

United Nations Development Programme (UNDP), International Labor Organization (ILO), and Asia-Pacific Economic Cooperation (APEC) are conducting e-Learning related activities, focusing on human resource development in developing countries.

Southeast Asian Ministers of Education Organization (SEAMEO) is engaged in activities related to e-Learning at one of its affiliated centers.

Asian Development Bank (ADB) plans to provide developing countries with a human resource development program called "Center for Learning, Information, Communication, and Knowledge (CLICK)."

In e-ASEAN, however, few programs utilizing e-Learning were realized for such reasons as shortage of funds, though it was in the initial plan.

Most activities conducted by the university federation do not advance more than sharing information at international conferences held to discuss this issue. However, activities such as UNIVERSITAS21 have been started jointly by enterprises and colleges to run e-Learning business.

## 6.2 Major cases

E-Learning related activities performed by international organizations (including international cooperative activities) and by university associations in Asia are grouped and listed as follows:

| Organization/ Project | Type/ Characteristics | Activities related to e-Learning | | | |
|---|---|---|---|---|---|
| | | Providing | Planning | Sharing Information | Remarks |
| World Bank | International organization | x | | | Uses GDLN to provide e-Learning to developing countries. |
| e-ASEAN | International organization | | x | | Partially halted due to financial shortage. |
| SEAMEO | International organization | x | | x | Supports member countries through human resource development using e-Learning, and through survey research. |
| UNDP | International organization | x | | | Provides multiple human resource development programs. |
| UNESCO | International organization | | x | x | Planning to develop training materials as a project of Bangkok office. Mainly funded by the Japanese government. Creates guidelines for remote education teachers training. |
| ILO | International organization | x | | | |
| ADB | International organization | | x | | Planning CLICK. |
| APEC | International organization | x | x | x | Performs extensive activities. |
| UNIVERSITAS21 | University Association | x | | | Cooperates with Thomson Learning |
| AUN | University Association | | x | | Planning e-Learning. |
| APRU | University Association | | | x | Holds conference once a year. |
| AAOU | University Association | | | x | Holds conference once a year. Topic for 2003 is e-Learning. |

### 6.3 Future Prospects

E-Learning related activities conducted by international organizations as part of aids in human resource development for developing countries have been traditionally employing synchronous distance lectures using videoconference systems, but presently the number of activities are increasing which use asynchronous WBT systems. In developing countries too, efforts for e-Learning have already started mainly at universities, and needs are increasing for more sophisticated e-Learning systems and operational support.

Although it is not mentioned here, we see an increasing number of e-Learning activities as part of education aid projects, from among aid projects hosted by bilateral aid organizations located in Europe or North America. In Japan, Japan International Cooperation Agency (JICA) is planning to create a synchronous remote education system called "J-Net".

Thus, there are various international activities related to e-Learning, but each has its own characteristics in accordance with each involving organization's particular purposes.

Up to now, activities tended to be experimental and most of them terminated within a short period of time, but such activities as GDLN are continuously conducted as "infrastructure as mechanism", it seems that they are gradually securing substantial implications. Maintaining consistency among all different activities is not easy, due to differences among target countries, involving organizations, and methods of implementation. However, some mechanism may be necessary to properly concatenate each one's advantages and outcomes.

# 7. Direction of Pilot Experiments

## 7.1 Background of Experimental Projects

At the establishment of Asia e-Learning Network (AEN), the following three objectives are set as primary issues:

- Share information on the latest e-Learning trends and technologies
- Promote interoperability and resource sharing of e-Learning systems and contents
- Promote the spread of knowledge on the effective use of e-Learning

An international conference "AEN Conference 2002" was held in July 2002, which was presided by METI and Advanced Learning Infrastructure Consortium (ALIC), to definitively inaugurate AEN. An agreement was made at the conference that each member country would address itself to following activities:

- Build closer cooperation among government, academic and business sectors in each country. Participants are expected to distribute information on AEN activities to the people concerned in their country.
- Carry out joint projects and share the results with member countries.
- Promote the exchange of information, know-how, experiences, and best practices in real or virtual form.

2002 was the first year, and activities that have been planned according to the above-mentioned objectives constitute this year's experimental projects.

Most of the international projects relating to e-Learning so far were only for the establishment of communication infrastructures or short-term exchange of lectures. Thus, AEN attaches great importance to the acquisition of know-how for system/content development and interoperability, to enable other organizations to deploy the outcome and know-how in parallel. After research and analysis of e-Learning related activities done by domestic and foreign universities and IT human resource development organizations, and as a result of discussions with major organizations which are experienced in e-Learning fields and considered capable of independent activity, six pilot experiments were successfully developed by Japan and five counterparts consisting of Singapore, Malaysia, Thailand, Philippines, and Vietnam.

The characteristics of AEN experimental projects are as follows:

(1) Project covering extensive area including six countries

This is the first year of AEN inauguration, and six countries which constitute about half of all the 13 countries are directly participating in experimental projects, making them large-scale international projects.

(2) Collaboration among government, academic and business sectors

Traditionally, international e-Learning experiment projects have been conducted between universities. In addition to this kind of projects, an enterprise-based cooperative relationship is sought through the enhancement of e-Learning systems development and its operation, and the projects are started while the cooperative relationship is being established between colleges and enterprises. Other projects were also developed, which were conducted jointly by the Thailand government and a Japanese enterprise, in

order to aid data processing engineer test education required by the government.

Relationship of government, academic and business sectors to constitute the projects is shown in the following figure.

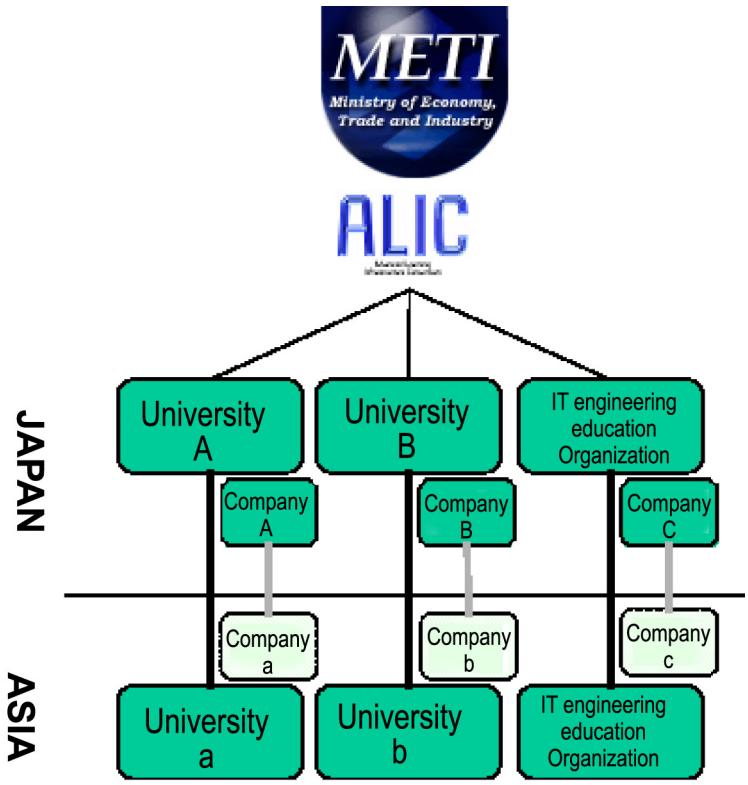



Figure 7-1 Basic models for experimental project promotion

In reality, however, e-Learning related enterprises in Asia are still scarce in number, and situations vary depending on each project. For some projects, Japan aided largely the system operation, and for others, local universities or research and development departments within universities are assigned to them.

(3) Strengthened cooperation with e-Learning related entities through pilot experiments.

To perform pilot experiments, cooperations have been realized with not only universities in target countries, but also local e-Learning related organizations and major agency's staff, which were beneficial for "enhancement of cooperations among consortiums from each country" which is the objective of AEN. Examples include Singapore, Philippines, and Thailand. For Malaysia, aids were extended to establishment of local consortium.

(4) Conformance to SCORM in every project

WBT courses were developed and implemented in conformance to SCORM, which have been accepted as the de facto standard of WBT systems. This was the first experiment for a cooperative project conducted by multiple Asian countries.

(5) Synchronous e-Learning blended with asynchronous one

In an actual learning environment, it is desirable that face-to-face classes or

synchronous e-Learning is blended with asynchronous e-Learning to enhance the effect of learning, instead of operating asynchronous e-Learning alone. Although conformance to the WBT standard, SCORM, was emphasized through the projects, videoconference systems using satellite communication or a landline were utilized in some projects.

## 7.2 Summary of Experimental Projects

The details of each pilot experiment are not described here, since resulting reports were created for each of them, but its overview may be summarized as follows: This overview is summarized from the viewpoint of instructional design, and the contents are grouped into "educational engineering point" and "system point".

Table 7-1 Summary of experimental projects from viewpoint of instructional design

| | | | | | | |
|---|---|---|---|---|---|---|
| Japan | Keio University | University of Tokyo | Tokyo Institute of Technology | Aoyama Gakuin University | Waseda University and Kyoto University | (METI) |
| | Hitachi, Ltd. | IBM Japan Ltd. | Hitachi Electronics Services Co., LTD. | Nihon UNISYS, LTD. | NTT-X, Inc. | ITEC, Inc. |
| Asian counterparts | [Vietnam] | [Singapore] | [Thailand] | [Philippines] | [Malaysia] | [Thailand] |
| | Vietnam National University and Hanoi University of Technology etc. | Nangyang Technological University (NTU) | Asian Institute of Technology (AIT) | De La Salle University (DSU) | Multimedia University (MMU) | Thai Government NECTAC |
| Subject to be learned | Non-skill type subject including social scineces (Example: Interactive Fieldwork) | "e-government" and "e-commerce" | "Signal Processing theory", "VLSI design theory" etc. | "Production planning (MRP) system exercise" | "Image processing", "Multimedia contents processing", "Java technology" | "Preparatory course for Fundamental Technology Engineer Examination" |
| Learning method | WBT | WBT, and videoconference system | satellite videoconference system and WBT | WBT and asynchronous collaborative learnings | WBT | WBT |
| Analysis | | | | | | |
| Design | | | | | | |
| Development | | Validation of effectiveness of SCORM based WBT system | Experiments to automate the generation of a synchronous learning contents | Verification of effectiveness of asynchronous collaborative learning methods in international environment | Verification of interoperability | Verification of contents development methodology corresponding to in Asian languages |
| Practice | Experiments on relation between degrees of understanding and changes in learning materials quality and quantity | Verification of effectiveness of CSCL development and evaluation of training evaluation methods, and identification of problems on CSCL between different cultures | Examination of completeness and necessity of enhancement of SCORM-based data within WBT learning and exercise | Verification of possibility of realizing e-learning environment in universities in different countries | Examination of validity, performance, and usability of WBT system | Verification of contents management between two countries using identical platforms |
| Evaluation | Experimetns on contents learning of non-skill transfer courses | Verification of effectiveness of integration of WBT system and videoconference system | Experiment to extract mentor support information in asynchronous learning | Verification of possibility of realizing international standardization criteria (on collaborative workplace) in asynchronous collaborative learning | Standardization of WBT system and verification of learning effect | Comparison and examination of learning effect of preparatory course for examinations in both countries |

Note1: Descriptions are simplified for some projects.
Note2: Points are different for each type enclosed by frame.
that is: regarding education technology / regarding system

Source: Advanced Learning Infrastructure Consortium (ALIC)

## 7.3 Future Perspective

With the establishment of AEN, this year saw a ever greater attention to e-Learning in Asian countries.

As described above, organizations of e-Learning related entities is progressing in every

country. ECC in Singapore and ITECC in the Philippines are bringing their consortiums into full-scale activity. In Malaysia, an e-Learning consortium was formally inaugurated in the fall of 2002. In Thailand too, an organization of consortium seems to have begun. In Korea, though it is not a target of pilot experiments, a consortium has already been inaugurated, and in China a committee is continuously working for standardized technologies.

Formerly, leading organizations (mainly universities) only applied e-Learning experimentally in developing countries, but as e-Learning begins to attract attention, more and more IT enterprises in addition to educational organizations participate in the e-Learning market in Southeast Asia too. In view of such movements, it may be highly evaluated that AEN was established to contribute to Asian collaborations by providing pilot experiment projects or international conferences.

The initial objectives of this year's experimental projects, which were conducted as the AEN's main activity, have been attained in a general sense, since it covered many countries in an extensive area, conducted developments based on SCORM and thus assuring the interoperability and increasing the possibilities of cooperating with other organizations or activities. Furthermore, local e-Learning related organizations cooperated in conducting the projects.

Through this year's activities, both possibilities and challenges were understood by practicing e-Learning course development that is conformant to SCORM, not only in Asian counterparts but also in Japan.

However, the status and future needs for both Asian counterparts and Japan, which were determined through this year projects, should be taken into consideration when planning future AEN activities.

The following figure is centered on "possibility of increase of participations" and "availability for participation" to summarize AEN activities: As mentioned earlier, while overall improvements are progressing, there still exist such disparities in Asia. This year, in focusing on the following (2) level, pilot experiments were conducted together with top level organizations from each country that seem capable of exercising e-Learning.

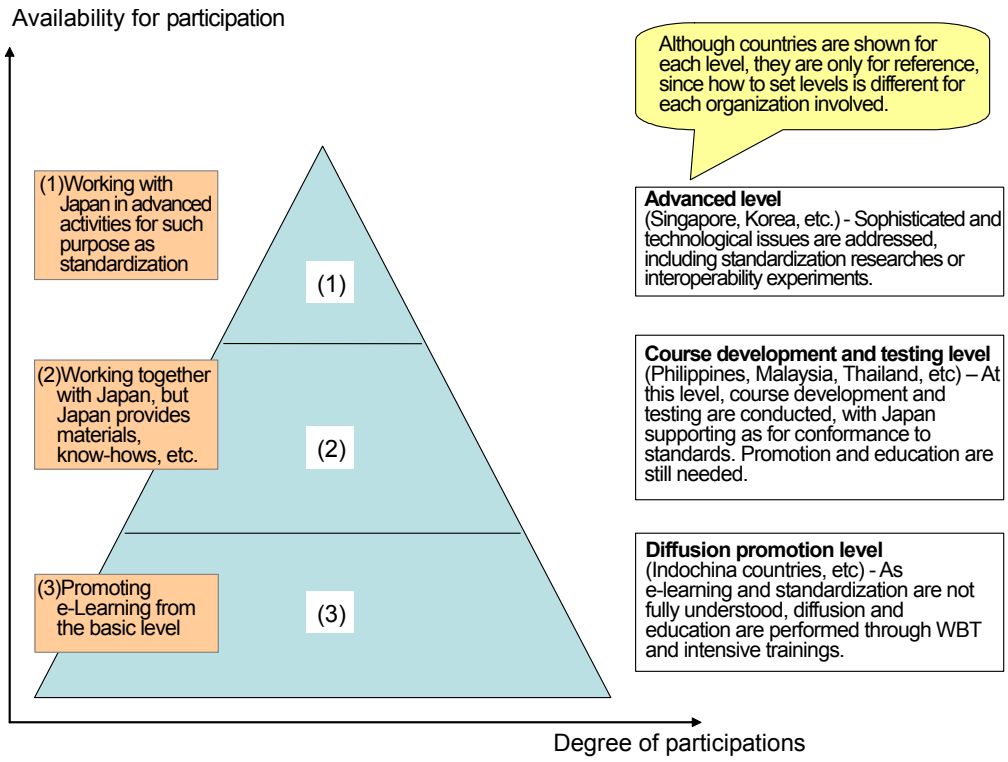



Figure 7-2 levels of AEN activities

The following options are suggested for future activities.

(1) Efforts for promotion of diffusion and enhancement of international standardization in cooperation with leading organizations (connected to (1) level).

In cooperation with leading organizations in Singapore, etc., fields are addressed whose results are applicable to many countries and that can only be addressed by countries well advanced in those fields. Those fields include, for example, researches and developments in innovative areas such as the creation of guidelines for quality standards and instructional design which are currently attracting attention and are also common issues in Asia, as well as cooperative learning. On the other hand, it may be possible that these outcomes are converted into digital learning materials and offered online to AEN member organizations. In order to promote practical standardization, activities including Plugfest are promoted in cooperation with the above (1) level organizations.

(2) Increase and enhancement of target and participating organizations for pilot experiment projects (reinforcement above (2) level)

Based on pilot experiment projects for this year, participation of new organizations and countries are encouraged. Currently, the subject of pilot experiment projects is up to each organization involved, but capabilities to complement and cooperate each other regarding the contents are issues yet to be resolved, though interoperability has been technologically assured. For this reason, it may be effective that most required fields are determined in the entire AEN, and appropriate organizations are assigned to development and operation.

(3) Promotion of diffusion and education of e-Learning (improvement of above (3) level)

In many countries to whom e-Learning is a new issue, it is still necessary to practice diffusion and education at both (2) and (3) levels. For example, at the (2) level, diffusion and education are required in specialized areas, such as technical seminars concerning SCORM to promote standardization. On the other hand, in (3) level countries including those in Indochina, activities are required such as seminars for deeper knowledge and interest in e-Learning itself, before holding technical discussions.

The above-mentioned options should be put into practice in combination, according to the specific circumstances and any pressing needs.

Finally, new issues are described for Japan to address as an AEN secretariat, in order to promote AEN activities and continuous evolution.

As described above, though it was the first year, many activities were conducted including 6 pilot experiment projects and seminars in various countries. E-Learning projects and seminars are also provided by some international organizations other than AEN. Currently, the environment has not been established to obtain the huge amount of relative information and to take advantage of the effective usage of their outcomes.

In the future, in order for Japan to advance AEN activities in cooperation with each country's contact office, it is desirable to collect relative information, as well as to develop a "total mechanism" which supports effective and strategic utilization of AEN activities and their outcomes to create new activities and additional values. Requests regarding these issues have already been submitted by AEN countries.

One of the important activities, which must be started as soon as possible to satisfy these needs, may be the construction of "AEN portal" to complement the current AEN Web site.

Major functions of the AEN portal are listed as follows:

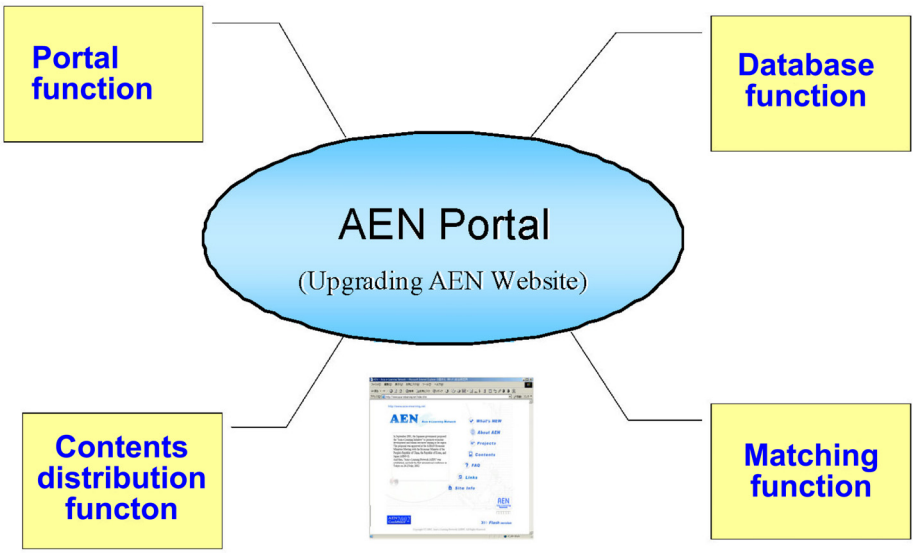



Figure 7-3 Image of "AEN Portal"

- Portal function: AEN related events, member organization information, non-AEN related events, etc.
- Database function: Specific information, specialist information, etc. on member organizations
- Function to provide contents: Contents, outcomes from AEN activities, independent WBT contents provided by member organizations, contents provided by ALIC (for example, standardization technology learning contents, learning contents for implementation of e-Learning, etc.)
- Matching function: Matching is supported for the cooperative development of courses between providers and requesters of e-Learning.

Building a "portal site which serves also as database" with the above-mentioned functions, including search, register, and management, will provide quick access to the related events, projects, and information on related organization and specialists. It will also help greatly to enhance the capabilities of the member organizations by providing them with high-quality contents, to create new activities, and to match the providers with the recipients.

Among numerous e-Learning related activities in Asia, AEN is a conspicuously innovative international collaboration, being an establishment conducting promotion of e-Learning standardization and development of many contents. In the future, in responding to the needs from related organizations, continuous construction of prospective models are required.

The need for e-Learning in Asia is increasing, and demands for AEN establishment are growing. From now on, based on achievements and experiences obtained this year, it is necessary to immediately work out future activity plans led by AEN Secretariat in Japan in cooperation between Japan and its counterpart countries in Asia.