

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

**(Country Specific Report - Malaysia)**

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

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

#### 1.1.1 Outline of the Internet

According to the statistics of ITU (2001), the number of Internet users in Malaysia is about 6.5 million, indicating a high Internet diffusion rate of about 27.31%. Comparing this figure with 1999 ITU investigation results, which indicated that the number of Internet users was 2.8 million, reveals the significant growth in the number of Internet users in this country.

However, individual Malaysian users have limited Internet connection methods, either ISDN or dial-up. For this reason, Malaysia can only provide narrow band connections though demand for broadband connections is growing throughout the world.

High-speed CATV connection service, widely used in other countries, is not expected to be popular in Malaysia because CATV is not widely utilized. Slow connection is one of the reasons why there is no rise in the usage of B2B and thus, one of future tasks of Malaysia is to provide broadband connections.

#### 1.1.2 Outline of ISP

There are only a small number of licensed Internet Service Providers (ISP) in this country; therefore, various types of Internet connection services are not provided in Malaysia due to the low competition rate among the providers. The Malaysian government, which does not seem to favor intensive competition among ISPs, is reluctant to license new providers. The number of main ISPs in Malaysia as of 2001 is six, according to the investigation reported by ITU.

### 1.2 Status of Education and Training System

#### 1.2.1 Higher Education

In Malaysia, the educational system generally consists of primary (six years), lower secondary (three years), upper secondary (two years), post secondary (two years), and higher education (two to four years), each of which requires national assessment examination upon completion. Grades obtained in the first intermediate education courses basically determine the students' further courses. The second intermediate course allocates students, based on students' desires and aptitudes, to academic courses (art, science), technical courses, and vocational courses. Higher education in Malaysia consists of university, polytechnic, and higher education organizations, including vocational college (e.g., teacher training school).

Malaysia does not have a compulsory education system but provides eleven years of education, up to the upper secondary, free of charge. Thus, 100 % of children in Malaysia go to primary school and 90 % go to upper secondary school (as of 2000). The percentage of students advancing to universities is also high at 22 %, and the government has targeted an advancement rate of 35 % by 2005.

The number of higher education organizations is 623 as of 2000, in which there are 24 universities (consisting of 15 public universities and 9 private universities) and the rest, vocational colleges.

##### (1) National University

In Malaysia, there are 14 national universities and one international university, including the oldest university in Malaysia, University of Malaya, established in 1949. The number of students attending the national universities was 84,000 as of 1990, and during the next ten years from 1990 to 2000 the number increased to 270,000 as the government started making efforts in education according to the Sixth and Seventh Malaysia Plans. That is a 3.2 times increase over 1990. When classifying students by major, there is increase in students majoring in science, engineering, and IT.

## (2) Private University

For a long time, only public universities had been licensed in Malaysia. However, in accordance with the deregulation of education for the purpose of improving the level of higher education, the establishment of the first private university in Malaysia was approved in 1996. Specifically, Telekom Malaysia, the major Malaysian communication enterprise, was asked by the Ministry of Education to establish a private university and thus established Universiti Telekom in 1997. It was the first private university in Malaysia. Though being a private university, Universiti Telekom is supported by 100% funding from the biggest national enterprise in Malaysia, so it is virtually run by national policy. Universiti Telekom provides an education mainly in telecommunication and information technology fields. Thereafter, other engineering universities were established in order to cope with the shortage of engineers, including Universiti Tenaga Nasional established by Tenaga Nasional, a power company, and Universiti Teknologi PETRONAS established by Petroliaam Nasional Berhad (PETRONAS), an oil company. In accordance with requests from the government, such companies have shifted the role of their R&D department to those universities. There are now nine private universities, including Malaysia University of Science and Technology and Multimedia University (MMU) located in Cyberjaya (supported by 100 % funding from Telekom Malaysia).

### 1.2.2 Vocational Education

In the promotion of the National Development Plan in Malaysia, the Economic Plan Unit (EPU) of the Prime Minister's Department plays a central role with the support of other central government departments and agencies and related responsible government offices. In the past ten years, the government has placed emphasis on the fostering of human resources, as clarified by a number of policy recommendations, such as the speech by the prime minister Mahathir made in 1991 of "Malaysia: The Way Forward (Vision 2020)", "Second Long-term Plan (OPP2)" from 1991 to 2000, and "Seventh Malaysian Plan" from 1996 to 2000. These political announcements placed emphasis on the necessity of further fostering of human resources, a skilled and highly productive labor force in particular, in order to sufficiently support the National Development Plan, maintain and improve competitiveness in Southeast Asia regions and the global market.

Recently, the policy of fostering human resources puts emphasis on the development of vocational education and training. National political announcements, particularly the report by the Cabinet Committee in 1991, have presented specific strategies such as the expansion of the vocational education and training system, the improvement of its readiness, the expansion of the role of the private sector, and the improvement of infrastructures of the labor force suitable for future training. For the budget for fostering human resources, "Seventh Malaysia Plan (1996 - 2000)" has allocated 15.4 % of the total amount of the development budget to education and training, 12.9 % of which (i.e., 1,303,300,000 RM, 3.5 times larger than that of Sixth Malaysia Plan from 1990 to 1995) was allocated only to job training.

Such vocational and job training is performed by various public and private training organizations and training schools. In the public sector, most vocational training programs are performed by four main organizations of the Manpower Department of the Ministry of Human Resources, MARA of the Ministry of Entrepreneur, the Youth Section of the Ministry of Youth and Sport, and Technical Education Bureau of the Ministry of Education. These organizations are responsible for about 220 education organizations performing some pre-employment vocational education and training.

"Seventh Malaysia Plan" also plans to further provide such education organizations to foster a labor force having advanced skills. Central government offices such as the Ministry of Home Affairs and the Ministry of Defense and provincial governments are also responsible for the training centers for specific groups.

In order to rationalize and adjust various training activities in Malaysia, National Vocational Training Council (NVTC) of Ministry of Human Resources prepares a nation-wide vocational skill standards and qualification system. Efforts for bridging the gap between the provided training and actual needs of industrial fields are mainly performed by developing National Occupational Skill Standards (NOSS). Providing those who have satisfied specific requirements of NOSS with Malaysia skill certificates through the "Skill Certification" program also reduces such gaps.

### 1.3 IT Human Resources Required

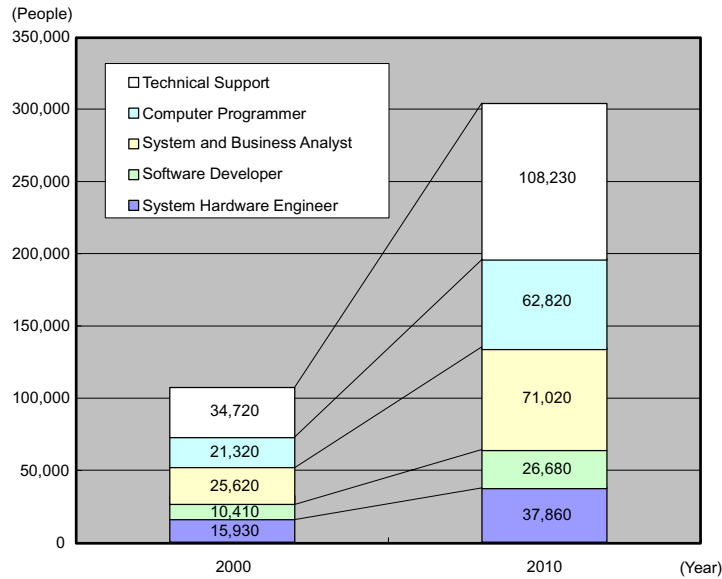
#### 1.3.1 Outline of IT Human Resources

The greatest challenge to "Multimedia Super Corridor (MSC) vision" (which will be described later) promoted by the government was how to secure the human resources required to achieve this project. This challenge has been gradually overcome by the government's efforts after the late 1990's to actively foster IT-related human resources (e.g., establishment of Multimedia University). As the workforce increased from 8.3 million to 9.2 million from 1996 to 2000, the ratio of knowledge-based workers has increased from 11.9 % to 19.0%.

However, the Multimedia Development Corporation (MDC), with jurisdiction over MSC, estimates that the required number of new knowledge-based workers in 2005 will be 107,940 (30,000 of which will be needed by MSC) while estimating that the number of knowledge-based workers (e.g., future graduates of universities) newly supplied in the same year will be 94,821. This demonstrates the fact that the shortage of knowledge-based workers in the next five years has not been overcome yet.

In order to reduce the shortage, the Malaysian government, which has been working on the promotion of the fostering of IT-related human resources, permits foreign IT technical experts to be temporarily hired. In Malaysia, foreign workers had been prevented from being hired in specialized fields by "Prohibition of Working in 134 Technical Jobs by Foreign Technical Experts" issued by the Ministry of Home Affairs in February 2000. Hiring foreign technical experts satisfies the market needs and helps Malaysian workers to inherit the foreigners' techniques. The government also provides preferential tax treatment or the like in order to call back Malaysian knowledge-based workers who flowed into foreign countries.

Smart School, one of the main applications of MSC, has an objective of improving fostering of human resources and education systems in Malaysia.



Source: Multimedia University

Figure 1-1 Forecast of IT Workforce Demand in Malaysia

### 1.3.2 Outline of IT Human Resource Education

In Malaysia, the following policies are provided in developing IT related human resources.

#### (1) Short-term policies

- In three years, private and public higher education organizations shall create 25,000 students majoring in computer, art, design, and IT.
- Foreign intellectual workers are permitted to enter Malaysia without any limitation.
- Incentives are provided (e.g., by tax system) to Malays returning to Malaysia who had flowed to foreign countries.

#### (2) Mid- and Long-term Policies

- MSC certifications shall be given to higher education organizations to establish a system through which IT human resources can be supplied nationwide.
- Four universities (MMU, Universiti Putra Malaysia, one of national universities in Malaysia, Universiti Tenaga Nasional) shall be incorporated in MSC.
- The rate of advancement to university shall be improved.

As part of a project to improve IT literacy, the Ministry of Education provides training for schoolteachers. Specifically, this project collects few teachers representing each school to be trained, and they can return to their schools to train their colleagues. During the past few years, this project has trained 60,000 teachers.

### 1.4 E-Learning Market Trends

Information unavailable.

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

### 2.1 Multimedia University (MMU)

<http://www.mmu.edu.my/>

#### 2.1.1 Overview

In accordance with the request from the government, MMU was established in July 1999 by 100% funding from Telekom Malaysia for the purpose of fostering IT technical experts responsible for the MSC project. The number of students in the two campuses (Cyberjaya, Melaka) as of 2000 is about 12,000, among which 6,000 students study in the Cyberjaya campus. Many graduates work in IT related companies and receive high evaluation.

MMU accepts students irrespective of ethnic groups and does not apply the Bumiputra policy. Thus, the student body of this university includes 50% or more students of Chinese descent. There are seven faculties, four of which are located at the Cyberjaya campus (Engineering, Information Technology, Creative Multimedia, and Management) and three of which are located at the Melaka campus (Information Science and Technology, Engineering and Technology, and Business and Law). This university uses a practical education method utilizing advanced technologies, including lectures provided through IT devices and educational material provided online.

This university also has an incubator for fostering high-tech venture companies. Companies in the incubator can use the infrastructure in MSC and receive support for software infrastructure (e.g., tax system, legal system), and support for clerical service (e.g., company registration). Once included in the incubator, the company must become independent as a legal body within two years. As of March 2000, the incubator included 41 companies, such as companies for software development, contents development, education material development, and creation of animation.

This university has its own R&D funds totaling 10.5 million RM (about 300 million yen). It also uses a governmental supporting scheme for research and test, in which designated universities can use a part of 1.6 billion RM (about 50 billion yen) within five years. This allows MMU to put effort into R&D activities. The university has 19 research centers where research is performed for various subjects, such as high-speed broadband, network, virtual reality, computer graphic, artificial intelligence, e-commerce. The Cyberjaya campus also has a business-academia collaboration with top global companies such as NTT, Ericsson, Nokia, and Intel.

#### 2.1.2 Activities Related to e-Learning

From July 1998, Multimedia University has been providing e-learning programs. The programs are provided in English with a school tuition of 145 RM per credit. This university has developed a unique e-learning engine called Multimedia Learning System (MMLS) for use in the program.

##### (1) Courses

Bachelor of Management (students can select from among 41 subjects, which provide 122 credits)

##### (2) Delivery Format

###### (a) Web-based, using Multimedia Learning System (MMLS)

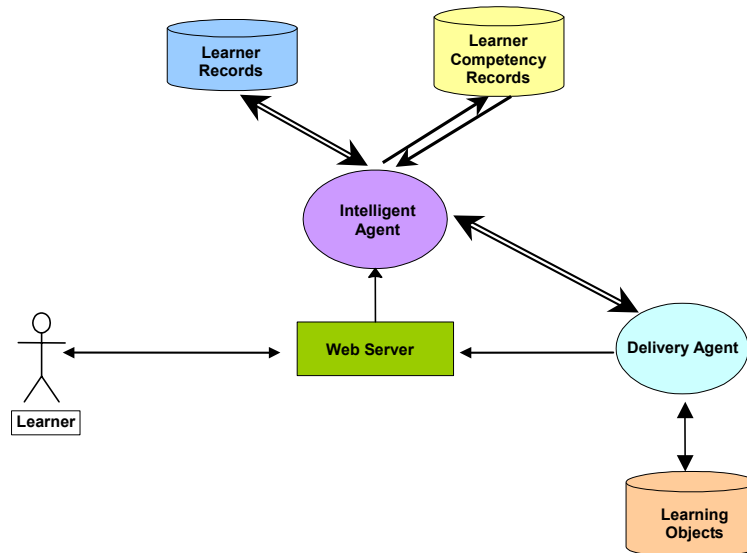
MMLS has various functions such as registration of staff and students, management of the learning contents, templates for quizzes, intelligent function, Short Notes, e-mail, online chatting, news group, bulletin board, etc. MMLS conforms to SCORM standards.

MMLS consists of two parts: engine and contents. The engine includes an intelligent function in recording and analyzing a student's study pattern, allowing educational material to be provided for the student depending on the student's ability. The student may use the template to take a quiz and receive the results immediately. MMLS is platform-independent and can be integrated with any type of database system.

###### (b) Videotapes and cassette tapes

###### (c) Communication methods: telephone, e-mail, posting, and fax





Source: David Asirvatham (Jan. 2003), materials submitted to "International Seminar on e-Learning 2003"

Figure 2-1 Outline of MMLS

### (3) Facilities in Distance Education Center

- Each terminal is connected via wireless LAN.
- Several TV cameras are installed, that can be angled in different directions when used for a live broadcast.
- In order to control the five remote sites, there is a multipoint control apparatus, function for switching a studio screen, and a mixer for audio control.
- A terminal at a remote site can simultaneously display both a live broadcast of a lecture and a screen on which a teacher writes down some lecture points.
- A server working in an on-demand manner is provided so that students can participate in past lectures.

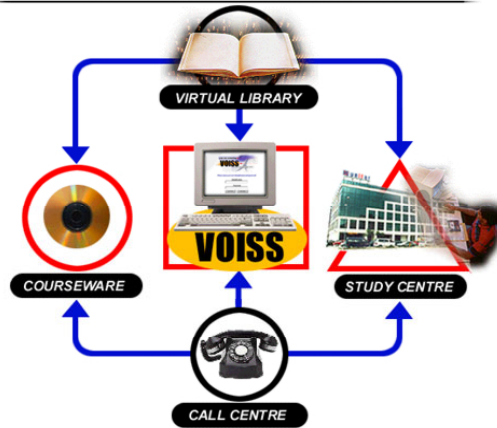
## 2.2 Universiti Tun Abdul Razak (UNITAR)

<http://www.unitar.edu.my/main.html>

### 2.2.1 Overview

UNITAR was the first virtual university approved by Ministry of Education in December 1998. This university provides academic degrees to students using e-learning by providing courses for business and information technology through the use of advanced multimedia, communication, and an electronic learning environment. Educational material is provided by the combination of CD software and online format.

## UNITAR LEARNING MODEL



Source: UNITAR Website

Figure 2-2 UNITAR Learning Model

### 2.2.2 Activities Related to e-Learning

#### (1) Courses

Up to now, 7,500 students have participated in the following 12 programs (among which seven programs are accredited by National Board of Accreditation).

- 1) Certificate in Business Administration (CBA)
- 2) Certificate in Information Technology (CIT)
- 3) Certificate in Management (CMgt)
- 4) Bachelor of Business Administration (BBA)
- 5) Bachelor of Information Technology (BIT)
- 6) Bachelor in Information Systems (BIS)
- 7) Bachelor of Management (B Mgt)
- 8) Master of Business Administration (MBA)
- 9) Master of Information Technology Management (MITM)
- 10) Master of Information and Multimedia Technology (MIMT)
- 11) Master of Science (Education) (by research)
- 12) Ph.D. (Education) (by research)

Accredited by National Board of Accreditation: 1), 2), 4), 5), 8), 9), 10)
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The following four programs are new programs awaiting approval to be introduced.

- Executive MBA in Strategic Marketing (EMBA)
- Master of Science (IT) (by research)
- Ph.D. (IT) (by research)
- Master of Information and Telehealth Management

These courses allow students to proceed to the next step in accordance with his or her progress of learning; therefore, some students may finish a course before a semester is completed.

#### (2) Delivery Format

##### (a) Materials

Educational materials are provided by the combination of CD-ROM and web material. Up to now, more than 300 subjects have been developed into 21 types of CD material and 20 or more types of web-based material. Generally, advanced level courses are provided using web-based educational materials while courses that are relatively lower in level are provided using CD-ROM.

(b) Virtual Online Instructional Support System (VOISS) Ver.2.0

This system is a course management system used by both teachers and students. This system includes various modules and functions such as on-line tutorial, forum, FAQ, e-mail, bulletin board, notification, assignment, exercises, and examinations. Materials other than online tutorials are performed asynchronously.

(c) Electronic library

A web-based virtual library is set up on the Web, and the students can access required papers and other materials from the Website. Information retrieval is also available through online databases such as ProQuest, ERIC, Euromonitor, and ABI/INFORM Global.

(d) Study centers

UNITAR has seven facilities called study centers or regional centers in Malaysia. Students may use equipments provided in the facilities such as classroom, personal computer, gym, library, amusement facility, and are able to have a meeting with a faculty adviser. The university also provides business academic degrees in Cambodia, so one study center is in Cambodia.

(e) Customer relations management (CRM)

CRM provides supports for students concerning various problems they may encounter concerning the content of their study, techniques, and personal issues. Different from the tutorials described below, CRM also supports students by enabling students to receive answers to questions from the teachers smoothly. Consultations for students are available through e-mail, telephone, fax, or the like. CRM provides an around-the-clock service.

(3) Others

This university provides three kinds of tutorials (a total of 21 to 24 hours of tutorials for one subject) to students because the university recognizes that tutorial is required for an increased educational effect in distance education. Assuming that an average student receives five subjects in one semester, then the student would have to participate in tutorials for a total of 120 hours (5 subjects times 24 hours) (i.e., less than nine hours per week).

Table 2-1 Tutorial System

<p>1) Tutorial in study center</p> <ul style="list-style-type: none"><li>- The face-to-face tutorial is conducted in the normal classroom setting.</li><li>- The first-year students receive a tutorial for 21 to 24 hours (all freshmen receive tutorials in the same way). The other students receive a tutorial for eight hours.</li></ul>
<p>2) Online tutorial</p> <ul style="list-style-type: none"><li>- Online tutorial is scheduled for four sessions, which means eight hours, per semester.</li><li>- When receiving an online tutorial, a student logs into the system at a predetermined time.</li><li>- A screen displayed on a personal computer is divided into the following three parts.</li></ul> <p>a) Main screen</p> <ul style="list-style-type: none"><li>- The main screen is used as the white used by the tutor. The tutor can write in this space and paste images or PowerPoint slides to display.</li></ul> <p>b) Image of the student</p> <ul style="list-style-type: none"><li>- This tells the tutor whether all his/her students have attended or not.</li></ul> <p>c) Space for questions</p> <ul style="list-style-type: none"><li>- This is the space for students to type questions or provide ideas and views via e-mail.</li><li>- The tutor can speak to his/her students, but the students can communicate with the tutor only by e-mail.</li></ul>
<p>3) Forum-type tutorial</p> <ul style="list-style-type: none"><li>- There are four or more forums in a semester which is considered to account for eight hours of normal tutorial.</li><li>- The tutor puts up a topic for discussion for about two weeks, and the students have to have a discussion on the topic. It is asynchronous.</li><li>- All students taking the course have to participate in the discussion at least twice in the period of two weeks. Their views are graded by the tutor.</li></ul>

#### (4) Future Development

UNITAR already has a campus in Cambodia and plans to have campuses in Indonesia, China, Bangladesh, and other countries.

### 2.3 Universiti Sains Malaysia (USM)

<http://www.usm.my/>

#### 2.3.1 Overview

USM is a national university located on Pinang Island that has been providing distance education since 1971. The School of Distance Education has been providing lectures utilizing IT, by using a videoconference system since 1988, for example. There are 20 bases in Malaysia. In 1995, a videoconference system called VideoNet was introduced. In 1997, an electronic library was provided. Since 1999, an online education has been provided.

#### 2.3.2 Activities Related to e-Learning

The introduction of VideoNet has allowed USM to provide lectures via the Internet. This has allowed students to receive lectures on their PCs without having to go out to various regional bases.

Students also can take examinations online and the results can be returned to the students immediately. However, all examinations other than open book ones are performed under the supervision of staff of each regional center.

USM plans to distribute the lectures to neighboring countries by using satellite communication in addition to the Internet.

### 2.4 Open University Malaysia (UNITEM)

<http://www.unitem.edu.my/>

#### 2.4.1 Overview

UNITEM is a private university exclusively for distance education that was founded in August 2000 by 11 national universities for the purpose of providing distance education. It is a university established for the purpose of improving the university advancement rate based on the government policy and has an objective of providing a higher education in a low-cost and easy-to-access manner. Now UNITEM has about 6,000 students and provides programs covering as many as 13 fields.

#### 2.4.2 Activities Related to e-Learning

##### (1) Courses

- Science & foundation studies
- Information technology & multimedia communication
- Business & management
- Education, arts & social sciences
- Engineering (civil engineering / mechanical engineering / electric engineering)
- Defence and security
- Public administration
- Executive diploma
- Secretarial science
- Others

## (2) Delivery Format

Lectures are provided using a platform, a uniquely developed e-learning system, OU Malaysia's Learning Management System. The LMS consists of two sections: a student support section and a bidirectional learning section.

### (a) Student support section

Students can access various services from each center (virtual). By accessing the applicable site, the students can download educational materials or assignments required for learning, and receive consistent services (e.g., transmission of completed assignment).

1) Course center <ul style="list-style-type: none"><li>- Course outline</li><li>- Course module (PDF file)</li><li>- Assignment</li><li>- Past examination questions</li><li>- Reference material</li><li>- Support</li></ul>
2) Communication center <ul style="list-style-type: none"><li>- SMS</li><li>- Chatting</li><li>- Videoconference system</li><li>- Archived discussion</li></ul>
3) Knowledge center <ul style="list-style-type: none"><li>- Personal knowledge</li><li>- Shared knowledge</li></ul>
4) Service center <ul style="list-style-type: none"><li>- Myprogress (follow-up)</li><li>- E-mail</li><li>- Search</li><li>- Help</li><li>- Electronic library</li></ul>

### (b) Bidirectional learning section

Self-examination
Learning object (for providing a method for solving a problem)
Comprehension level examination (for checking a student for the comprehension level after he or she has studied a learning object)
Discussion board (this is a function for allowing tutors and students to have a discussion. The students are guided so as to participate in the discussion in an easier manner)

### (3) Others

Online tutorial is provided in order to enhance the learning effect and to increase students' motivation so that more students can continue studying in the course. In the teaching manual for tutors, this university tells the tutors that the role of tutors in e-learning is to be a motivator for students, to be a specialist for a subject, and to help students to solve technical problems.

## 2.5 Universiti Teknologi MARA (UiTM)

<http://www.uitm.edu.my/index.html>

### 2.5.1 Overview

UiTM was formerly called Institut Teknologi MARA. It was established for the purpose of fostering Bumiputra human resources based on a government policy and was upgraded to university as UiTM in 1999 with the same purpose. UiTM has 19 campuses located in all provinces other than the Federal Territories of Kuala Lumpur and Labuan.

### 2.5.2 Activities Related to e-Learning

Since 1990, UiTM has been providing diplomas by distance education for the fields of management, finance, and business. From 1995 to 2000, 9,000 graduated from the university through distance education.

Lectures are provided by face-to-face seminars and study centers in regions, as well as by various services including online educational material, e-mail, fax, telephone, online discussion, online library.

## 2.6 Universiti Putra Malaysia (UPM)

<http://www.upm.edu.my/>

### 2.6.1 Overview

UPM was established in 1971 by the merge of the College of Agriculture Malaya with the Faculty of Agriculture, University of Malaya. In the initial stages, UPM provided courses for agricultural and forestry fields. Now UPM has 15 faculties covering computer science, business economics, and education, seven centers, and seven research institutes. It provides 69 bachelor courses, eight diploma courses, and 12 master and doctorate courses.

### 2.6.2 Activities Related to e-Learning

Since late 1999, UPM has been providing distance education for Bachelor of Communication. The university provides the contents with the technical support of an IT company called Mahirnet. Students can have online tutorials and communicate by chatting, e-mail, electronic forums, and the like.

## 2.7 National Institute of Public Administration Malaysia (INTAN)

<http://www.intanbk.intan.my/inbrief/inbrief.htm>

### 2.7.1 Overview

INTAN is a training organization exclusively for government employees established in 1959 for the purpose of improving the quality of Malaysian public departments. INTAN has a cooperative project with regional and international organizations through Malaysian Technical Cooperation Programme (MTCP).

### 2.7.2 Activities Related to e-Learning

As a host organization in Malaysia for J-Net which is an e-learning project of JICA, INTAN provides e-learning using a satellite. Through support from the Eighth National Plan, this project has a one billion RM budget under which plans are promoted to connect 220 schools, libraries, and hospitals to the network.

### 3. Advanced Activities

Information unavailable.

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

#### 4.1 Status of IT Policies

Malaysia has national vision called "Vision 2020 (WAWASAN 2020)." This vision states that Malaysia will be a member of advanced countries by 2020. In order to achieve this vision, the Malaysian industrial structure must be converted from the current manufacture-dependent structure to a knowledge-based structure. Thus, the government specifies the information multimedia field as a strategic field. As the first step, Malaysian Prime minister Mahathir disclosed the "MSC Concept" in August 1996, according to which Malaysia aims to become the "Silicon Valley" of Asia. This concept is the foundation of the country's IT policy.

"MSC Concept" is a national project according to which an administrative capital will be moved from the capital Kuala Lumpur to Putrajaya. MSC is planned to be constructed 20 km south-southwest of Kuala Lumpur, occupying a 15 km times 50 km region covering Kuala Lumpur, Putrajaya, and new Kuala Lumpur International Airport. It aims for becoming a global multimedia base for 21st century. Any company acquiring MSC status can receive preferential treatment based on the commitments by the Malaysian government (e.g., 10 years receipt of tax benefits, 100% investment tax credit).

The Malaysian government has been setting mid-term plans every five years for long-term economic development. In the Seventh Malaysian Plan, the government disclosed a national policy for IT for the first time. In this plan, the government recognized the significance of IT for the economy and established the National Information Technology Conference (NITC) as a government advisory organization for promoting IT industry. In the Eighth Malaysian Plan (Eighth Master Plan), disclosed in April 2001, the significance of IT was further focused upon by describing the provision of an intelligence-based society, the provision of the Internet to all citizens, the fostering of IT-related human resources and IT industry, the improvement of the productivity by IT, and the like.

In Malaysia, most IT users live in the area of the capital, causing a difference between the number of users in the capital area and rural regions. Thus, the "Eighth Malaysian Plan" discloses an objective of eliminating the digital divide by spending 1.1 billion RM (about 34.3 billion yen) to use satellite communications (particularly VSAT technique) to provide the Internet to rural education organizations or the like. The "Rural Internet Project" was also formulated, under which IT centers are provided at predetermined locations. Since 2000, the "Internet Desa Program", under which personal computers in post offices that can be used by general people are connected to the Internet, has already been started.

Furthermore, the "Infodesa" program was formulated to provide IT-related training and develop portal sites exclusively for rural regions, while providing a one-stop center for administrative services. The "Infodesa Center", the base for this program, plans to provide teleworks and distance education and initially allowed eight centers to be started under pilot projects.

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

##### 4.2.1 Overview

In order to promote MSC development and effectively guide the improvement of the environment, the following seven concepts have been established and have been a focus of attention as a specific IT promotion policy. One of them is for e-learning.

#### 4.2.2 Policies and its Details

(1) "Electronic Government" concept

This concept has an objective of providing improved access to administrative services by providing effective and efficient on-line administrative services. Specifically, a new capital, Putrajaya, and other administrative organizations in the country are to be networked to realize a paperless government. Now driver's certificates, car registration, payment for public utility charges, and the like are provided through the paperless government under a pilot project.

(2) "Multi-Purpose Card" concept

A multi-purpose card is a plastic card including an IC chip. This concept has an objective of developing a common infrastructure for multi-purpose cards.

According to this concept, one smart card stores various functions (e.g., census registration, driver's certificate, immigration control, insurance, electronic money, credit card) to realize a one-stop administrative service.

There are two types of multi-purpose cards: a government multi-purpose card and a payment multi-purpose card, and plans are to integrate the two cards in the future. Multi-purpose cards have already been distributed to 5,000 government employees and plans are to distribute them to all citizens.

(3) "Smart School" concept (e-learning)

This concept has an objective of improving the education system for fostering IT related human resources in order to cope with the information society. This concept plans to introduce an IT-based system through which study, evaluation, and management can be provided electronically (e.g., electronic educational materials are provided and clerical tasks in school are performed in an electronic manner).

(4) "Manufacture Support Network" concept (World-wide Manufacturing Web)

This concept has an objective of providing an improved environment in which manufacture activities in MSC can be efficiently performed with regards to research, design, development, engineering support, manufacture control, component procurement, and logistics so that manufacture industries all over the world select Malaysia as their Asian base.

(5) Borderless Marketing Center

This concept has an objective of using the multiethnic strength of Malaysia to provide an environment in which information service and customer service can be provided to foreign countries, especially Asian countries. Specifically, electronic publishing or translation services for Asian countries will be provided.

(6) Telemedicine

This concept has an objective of providing information regarding individual health care and the lifetime health plan and providing specialized medical care at home and abroad by allowing clinics located in remote regions to be connected to a medical care network and accumulate patient data.

(7) "R&D Cluster" concept

This concept has an objective of providing multimedia universities or the like in Cyberjaya to promote advanced R&D by the universities and companies.

#### 4.2.3 E-Learning Related Organizations

Malaysia has the following e-learning related organizations.

(1) National Steering Committee on e-Learning

This is a committee for promoting e-learning established by related ministries and universities in October 2002. Main activities of this committee include an international conference held by MMU in January 2003.



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

### 4.3.1 Overview

"MSC concept" is a plan to be executed in three steps of Phases 1 to 3. With regards to legal aspects, Phase 1 (1998 to 2005) plans to provide a basic legal framework for an electronic network called Cyber Laws. Phase 2 (2006 to 2010) plans to adjust Cyber Laws in accordance with international trends. Phase 3 (2011 to 2020) plans to provide an arbitration or mediation organization for solving cyber conflicts. Actually, the development of these plans will be accelerated because legal systems in other foreign countries have been rapidly developed.

### 4.3.2 Laws and its Details

Up to now, the following five laws have been formulated.

#### (1) "Amended Copyright Law"

For the purpose of supporting the success of the MSC concept, the copyright law formulated in 1987 was amended because the law needed to be reconsidered to take into consideration technological developments. This amended copyright law protects educational copyrighted work, entertainment works, as well as computer information conventionally protected under an author's copyright to protect copyrighted works with the consideration of a network environment. This law also includes regulations to penalize those who have unlocked copy protection devices such as those on a CD or the like.

#### (2) Digital Signature Act 1997

Digital Signature Act requires the appointment of a certified organization supervisor and the licensing system of certified organizations. This act also includes the regulations for the conditions for providing a license and application for revoking a license, penalties, and the issue of certification.

#### (3) Computer Crimes Act 1997

Computer Crimes Act includes regulations for punishing the illegal use of a computer in a crime. According to this act, an illegal access charge will be applied to a person when he or she has owned computer programs, data, or other information despite not having a right to own them and he or she cannot disprove the assumption that he or she has obtained them by an illegal access.

#### (4) Telemedicine Act 1997

Telemedicine Act stipulates the rules for distance diagnosis and related matters and the monitoring system by the country. Doctors who can provide an examination by distance medical care are designated by this act. Doctors living outside of Malaysia also can provide distance medical examination by being designated by this act.

#### (5) The Communications and Multimedia Act 1998

This act was formed by integrating the old Electricity Act with the old Broadcast Law, and adding regulations for on-line networks or the like. In accordance with this new act, the governmental system was reformed so that a government policy office formerly called the Ministry of Energy, Telecommunications and Posts was newly named as the Ministry of Energy, Communications and Multimedia (MECM). Jabatan Telekom Malaysia (JTM), which has conventionally worked as an external organization for executing policies and providing specific administrative clerical tasks (e.g., regulatory actions and licensing actions based on laws, certification of telephone fees and terminal devices, radio wave administration), has allowed its role to be inherited by the Malaysian Communications and Multimedia Commission (MCMC), which is more independent than JTM.

Electronic government laws and data protection laws are also under consideration.

#### 4.4 Vision

Information unavailable.

#### 4.5 International and National Conference

The following conference was held.

(1) "International Seminar on e-Learning"

Period: January 21 to 22, 2003