Impact of Information Technology, Higher Education and Research in Japan

by

Akira Hasegawa

Graduate School of Engineering, Osaka University

Suita, Japan

Abstract - Recent development of ultra-high speed multimedia communications is producing a large impact on education systems in Japan. The talk summarizes attempts of full utilization of this technology by the Japanese government and industry in the educational systems.

1.Introduction

The Ministry of Education, Culture and Sports (MECS) of Japan is primarily responsible to promote renovation of educational systems by means of full utilization of information technology. In an early stage of the development of the information technology, the Ministry together with the Ministry of Post and Telecommunications started an innovative concept of the University of the Air and materialized it in March of 1989. In response to the new development of multimedia services, the Ministry

established in this year a new agency called National Institute of Multimedia Education. In addition the government is accelerating installation of personal computers in elementary as well as in high schools. Meanwhile from the technical side, The Ministry of Post and Telecommunications has initiated new consortium project called STAR (Soliton based Total All optical communications Research) which I chair and supporting to develop ultra-high speed communications technologies. Industry, in particular, Nippon Telephone and Telegram (NTT) is also developing high technologies which enable ultra-high speed communications among computers. The talk summarizes some of these attempts.

2. The University of the Air

The University of the Air is an official university established jointly by the Ministry of Education, Culture and Sports and the Ministry of Post and Telecommunications in Japan. It is located at Wakaba 2-11, Mihama-ku Chiba. The admission to the university is open to anybody at the age of 18 and over. The University has general education department which offers three courses; Life Sciences, Industry and Society, and Humanity and Nature. The lectures are offered either by Television (UHF), Radio(FM) or by Tape for those locations where the radio wave does not reach (at this moment, the radio wave can reach only eastern part of Japan). The video/audio tapes can be seen/heard at study centers

located at 35 area throughout the country. The centers also provide schooling to those who are registered as a regular student. However, the courses can also be audited. Feedback from students may be made either by email or by fax. The University was established in 1989 and 9,952 have so far graduated with diploma. In 1997, the number of registered students counts a total of 65, 981.

3. National Institute of Multimedia Education (NIME)

National Institute of Multimedia Education was established by the Ministry of Education, Culture and Sports in 1997 through reorganization of the Broadcasting Education Development Center which was designated originally for the common use of national universities. The Institute, which is located at Wakaba 2-12 Mihama-ku Chiba is aimed to study contents and methods of education that utilizes multimedia and to disseminate the results. The Institute has four types of activities and three area of research and development. The activities include Space Collaboration System (SCS), which aims to establish a new high level education systems by means of satellite video transmission, Dada Base, which collects and summarizes media related educational materials, Development of Media Educational Materials, which helps to develop materials suitable for media education, and Education, which provides educational knowhows of media education. The research and development include network development primarily for satellite systems,

development of educational materials and application of media for education.

Star Project

In order to support the multimedia from the technical side, the Ministry of Post and Telecommunications has initiated a research project called STAR (Soliton based Total All optical communications Research) that supports a consortium involving leading telecommunication industries and universities. The projected whose planning committee is chaired by Akira Hasegawa was started in 1995. It aims to develop all optical terabit per second golobal network based on optical solitons which will serve as a ultra-high speed backbone for global multimedia.