

技術解説

The Prospects for Voice Communications in the 21st Century

Hae Uk Lee

(Korea Telecom)

Korea's telephone facilities now number 17 million lines, bringing us up to the rank of 9th world in terms of the size of our telecommunications network. And yet just 10 years ago, we were faced with a chronic telephone backlog with the demand for telephones far exceeding the supply. But due to an efficient government policy and the establishment of Korea Telecommunication Authority in 1982, we were able to successfully build a system for telephone business. In 1987, nationwide automation was successfully completed. And in 1988, the number of subscribers exceeded 10 million, and we had successfully cleared the telephone backlog. Thus we proudly entered the age of one telephone per household.

This was quite a turning point following 80 years with a telephone system in Korea. The remarkable growth of our telephone facilities during the 1980s was a rare example in the world of the rapid development of telecommunications.

With the goal of establishing a foundation for the telecommunications infrastructure and meeting the demands for voice communications, we will further endeavor to expand basic communications facilities and to build ISDN, Integrated Services Digital Network, in preparation for the advanced information society.

Especially with the rapid development of tele-

communications technology, there are emerging many state-of-the-art communications vehicles such as computer, facsimile, image terminal, etc. We will also develop and distribute a variety of services using these new communications technologies.

However, even with the expansion of non-voice communications services, the core of Korea Telecom's business is voice communications, and its importance and role will not fade in the future even when the information society has been fully developed.

As you all know well, the history of voice communications is in fact the history of telecommunications. And for more than 100 years, this has been the most friendly and convenient means of communicating for human beings.

In particular, voice is a medium which is difficult to process or store. It forces people to use voice simply as a one-time means of communicating with each other. However, these days, with the help of the recent technology to process and store voice, it has become possible to use voice as a means of data communications and cultural activities, as well as for simple communications.

One example is the voice information service that Korea Telecom introduced last year. Despite its short history in Korea and the limited types of service, it has become so popular that it is used

more than 16 million times a month.

Many emphasize that data communications is a good way to expand the information mind throughout the public. I still think and wish to say that voice information services are more effective ways to make information-using habits take root in the minds of the people. And I also would like to take advantage of this occasion to briefly introduce to you the technology development and the service development direction of the voice communications field.

First, I would like to talk about the voice storing field. When you wish to store an analog voice signal in a computer, you must first convert it to digital. Because voice information requires far more memory capacity than text information, storing voice really presents many difficulties. But with the appearance of large-capacity storage elements and the steep plunge in their prices, these problems have been overcome thus allowing for commercialization of various voice information systems including voice mail, audiotex, etc.

To further advance the voice storage field, a voice compression method should be developed to store voice signals at the rate of 1,200 bits per second. If so, a huge scale of voice information will be able to be made into a database like text information. And the transfer of voice information files will be that much easier.

Second, I would like to turn to voice procedure and recognition. In the early stages there was a voice dial telephone set, a product for voice recognition, and since then the voice combination has come a long way. With the advancement of voice recognition technology, it will eventually be possible to develop a computer that can recognize human languages. By utilizing this technology, it will be possible to provide interpretation service for international calls.

By the way, research on voice procedure and recognition requires, in advance, profound research on the languages of each nation. Therefore, it will be necessary to pursue the research on our languages and their characteristics at the same time as that on voice technology.

The third area I would like to mention is the voice transmission field. The existing telecommunications system has thus far emphasized the economy of signal transmission. Thus, the voice bandwidth has been confined to 4KHz. However, with the development of the technology for wide band telecommunications, a better quality of voice transmission will be possible. Korea Telecom is planning to make every effort to develop and distribute wide band high-quality telephone, cubic sound telephone and telephone broadcasting service using telephone circuits, etc. as the basis for such wide band transmission technology.