



Keynote speech at CEATEC JAPAN 2007 **Shaping Ubiquitous Networking Society with Converged IT and Network Innovation**

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1. The Next-Generation Networks (NGNs) Supporting the Ubiquitous Society

(1) NGNs, Infrastructures to Support the Ubiquitous Society

As the ubiquitous society approaches the Japanese telephone networks that were built over the past century are being replaced by the next-generation networks (NGNs) (Fig. 1). The traditional networks currently boast high quality and high reliability thanks to various technological innovations. However, these networks are soon going to reach the end of their useful lives. Even though the Internet is an open and convenient technology it is built on traditional networks and its foundations are weak.

As the networks serving as the infrastructure of the ubiquitous society, the NGNs are expected to provide the advantages of both the existing networks and the Internet (i.e., by being convenient, comfortable, safe and secure).

Since the Internet creates a suitable environment for fostering new industries from new ideas, it will continue to be used in the future concurrently with the NGNs.

NGNs have already entered the trial stage, and massive commer-

cial services are expected to begin at the end of 2007 or the beginning of 2008.

(2) The NGN Layers and Their Roles

NGNs have a three-layer structure, which includes from the bottom the “NGN infrastructure” layer that features high quality and reliability based on IP technology, the “service platform” layer providing service foundations based on deep fusion with IT technology, and the “applications” layer.

The network infrastructure is required to further improve speed and quality by a rapid spreading of broadband communications. The optical IC technology based on silicon photonics that it uses is an NGN technology enabling the size reduction, energy saving and cost reduction of the network equipment. In addition, the spread of wireless broadband communication is expected to make the communications environment more safe and secure.

The service platforms are the very integration of IT and networking and are one of the core components of the NGNs (Fig. 2). Electronic money credit, the cell phone and TV are integrated deeply with IT technology and are connected to specific applications (or services) via the service platforms that provide the foundations of the services.

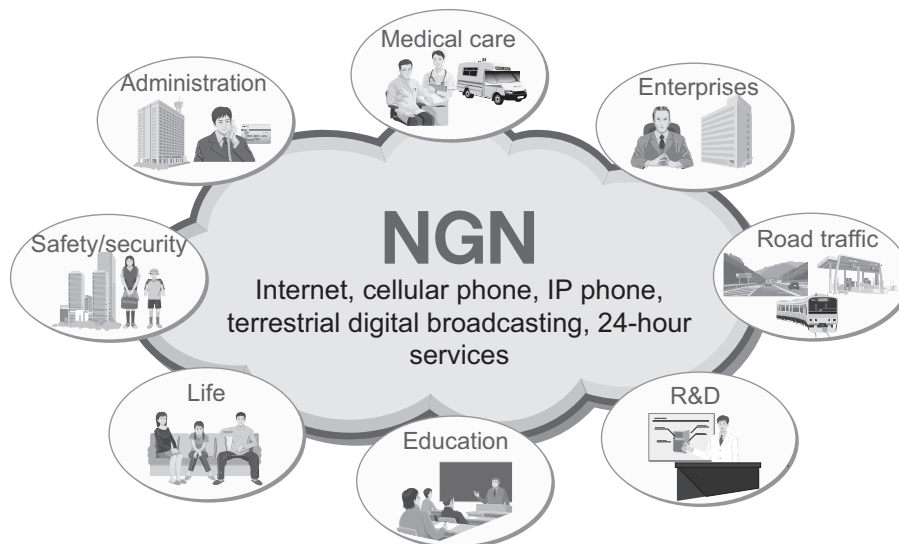


Fig. 1 The advent of the ubiquitous society [Creation of NGN].

- Preparation of a common infrastructure for promoting the creation of new services
 - ▶ Existing services are also improved with regard to safety, security, convenience and comfort.
- Expansion of linkages between individuals, enterprises and society via networks

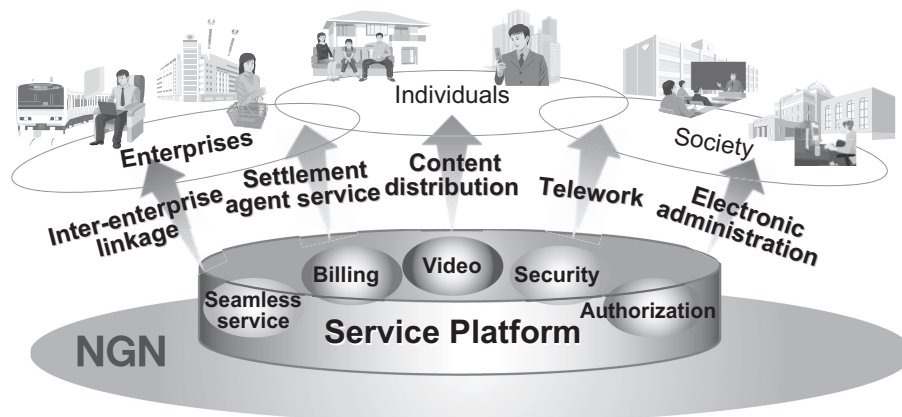


Fig. 2 The role of the Service Platform.

When a common infrastructure is prepared, the initial cost can be reduced and the creation of new services will be promoted. This will lead to an expansion of the linkages between enterprises, individuals and society as a whole via the network.

2. Individuals, Society and Enterprises in the Ubiquitous Era

(1) Individuals

In the ubiquitous society, IT and networking will blend with the everyday lives of individuals. The possibility of benefiting from new services anywhere is expected to make the lives of individuals “convenient and amusing at anytime and anywhere.”

A typical example of this situation is the high-definition triple play (video, web and TV phone) service that has already been tested in our NGN field trials. Moreover, when the new home server is put to practical use, a new style of PC usage will be possible, for example using the PC by carrying it to various places in the home or for recording two video images simultaneously.

(2) Society

The ubiquitous society will be a society in which everyone will be enabled to lead a safer and more secure life by making full use

of IT and networking.

For example, when individual medical information is stored electronically, people are able to benefit from various medical services anywhere simply by acquiring the requisite information via communications.

(3) Enterprises

In the ubiquitous society, the following three innovative concepts will be promoted by business enterprises.

1) Innovation of Inter- and Intra-Enterprise Processes and Consumer Contacts

Innovations are no longer limited to the production sites as formerly. The innovations of the entire manufacturing process from marketing to after-sale services using RFID (Radio-frequency identification) technology and the SCM-ERP (Supply chain Management - Enterprise Resource Planning) linkage will completely change the way in which business is conducted. Inter-enterprise consumer contacts will also be introduced, e.g. by accelerating the innovation of entire value chains via the positive use of IT and networking, or by connecting enterprises and consumers directly, in order to construct the foundations for the provision of new services as may typically be seen in the use of RFID.

2) Working Methods Innovations

Working Methods will be improved by e.g. the promotion of

face-to-face communications in web conferences, address-free mobile offices, flexible working process based on corporate knowledge sharing and improvements in office security resulting from paper-less operations. At the Reference Office of the NEC Broadband Solution Center, we are putting the next-generation work style into practice and have succeeded in increasing the confronted customer talk period by about 40%, decreasing copy paper usage by about 66% and decreasing document archiving space by about 80%.

3) Innovation of Enterprise IT Network Architectures

Enterprises will build robust networks capable of high speeds and large capacities. The new thin client architecture is expected to bring about a significant reduction in total costs and the concentration of PC functions in a server and to greatly improve the security environment.

As I have suggested above, in the ubiquitous era, individuals, enterprises and society as a whole will all enjoy new services that are safe, secure, convenient and comfortable. This will be a result of the advanced linkage systems that will connect them via the NGNs. Those enterprises that are already sensing the coming of such an era are the ones that are likely to become more prosperous in the future.

tion of a culture in which people may lead more humane lives.” The NEC Group is determined to continue its search for systems to serve individuals, enterprises and society as a whole by further developing IT and networking technologies in the future.

3. Sustainable Ubiquitous Society

The ubiquitous society should provide benefits for everyone affected by its influence. At the same time in order to ensure its future sustainability, we must not ignore the global warming concerns that are currently major issues for the future of humankind.

The ubiquitous society will provide a positive contribution to the global environment via its IT and networking input, including reductions in their loads and reductions in product power consumption. It will also support the manufacture of environmentally friendly products, the development of lithium ion batteries for electric vehicles, development of ecological cell phone handsets using bioplastic materials etc. and a reduction in the paper consumption of broadband connected offices. All of which will help to sustain compatibility with the global environment.

I strongly believe that the NGN is an infrastructure that can serve as the basis for building the ubiquitous society and provide a safer, securer, more convenient and more comfortable society. Such an achievement will also serve to provide compatibility with the global environment.

Our target is set for the “enrichment of society and the realiza-