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Session / Building consumer confidence in ICTs: Security and privacy / Keynote speech

Security and Privacy Issues in a Ubiquitous Society

By Akinobu KANASUGI
President, NEC Corporation

1. Introduction

Thank you for the introduction. I am most honored to have the opportunity to speak to you today.

If we look at the current state of information communications technology, or ICT, we see that technological innovation is propelling us toward a fully networked society. I call such a society a ubiquitous society, where information can be exchanged anytime and anywhere, be it between one person and another, a person and a machine, or one machine and another machine.

As the basis for discussion, I would like to share with you today the initiatives Japan has taken toward developing a ubiquitous society, outline the importance of security and privacy issues, and point out challenges for the future.

2. Japan's National Strategy

First, I would like to say a few words about Japan's national ICT policies.

To build a new national infrastructure that proactively uses ICT, Japan has been implementing a national initiative called the "e-Japan Strategy" since 2001.
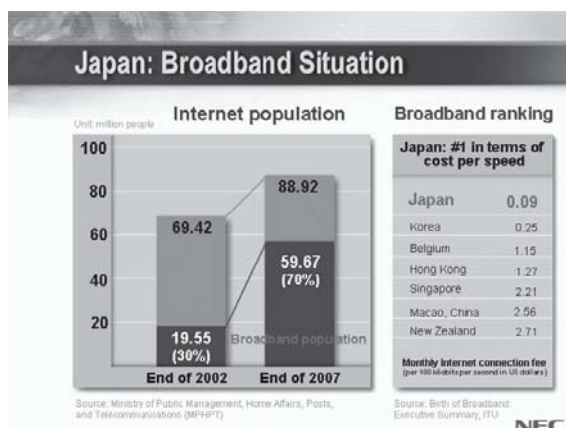
One of the goals of the e-Japan Strategy is the creation of high-speed and super-high-speed Internet infrastructures. Most of the goals are being achieved smoothly and, in many cases, are ahead of schedule.

3. Japan: Broadband Situation

As a result of the e-Japan Strategy, the nation's broadband environment has become one of the finest in the world.

According to the Ministry of Public Management, Home Affairs, Posts and Telecommunications, there were approximately 70 million Internet users in Japan at the end of 2002, and 20 million of them, or about 30 percent, were using broadband connections. By the end of 2007, broadband users are expected to increase to approximately 60 million, or about 70 percent of all Internet users.

According to the ITU, monthly charges for 100 kilobytes per second in Japan are just 9 cents, giving Japan the least expensive high-speed Internet services in the world.

4. Japan: The World Leader in Mobile Communication

Japan is the world leader in Internet-capable mobile telephones.

More than 60 percent of the people have mobile or PHS phones. And, if we look at the number of subscribers on the left, we can see that for every fixed-line subscription there are 1.3 wireless ones. Of those mobile phone users, currently over 80 percent have Internet-capable handsets, a higher percentage than that in Europe or the United States.

And handsets equipped with cameras that enable users to transmit and receive still and moving images and that can be used as videophones have become tremendously popular.

5. Japan's Potential in the Ubiquitous Society

Japan also leads the world in another key area for a ubiquitous society: digital home devices. For example, Japanese companies hold the top global share in products such as game consoles, digital cameras, and car navigation systems.

Moreover, terrestrial digital TV broadcasting will begin in Japan this December. And broadcasts to mobile handsets and in-car terminals are planned.

Digitization will bring broadcasting and telecommunications even closer than they are today. As a result, we can expect to see new types of content with interactive features built in.
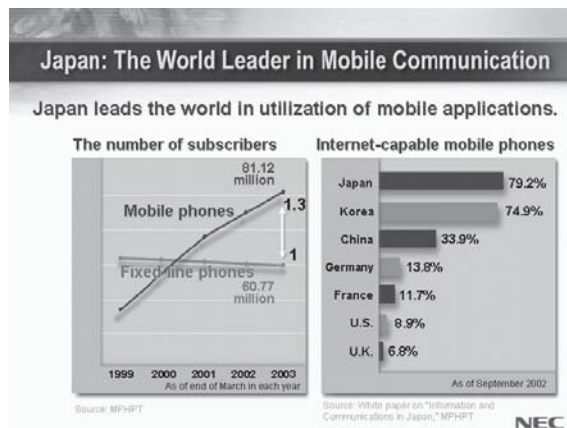
At Telecom World 2003, NEC features a prototype handset capable of receiving terrestrial digital TV broadcasts. Please visit our stand and take a look.

6. e-Japan Strategy II: Promotion of Infrastructure Utilization

As I have outlined, Japan has been building the infrastructure needed for a ubiquitous society. Now, the challenges include creating appealing content that makes people want to use that infrastructure, and developing methods for corporations to use the infrastructure to enhance their competitiveness.

The Japanese government is aware of these challenges. This year it formulated "e-Japan Strategy II," which shifts the emphasis to the use of the infrastructure. This new strategy promotes the use of broadband and mobile technologies, setting concrete targets in seven areas, such as medical care, food, and living.

By applying the pioneering results achieved in these seven areas to other fields, the expansion of ubiquitous networks throughout all of Japanese society will be promoted.
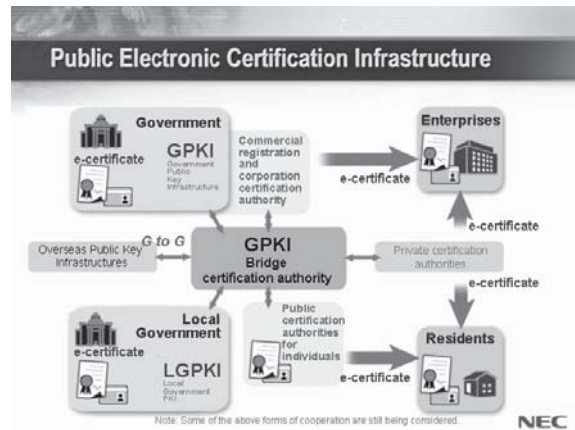
7. Public Electronic Certification Infrastructure

To encourage the use of the infrastructure, it is essential to build an e-certification system to confirm that users are who they say they are.

The Japanese government has been promoting e-government initiatives as part of the e-Japan Strategies, and the e-certification infrastructure is the foundation of the e-government systems. At present, e-certification bureaus are in place in all government agencies, and operations are beginning. In addition, public certification bureaus, which verify the identity of individuals, will be ready to conduct trials this year.

Online certification requires a high level of reliability. By setting up this certification platform for government procedures, online transactions in the range of government-to-government, government-to-business and government-to-consumer will expand. Its success will drive expansion in the business-to-business, business-to-consumer, and consumer-to-consumer transactions as well.

8. Dynamic Collaboration — making your business grow

And broadband will drive these online transactions into collaborative relationships.

NEC proposes a business style we call "Dynamic Collaboration" to enhance global corporate competitiveness by making full use of the opportunities broadband offers. Dynamic Collaboration means cooperating with companies that have different technologies and ideas in order to share core competencies and create new value. It also means dynamically updating partnerships to respond to changes in the business environment.

NEC will offer the systems support required for Dynamic Collaboration between companies.

9. A Value Chain through Collaboration

I would like to briefly speak about NEC's personal computer business as an example of this kind of collaboration.

In response to price competition in the personal computer market, NEC constructed a global value chain linking a Taiwanese electronic manufacturing service company, its factory on mainland China, and NEC Japan. Then we procure finished products from the factory in China. By doing this, we achieved a form of collaboration that made the most of each partner's strengths: NEC Japan's technical know-how, the Taiwanese company's skill in managing the Chinese factory, and the low-cost production of China.

10. Medical Services through Collaboration

Next, let's look at an example of collaboration among medical institutions.

Until now, online tie-ups between medical institutions in Japan have not gained much ground because of privacy issues. However, collaboration between such institutions offers patients greater convenience. For example, patients can receive quick referral to a specialist facility suited to their symptoms after just one medical checkup. To achieve such collaboration, systems to guarantee the privacy of patient information are now being studied and trials with model projects are being conducted.
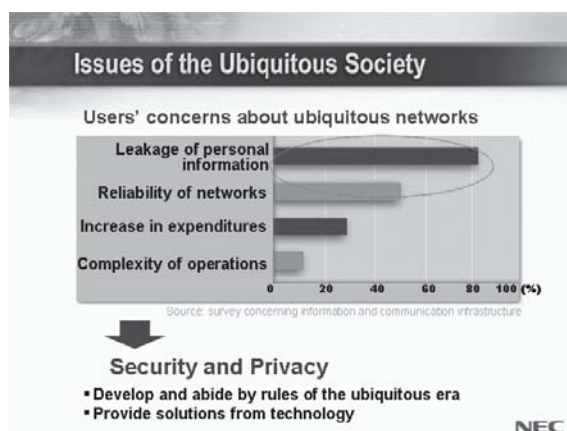

11. Issues of the Ubiquitous Society

As I explained before, privacy is a big issue in creating a ubiquitous society.

According to a survey conducted by the Ministry of Public Management, Home Affairs, Posts and Telecommunications, people are most concerned about the leakage of private information and network security.

To resolve these problems, I believe we need to tackle the issues from two angles. First, we need to establish and comply with usage rules that are suited to the age of a ubiquitous society, rules that satisfy everyone including consumers, corporations, and governments. Second, we need to tackle the technological aspects. However, we cannot resolve the privacy and security issues with rules or technologies by themselves. I believe we will only make progress toward resolving them by dealing with both aspects in tandem.

12. Development and Observances of Rules

An orderly framework is gradually being set up for rule making for a ubiquitous age. International organizations such as the ITU, along with national governments, are establishing policies, laws, and regulations. These are complemented by self-regulation on the part of associations in the private sector, such as the Global Business Dialogue on Electronic Commerce, or GBDe.

Of course, consumers' opinions are also reflected in the discussions and results through national consumer associations and Consumers International.

For your information, NEC is a member of the GBDe, and has taken a leading role in working groups dealing with security and privacy ever since the GBDe was established.

13. Direction of Security Technology

Concerning the technological aspects, enhanced privacy protection and security measures are being developed. The focus of the privacy protection activities is currently on protection technology for corporate databases holding personal information. At present, the risk to user histories on the Internet is large, and protecting user histories is a major goal in current research. In terms of security, current technology prevents attacks based on past access patterns. Research is now proceeding on creating protection against unknown patterns of attack. However, enhancing security by protecting against unknown attacks raises the need to monitor Internet users' online behavior for irregularities and problems. Meeting demands for high-level security and, at the same time, offering privacy protection are extremely important issues and major challenges for future research and development. These issues are closely interrelated with the rule-making processes that I spoke of a moment ago. Clear rules should be established in advance for emergency cases where protected personal information must be accessed. To respond to these issues, it is important to enhance privacy protection and security measures by ensuring that rule-making and technology influence each other sufficiently.
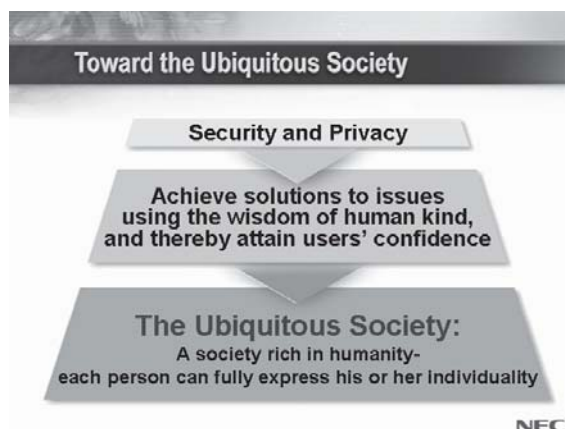
14. Toward the Ubiquitous Society

Security and privacy are issues we need to deal with, as we head towards a ubiquitous society. We cannot pursue the convenience and amenities of such a society at the expense of these issues. And we should not halt our development work when faced with risks to security and privacy.

As I mentioned, we are working to formulate new rules and develop technologies that should resolve the security and privacy issues. But there are still many problems to overcome. I am confident that the collective wisdom of humankind is capable of resolving these problems and that the confidence of users will be gained.

The coming ubiquitous society must be turned into a people-oriented one in which everyone can fully express his or her individuality. Together, we can achieve that.

Thank you very much.

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