Will IP Telephony Help Innovation in Your Office?

— Introduction of SV7000 —

Introduction

The broadband environment is rapidly growing for home users and the ratio of broadband users at home exceeded more than 70% in Japan (**Fig. 1**). Japan is currently offering one of the best broadband solutions for home users, however most enterprise users are still deploying narrowband solutions. It is expected that the enterprise will rapidly adopt broadband within the next few years.

In Japan, IP Telephony service, which is called 050 service, was introduced in October 2003. To access the IP Telephone network, the user must dial 050 followed by carrier access code and telephone number. Current telephone charges vary from local calls

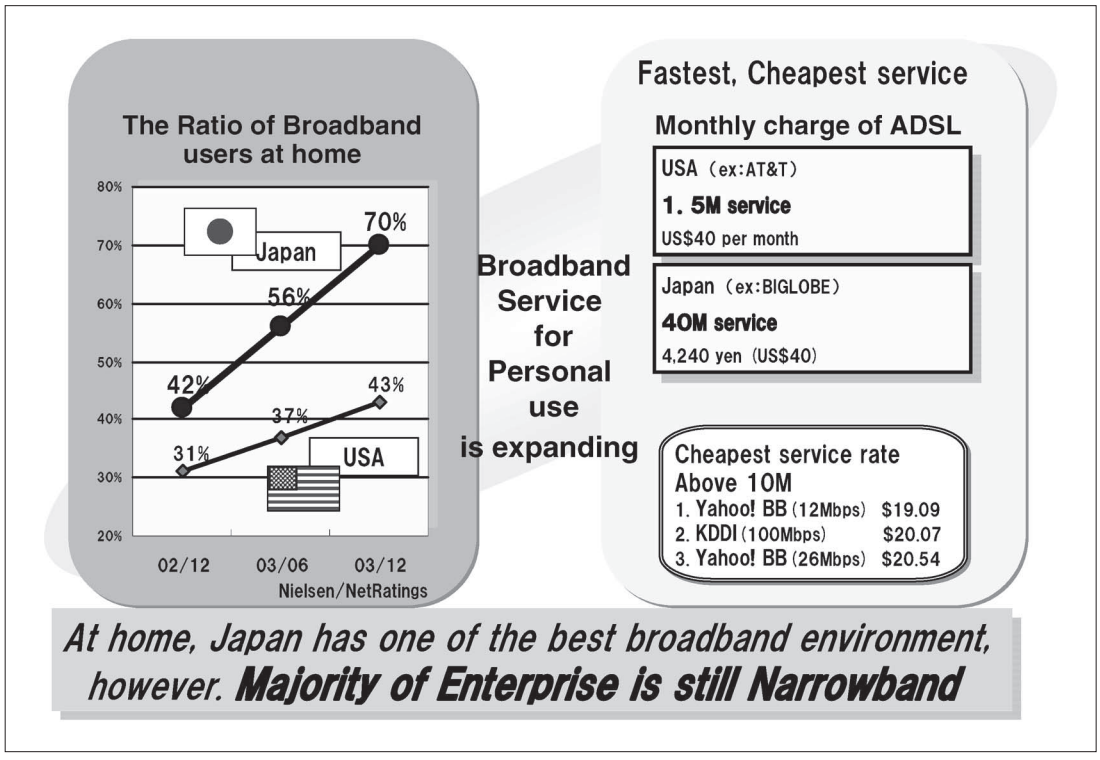

Fig. 1 Broadband service expansion in Japan.

Hiroo ICHII received his B.E. degree from Osaka University in 1981. Joining NEC Corporation in 1981, he was engaged in software development of digital PBX systems. From 1994 to 1999 he was transferred to NEC Singapore Pte. Ltd. as division manager of Network Solution Group. After return to NEC Corporation, he is now manager of 2nd Enterprise Communications Solutions Division in charge of promoting overseas enterprise business to global accounts and carriers.

to long distance calls to IDD (International Direct Dialing) calls where current rates are based on distance. However, in most cases IP telephone service is billed at a flat rate regardless of distance in Japan and even free between users subscribed to the same service provider. This becomes a tremendous cost savings for enterprise customers and can be the trigger for enterprise customers to consider switching to IP telephony. But are there any other benefits to consider in introducing broadband and IP telephony in the office?

A Day in the Broadband Office

Mr. Suzuki comes to the office at 8:30 every morning. He opens the locked office door with his RFID (Radio Frequency Identification) card and registers his presence in the presence server (**Photo 1**). He moves to his small cabinet locker and opens the locker to get his notebook PC (**Photo 2**). He looks around the office floor and finds a corner desk space to sit and open his PC. Once powered up his PC searches for a wireless access point for authentication and access to his company's Wireless LAN system. Now he is ready for work. The notebook PC is installed with all the necessary applications to access the company portal for checking his schedule, checking his e-mails, for information sharing, booking meeting rooms and ordering his daily lunch.

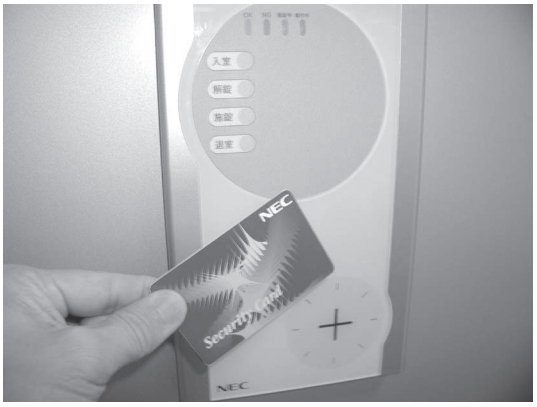

Photo 1 RFID Security card access.

Photo 2 Personal cabinet to lock up PC.

The phone rings and the softphone in the PC is activated. By a USB headset, Mr. Suzuki answers the call and can even participate in a video conference call utilizing his USB camera.

The office floor is neat and tidy filled with open style desks and colorful chairs. There and no piles of papers, no scattered files, this is truly a 21st century office. The office staff shares a printer and copier with few cabinets for storage.

Mr. Suzuki steps out for a meeting with his customer in Shinjuku, and makes a report with his PC at the nearby cafe right after the meeting. He accesses the company portal via a secured remote access point to send his meeting report to his manager.

This is a typical scene in the broadband office.

What is Broadband Office?

NEC is proposing the broadband office solution for office innovation.

Here are the objectives for the broadband office and the keywords are Collaboration, Knowledge community and Remote access.

(1) Anytime Collaboration

Using IP based softphones, you can have communication anywhere in the office and videoconference enables real-time multimedia communication.

(2) Everybody Is a Specialist

Knowledge community is an application to support you to find the expert in each specialized field. The employees can form a special group dealing with common subject to share information.

(3) Office Anywhere

Wireless LAN and secured remote access provides stress-less working environment for the employees inside and outside the office.

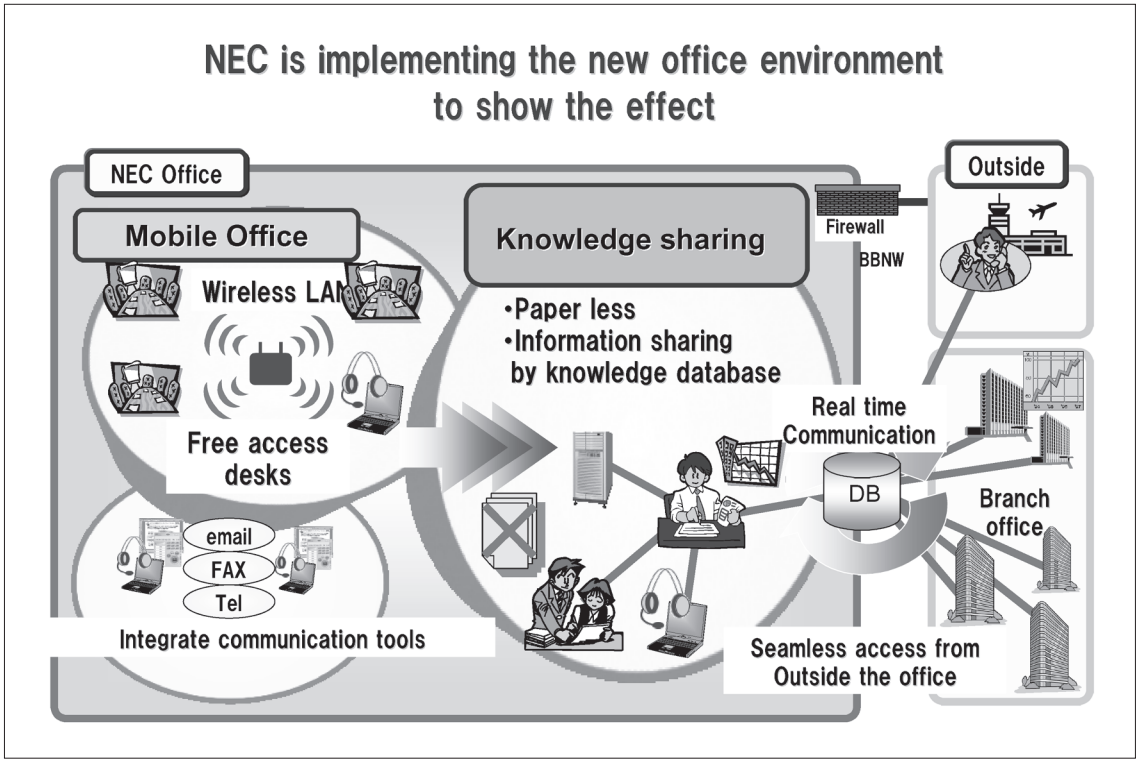

Fig. 2 Work style at Broadband Office.

Innovation by Broadband Office

In the early stage of IP Telephony introduction, TCO (Total Cost of Ownership) - the promise in reduction of network transport costs - fueled the speculation that IP would rapidly displace TDM. It may be true that the reduction in TCO for transport, moves, adds may still be a reason to introduce broadband and IP telephony. But work style innovation is another merit of the broadband office.

Increasing intelligence and creativity among employees in the office environment is the biggest benefit of IP Telephony.

Some of the highlighted merits are as follows (**Fig. 2**);

(1) Productive Daily Work Support

Telephone, fax, e-mail, schedule chart, information memo and other office tools are integrated for easy use and access through your PC.

(2) Productive Time Management

Wireless access inside the office and remote access outside the office allows employees to manage time efficiently. Web conferences reduce meeting time, travel time and traveling expenses (**Chart 1** and **Chart 2**).

Monthly effect	Reduction
Meetings at Meeting room	70%
Length of Meeting	20%
Traveling expense Saving by Web conference	15%

(Effect at NEC Shinagawa office)

Chart 1 Time savings at broadband office.

(3) Reduce Office Space

Free access desks can reduce 20% to 30% of the office space especially with a sales staff who mainly works remote from the main office. These reductions translate into space savings which help contribute to the bottom line profitability of enterprise business.

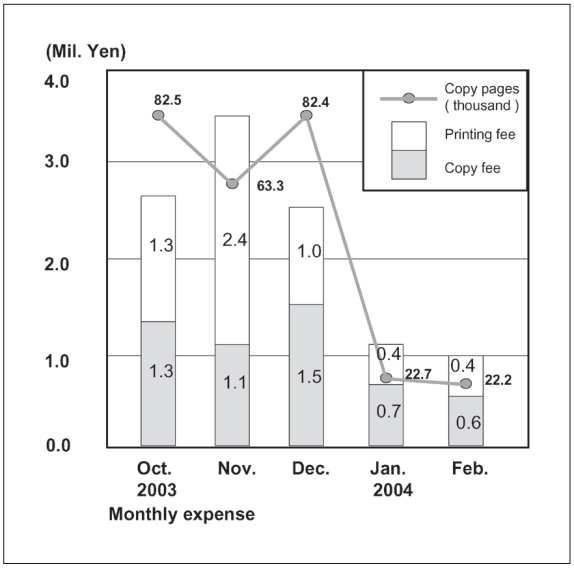

Chart 2 Expense savings (copier, printer paper).

UNIVERGE Solution for Office Innovation

UNIVERGE products and applications are the key components to realize the broadband office solution. UNIVERGE SV7000 is an IP based Telephony server supporting open standard SIP (Session Initiation Protocol) protocol. It is designed to have most telephony service features that a PBX can provide in an IP platform. Through the addition of feature packages the SV7000 can add on new solutions such as secured WLAN, remote access and web based conferencing amongst the many (**Fig. 3**). Here are some of the components which can be utilized in a broadband office:

(1) IP Telephony Solution

UNIVERGE SV7000 is at the core of NEC's IP Telephony solution set. The SV7000 supports both IP phones, PC based softphones and SIP based open interface for integration of SIP phones and applications. It inherits almost all the Telephony service features that a current PBX provides to the enterprise, which guarantees seamless operations for the office. Office cabling can simply be

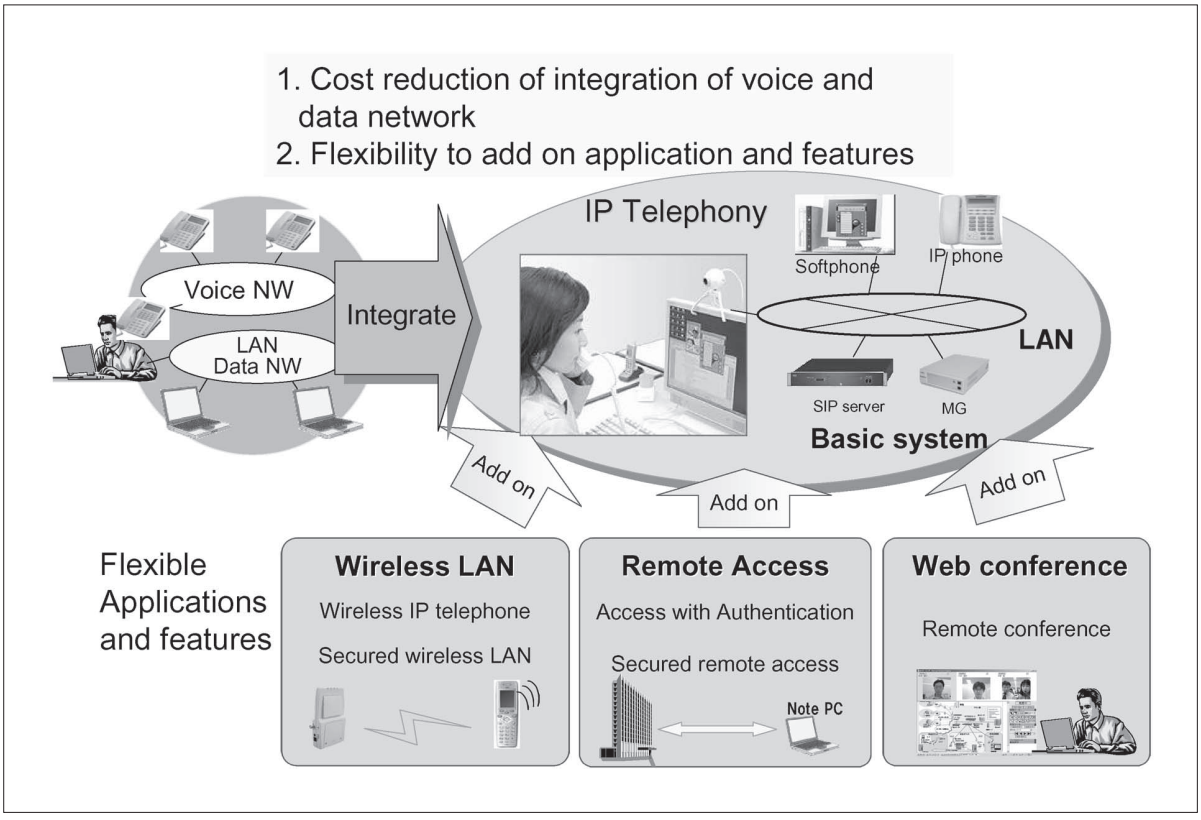

Fig. 3 IP Telephony Solution.

LAN based and can be integrated with the data network for easy operation and maintenance.

(2) Secured Wireless LAN Solution

Wireless LAN is easy to use and becoming more widely adopted, however, providing security to the enterprise is a key factor before considering full-scale deployment. UNIVERGE WL series WLAN equipment is designed to provide enterprise-level security and easy operation and maintenance, from small- to large-scale offices, through the web. The UNIVERGE WL series supports IEEE801.x, IPsec, RADIUS and other industry-leading security systems. The access point has a thin type design for the ease of attachment. Other highlighted features are load balancing for high traffic and rogue access point detection for security. Wireless LAN system can be integrated with the UNIVERGE SV7000 to provide a mobile office environment. Users can carry notebook PCs anywhere in the office to access the company portals and can make IP softphone calls through via wireless connections. It can also support SIP IP wireless handsets for voice communication (**Fig. 4**).

(3) Remote Access Solution

Remote access from outside the office is available by SSL or IPsec based security server. Remote access allows employees to access to the company's secure information with authentication and access log providing end-to-end security to the enterprise (**Fig. 5**).

Conclusion

NEC has introduced this concept in our new NEC Shinagawa Broadband Center in Tokyo, Japan. To date, time savings and expense reduction at Shinagawa office have been significant. These facts show that the broadband office solution is creating office innovation and changing current work habits. It is also contributing to the TCO reduction of the enterprise (**Photo 3**).

NEC will continuously introduce new products and solutions under the UNIVERGE platform and promote the true effects of the IP Telephony solutions.

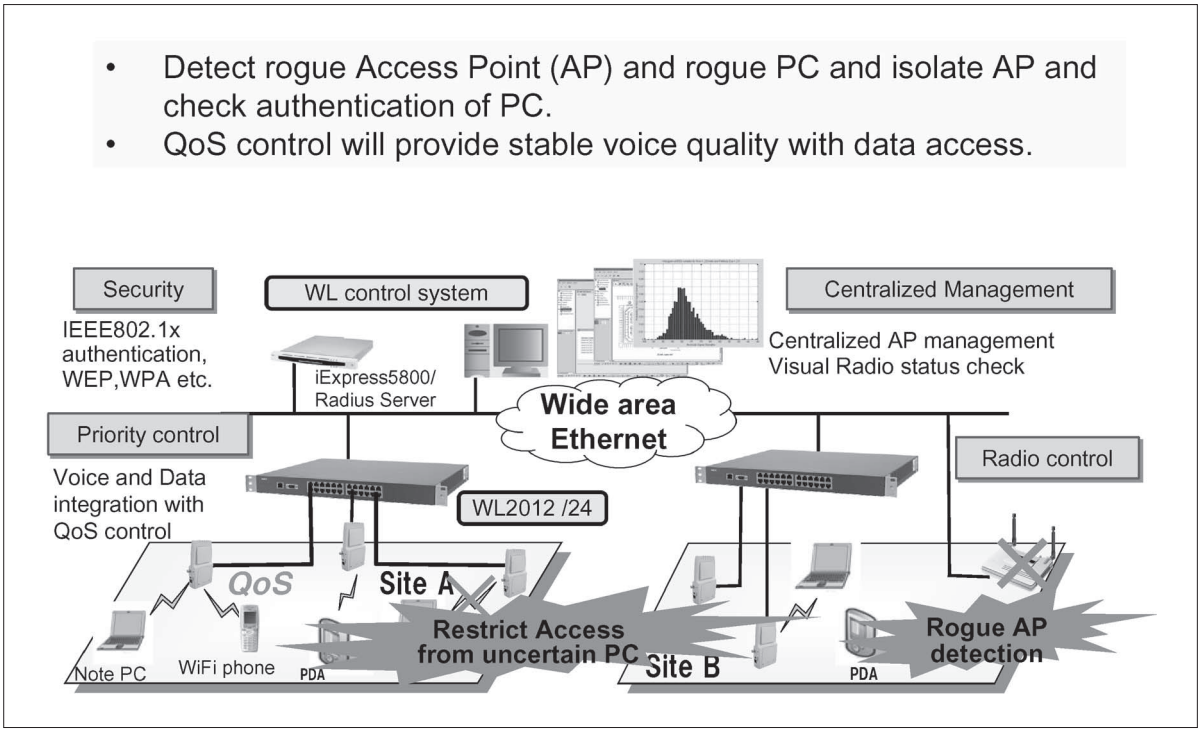

Fig. 4 Secured Wireless LAN.

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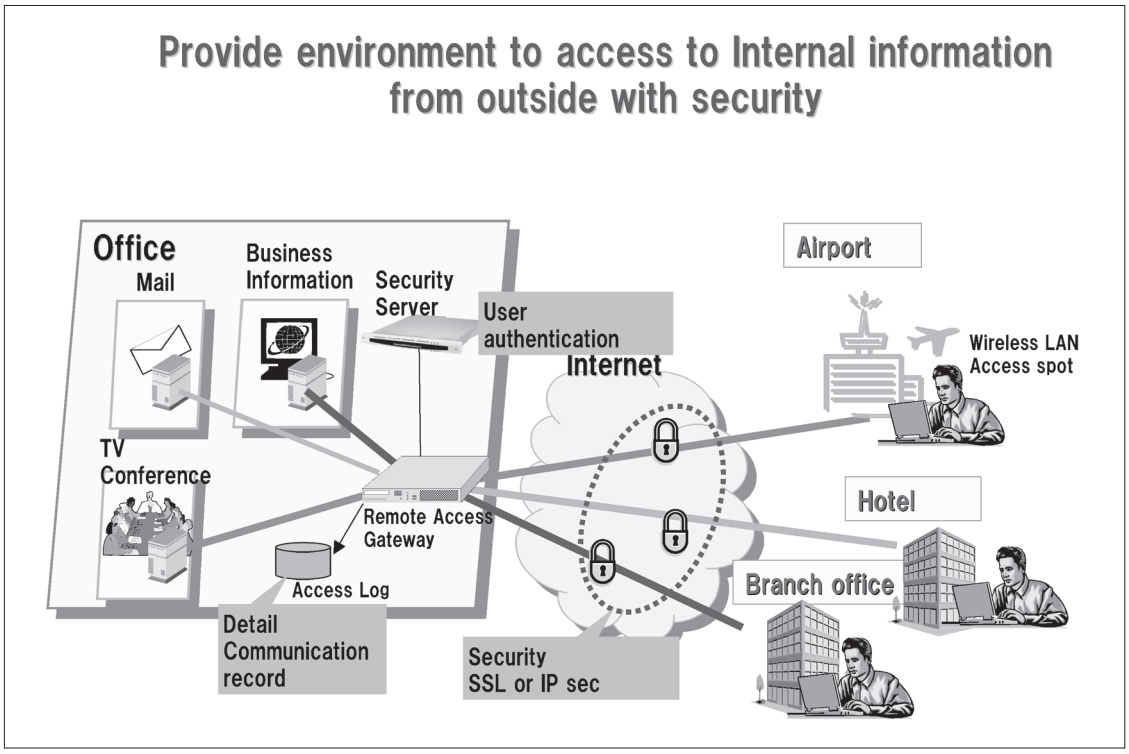

Fig. 5 Secured Remote Access Model.

Photo 3 NEC Shinagawa free address office.