Concept

UNIVERGE Pursuing "People-Centric" Communications Environments

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Abstract

NEC has proposed the global concept of "UNIVERGE360" aiming at "people-centric" communications environments in consideration of the enhanced efficiency of people working in enterprises. One of the key elements forming this concept is that of Unified Communications (UC). NEC is promoting the evolution of enterprise communications systems along the two axes of "expansion of communication integration capability" and "expansion of business process integration capability." With regard to the "expansion of business process integration capability", NEC is developing products targeting SOC (Service Oriented Communications), which is the concept of communications platforms with an improved affinity to IT systems.

Keywords

UNIVERGE360, Unified Communications, business system, SOC, SOA

1. Introduction

Enterprises are advancing efficiency improvements and cost reductions with positive IT investment in various fields of business activities by introducing ERP, SCM, CRM, etc. Nevertheless, while the job process is optimized by the introduction of such IT systems, the overall performance of enterprise activities are still dependent on delays brought about by the "human dependence process." However, many of the delays caused by human factors may be solved by investment in the communications environment.

NEC offers the UNIVERGE solution at the global level to solve issues related to the communications environment of enterprises.

In this paper, we will first introduce the global concept of UNIVERGE, and then describe the Unified Communications (UC) proposed by NEC and its orientation. Finally, we will also discuss SOC (Service Oriented Communications), which characterizes our approach to the integration of business and communications systems.

2. Global Concept "UNIVERGE360"

At NEC, we are proposing "UNIVERGE360," as a global concept, which places "people" at the center of business communications.

The required communications environment varies for each worker in enterprises. For example, for sales persons who often go out of the office, the optimum device for performing their duties is the cellular phone. If office tasks can be executed from outside the office using a cellular phone, a sales person can then spend more time performing sales activities. For a nurse in a hospital, it would be a great help in a medical emergency with no moment to lose if the doctor in charge of an inpatient could be called with a one-touch operation of a device in hand.

In this way, each worker has his or her "role," and people use communications to fulfill the "role." A sales person uses the cell phone also to perform office tasks and to assume his or her "role," and a nurse uses a professional PDA to notify the doctor of an abnormality in the condition of a patient.

NEC will in collaboration with our partners to provide enterprise customers with efficient communications environments optimized for the various "roles" of each worker. These will span from network infrastructures to communications platforms, applications and services. "UNIVERGE360" (**Fig. 1**) will be the most appropriate system to provide such environments.

At the same time, the key element supporting such environments is UC.

Fig. 1 "UNIVERGE360" logo.

3. Values of Unified Communications

We promote evolution of enterprise communications systems along two major axes. One of these axes is "expansion of communication integration capability," which provides the customers with seamless communications environments by integrating the previously separate means of communication. The other axis is the "business process integration capability," which provides the applications with an open interface in order to improve the integration of applications and communications.

3.1 Expansion of Communication Integration Capability

Humans hold communications in order to affect others in a certain way. They utilize communications as the means of various interactions, to let others judge something, let others act or to let others offer their wisdom. Humans select the optimum means of contact according to the interactions. This means that, to implement a seamless communications environment, it is important to integrate the "means of interaction" such as reporting, liaison and consultation and the "means of contact" such as telephony, e-mailing and instant messaging services (**Fig. 2**).

As described above, the integration of desktop applications and communications systems assumes a key role in the implementation of the seamless communications environment. The desktop applications record contact target persons in various ways and provide this information as required. For example, they allow persons to be searched in the address book, record those persons receiving or sending the mails, keep the mail reception/sending record and display the persons who have created documents. If telephony, mailing, chat or conferencing can be started directly from such contact information, it is possible to eliminate the wastage of time before a communication can be started.

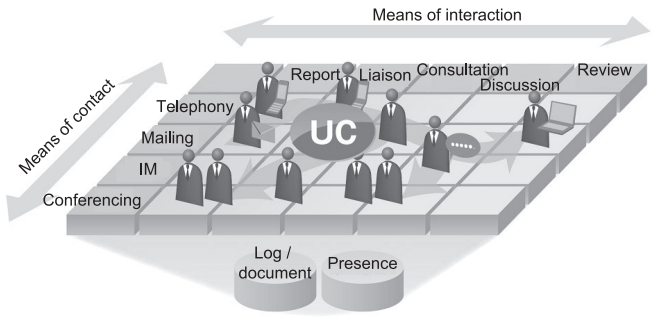


Fig. 2 Integration of "Means of Interaction" and "Means of Contact."

NEC has concluded a global partnership with Microsoft Corporation and IBM Corporation to implement comfortable communications environments to meet the desktop environments of customers. Such collaboration enables us to develop environments that are able to integrate the desktop applications of the partner enterprises.

Collaboration with Microsoft has resulted in the integration between Microsoft (R) Office Communications Server 2007 and NEC's communications systems. Such interconnections allow users to originate or receive external phone calls and select the optimum means of communication according to the Presence information. As an authorized partner of Microsoft, we collaborate with them in developments and sales in three domains, which are "solutions," "devices" and "PBX."

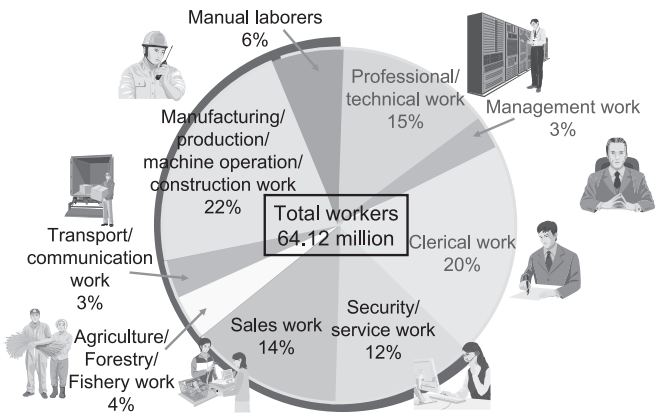
On the other hand, collaboration with IBM has resulted in the integration with IBM Lotus Sametime 8.0, which is a real-time collaboration product of IBM. For the first time among Japanese manufacturers we have developed a software, the "UNIVERGE Gateway Module for IBM Lotus Sametime" to enable the connection of the IBM product with NEC's communication systems. This arrangement allows the users of IBM Lotus Notes to check the call status of linked telephones and to originate or receive both internal and external phone calls via Lotus Sametime.

3.2 Expansion of Business Process Integration Capabilities

According to the statistics on Japanese workers per business announced by the Ministry of Internal Affairs and Communications in January 2008, about 60% of Japanese workers are not working in offices but at so-called "GENBA (actual work sites)." This indicates that the integration of desktop applications alone is not by itself enough to support the communications environments of enterprises. We are therefore also promoting the integration of communications systems with applications associated to business types and actual operations (**Fig. 3**).

As the IT investment has advanced, enterprises today have achieved almost all of the targeted efficiency improvements and cost reductions in their operations and job processes. However, job processes contain domains that are greatly dependent on human behavior and the efficiency improvements and cost reduction of these domains are limited if investment is only applied to business systems. Now that efficiency improvements applied to such business systems is approaching a limit, enterprises are again recognizing the importance of improving the efficiency of "the domains that are greatly dependent on human behavior."

For example, let us assume a case in which a quality error occurs at a fabrication production line and that the persons concerned such as the person in charge of quality control have to be summoned to the actual site where the error has occurred. The previous process has been human-dependent, in which the person confirming the error in the production system has identified the persons concerned and sent notification to each of them. However, if the production system and communication system can be integrated, convening of the persons concerned can be programmed because the system issues error notifications automatically to the persons concerned. As seen in this example, embedding communications in business systems can reduce the time wastage caused by delays due to human factors.



Source: Governmental Statistics on Labor Force (Jan. 2008), Ministry of Internal Affairs and Communications

Fig. 3 Number of Japanese workers per business type (2007).

Such mechanisms to initiatie communications that involve job systems are more effective in the case that you have to take complicated process to contact other persons. Also, in the case of irregularities that differ from routine job processes, such as incidents or errors, it is hard to avoid delays caused by human factors because humans must perform processes that they are not normally accustomed to. Measures based on systematizations are particularly effective in such cases.

To facilitate the coupling of applications associated with business types and operations with communications systems, we are developing products that target SOC (Service Oriented Communications). This is the concept of communications platforms that feature an improved affinity to the IT systems.

4. A Technology for the Actual Utilization of UC

SOC is the concept of "a communications system that has its functions classified into services, which are significant or useful to business systems, etc., that provide services as external interfaces so that the external systems can utilize the communications system functions on a per-service basis." In other words, it is the notion of positioning the communications functions as a service in the SOA (Service Oriented Architecture). SOA is a design technique for enabling the efficient construction of enterprise IT systems.

Efforts for integrating computer systems and communications have been ongoing. However, the previous methods were to interconnect the systems by using highly specialized interfaces that were difficult to handle except by experts. The high degree of specialization and the resulting high costs have previously restricted such system linkages to limited domains, such as to contact centers for which enterprise investment motivation is relatively high.

However, the progress of technology is going to change this situation. The adoption of IP by telephony systems has increased its affinity to the Internet protocol, and the loose coupling of IT systems has been advancing positively with message technologies that utilize Internet technologies called

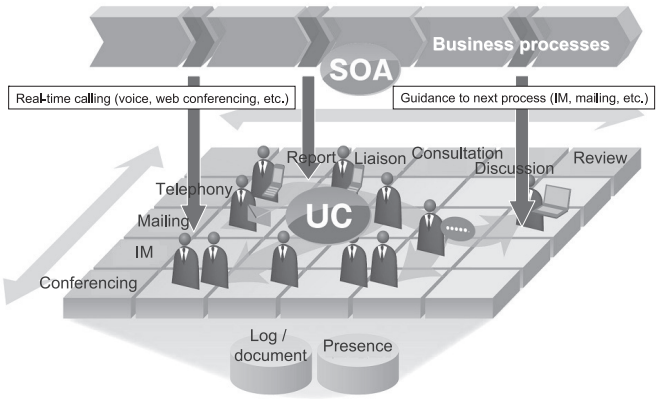


Fig. 4 Integration of business processes and communications.

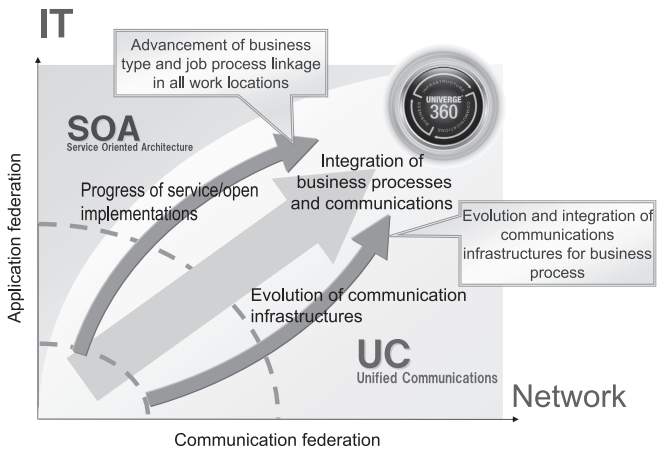


Fig. 5 Deployment of UNIVERGE solutions.

web services, such as HTTP, SOAP and XML. As a result, it has become possible to integrate communications systems such as telephony systems into business systems via the extension of SOA into IT systems. This has been achieved by providing web services based on open interfaces as well as on the traditional highly-specialized interfaces.

Business systems in which communications are embedded can include real-time calling functions such as voice and web conferencing into their business processes. They can also guide persons to the next process using messaging tools, such as e-mailing and IM (Instant Messaging), as shown in **Fig. 4** .

If an SOC platform implementing the SOC concept is used, all that the business systems have to do is to use the communication function that has been conceptualized in the new services. Enterprises may thus benefit from these new added values by continuing to make use of their existing assets.

5. Conclusion

As described in the above, in order to effectively implement “people-centric” communications environments (**Fig. 5**), we are promoting the evolution of enterprise communications along the two axes of “expansion of communication integration capability” and “expansion of business process integration capability.”

We place special emphasis on these efforts in securing the reliability required for voice communication infrastructures. Enterprises cannot trustfully use seamless communications environments or organic coupling with business systems unless they are implemented within secure voice communications infrastructures.

UNIVERGE supports the improvement of business systems and the productivity of customer enterprises as well as the reform of business procedures in various work locations by delivering UC environments centered on high-reliability voice communications.

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