Acceleration of Unified Communications with NGN and SaaS

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Abstract

The Next Generation Network (NGN) features QoS (Quality of Service), security and safety. It is a significant innovative improvement for networks that promote enhanced functions and added value in support of enterprise systems. Besides the NGN, Software as a Service (SaaS) is another innovation for the network society. This is a software deployment service generally provided by carriers and Internet service providers. SaaS is expected to significantly change the system architecture of enterprises as the introductions and developments systems having been conventionally carried out by the enterprises themselves.

The diffusion of NGN and SaaS is also backing up the efforts of NEC's Unified Communications (UC) to implement ubiquitous enterprise systems that are able to expand in any type of business field.

Keywords

UC (Unified Communications), NGN (Next Generation Network), SaaS (Software as a Service)
ubiquitous, real-time communication

1. Introduction

It was in March 2008 that the commercial NGN (Next Generation Network) service of the NTT Group first began. Though the first release was targeted mainly at consumers it is expected that the enterprise-oriented services will also be enhanced as the service area is extended in the future. On the other hand, the provision of SaaS (Software as a Service) by carriers and service providers is attracting attention as a new mode of provision for enterprise systems. It is now expected that the dissemination of NGN featuring QoS (Quality of Service), security and safety will expand the use of SaaS in enterprises. This paper will consider the impact of the expansion of NGN and SaaS on UC (Unified Communications) and introduces the efforts being made by NEC in this field.

2. Impacts of NGN on Enterprise Activities

2.1 Information Systems for All "GENBA", Actual Sites

Preparation of enterprise networks and the application of IT in business tasks have been promoted mainly in an office context. However, the progress of broadband and mobile technology and the practical implementation of IC cards and RFID have expanded their uses to all "GENBA (actual sites)" of enterprise activity. These trends are being further accelerated by the advent of NGN, and the ubiquitous society is now becoming a reality (**Fig. 1**).

2.2 What Does NGN Offer to Enterprise Systems?

One of the biggest features of NGN is its on-demand property, which make it possible to hold real-time, secure communications with the targeted parties at a required time. In addition, as the NGN arranges service platforms and opens up interfacing with applications, it enables the backbone applications to easily utilize real-time communications.

2.3 Fusion of IT and Network in an Enterprise and in "Enterprise NGN"

On the other hand, enterprise based information systems are also making progress, and many enterprises are integrating voice and data communications in the domain of network infrastructures by using IP technologies in the same way as the NGN. More recently, the preparation of real-time communication platforms based on UC is attracting attention, which is tending to both unify the network and integrate the means of communication, such as: the telephone, E-mailing and instant messaging (IM) functions that have been provided separately

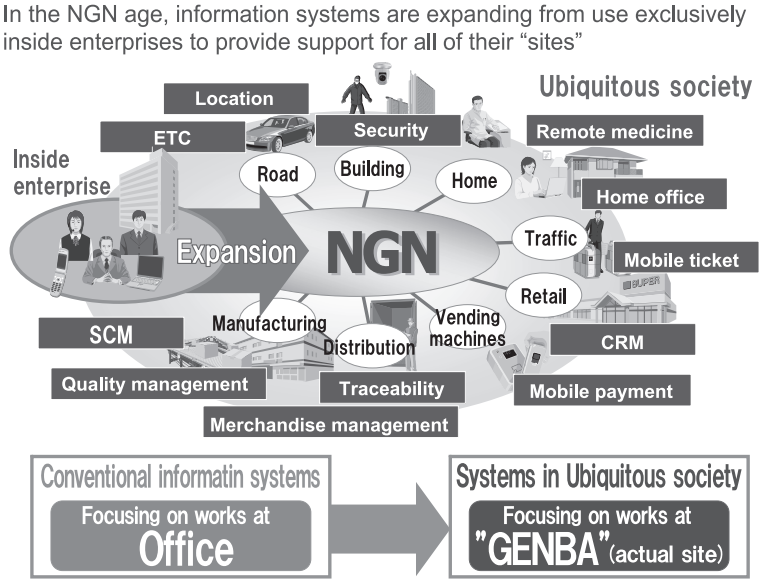

Fig. 1 Information expanded in various "GENBA (actual sites)" by NGN.

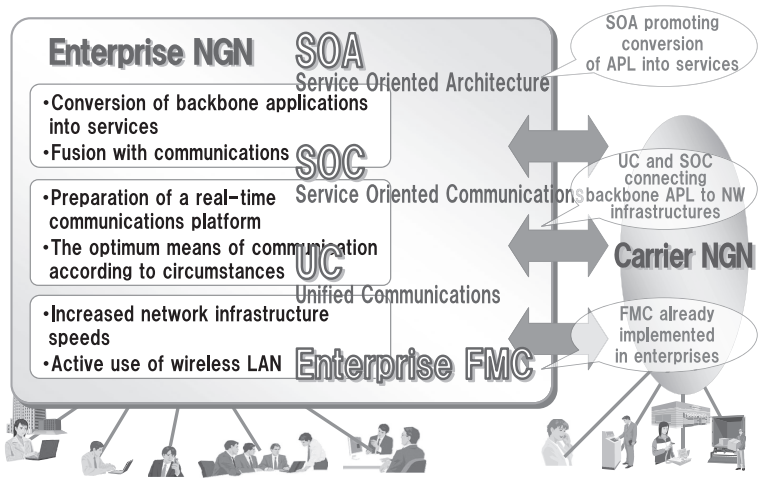

Fig. 2 Toward the implementation of "Enterprise NGN."

in the past. It also manages information on the presence or otherwise of a called party while using the optimum means of communication according to the situation.

In the domain of applications, the reconstruction of backbone applications based on SOA (Service Oriented Architecture) is under way. The evolution of enterprise systems as described above can be regarded as the "enterprise-version NGN" (**Fig. 2**).

When the preparation of UC, its arrangement into appropriate platforms and SOA are advanced further, the backbone applications inside each enterprise will be capable of actively utilizing real-time communications by means of the UC platform. Should any fault for example occur in the production line, it would also be possible for an application detecting the fault to automatically notify relevant members of the situation at the same time as convening a meeting to discuss countermeasures.

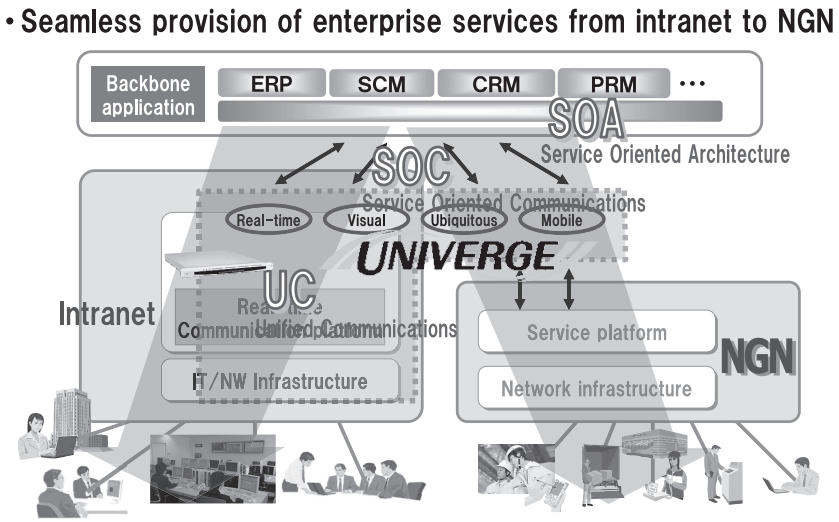

Fig. 3 Fusion of UNIVERGE Solution with NGN.

2.4 Fusion of Enterprise Intranet and NGN with UC

The advancement of UC platforms is expected to promote the fusion of IT and networking even further and future enterprise information systems are expected to become "enterprise-version NGNs." The NGN construction by carriers as described above and the construction of "enterprise-version NGNs" are expected to be advanced concurrently in the coming few years. One of the characteristics of the carrier NGN is that thanks to its on-demand property it enables security and safety in its communications with required parties at the required time. It is expected that these properties will contribute to expand the area of enterprise communications from the intranet alone to uses involving other enterprises and to various "GENBA" (actual site).

When this strategy is considered from the viewpoint of applications, it is required to adopt real-time communications so that communications with desired destinations are possible by selecting the optimum means according to the circumstances and regardless of the current location of the targeted party. For this purpose, the enterprise UC platform should be linked appropriately with the service platform of the carrier NGN so that they may together provide users with seamless services without making them conscious of differences between networks.

As described above, the UC that is currently prepared as a UNIVERGE solution is expected to assume the central role that will significantly change the enterprise information systems in the coming NGN age (**Fig. 3**).

3. SaaS and Unified Communications

3.1 Background of Attention to SaaS

As mentioned before, what is evident with the enterprise information systems is that they concentrate investment of resources on their competence and utilize services including SaaS to enable other functions.

SaaS is a technique for providing software via a network. As a result of the advancement of the SOA and virtualization technologies, it is now positioned as a development of the ASP (Application Service Provider) service. The main points that persuade customers to decide on the introduction of SaaS are the flexible user customization function that was previously unavailable with the ASP service and the platform service embedding various service development environments, including the evaluation environment. In addition, the SaaS market is currently attracting much attention because the start of the NGN services has aroused public expectations for being able to use secure broadband networks at low cost.

3.2 NEC's Systematization of SaaS

At NEC, we have systematized the SaaS services that we have been providing as well as the platform technology as part of the business service enhancement program and have announced the results as the SaaS business strategy of the NEC

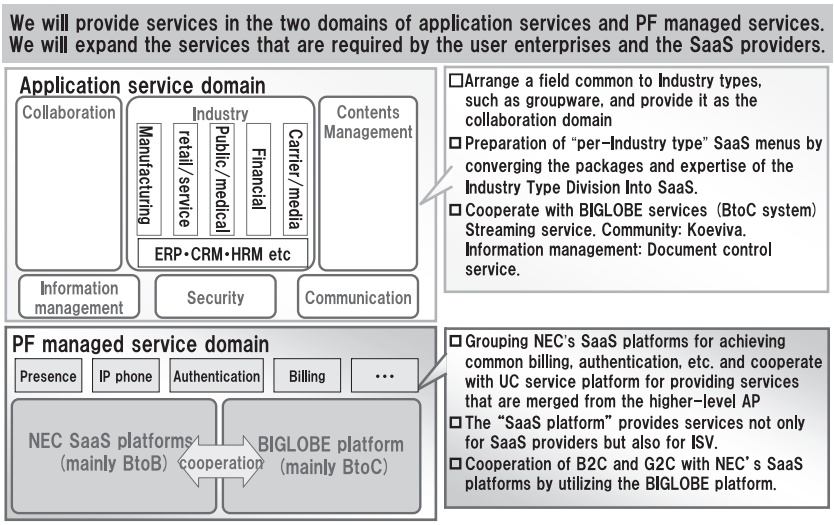

Fig. 4 Applications and platforms.

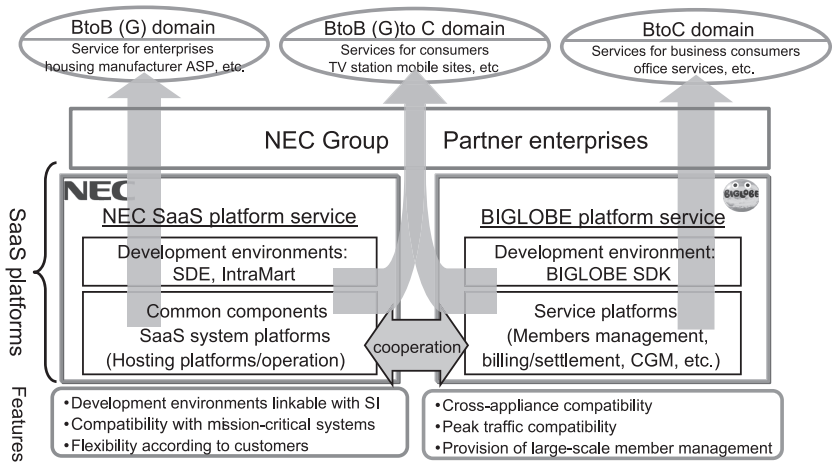

Fig. 5 SaaS Platform Services.

Group (May 2008).

The NEC development program with respect to SaaS is characterized by the five features; 1) deployment of services in the two domains of applications and platforms; 2) provision of SI/service hybrid type services; 3) provision of SaaS platform services meeting the needs of each customer; 4) support for development of new businesses and services utilizing SaaS; 5) establishment of the SaaS Business Innovation Program.

(1) Deployment of Services for Applications and Platforms

The main applications planned are the SaaS business service based on the expertise in Industry type SI that NEC has cultivated for many years and the SaaS services for Industry type-common package software of NEC, such as groupware. In the domain of platforms, we will provide the functions and components required for service delivery as the platform service to suit the SaaS service providers with applications (**Fig. 4**).

(2) Provision of SI/Service Hybrid Type Services

For both large-scale and medium-scale business customers, we will provide a mission-critical system-cooperated SI service by starting from the Industry type solutions centered on the SaaS service. Specifically, we will prepare (a) a development guide and framework, (b) system linkage components, (c) a service collaboration guide and (d) verification examples of the linkages between the backbone systems and the NEC services. We will also support seamless linkages between the SaaS services and the existing systems.

(3) Provision of SaaS Platform Services Meeting the Needs of Each Customer

We intend to offer a platform service according to the needs of each customer. For the BtoC businesses deploying services for individual customers, we offer a platform service by utilizing the platform and expertise of BIGLOBE. For the information system departments of large and medium enterprises, we offer the flexible platform services of NEC for BtoB usage with a substantial development environment and components. For the purpose of fusing BtoC and BtoB, we offer services by linking the above two platform services and optimizing them according to purpose (**Fig. 5**).

(4) Support for Development of New Businesses and Services Utilizing SaaS

For the new businesses and services being developed by the customer and partner enterprises, we offer trial-type services utilizing the SaaS platform service and service components. This strategy will reduce the development costs and implementation speeds of new businesses and thereby promote their availability. When these enterprises start such services at the actual operation level, we can upgrade the scales of service resources and commence construction of dedicated service platforms. In addition to system support, we will also arrange menus for business plan consultations and application design support in order to offer services for supporting efficiency improvements and the term reduction of planning and design.

(5) Establishment of SaaS Business Innovation Program

NEC has established the SaaS Business Innovation Program to meet a variety of customer needs. We will bring together partners in the three domains of applications, platforms and SI, and will expand the SaaS line and associated services based on collaboration and co-creation projects with the partners. We will also promote the conversion of partners' applications to SaaS and the adoption of a common framework, as well as the compatibility of the operating procedures of the applications we provide for the customers and appropriate system linkage methods.

4. Acceleration of Unified Communications by SaaS

At present, SaaS is being applied mainly among the business-type common packages such as business type applications and groupware, but the expansion of a SaaS provision service is also expected in the domain of UC. This is because, when the carrier NGNs and "enterprise version NGNs" are prepared, SaaS is expected to enable comfortable use of real-time communication tools such as telephone, teleconferencing and data sharing, which have hitherto been restricted due to the communication quality and the cost of private line usage. Among the UC systems of enterprises, it is also expected that the optimization of systems including development and operation costs will be advanced by separation of high competence jobs and other jobs by means of SI+ services.

Component modularization based on SOA procured as SaaS in the job application will facilitate the embedding of the means of fast communication in job processes by integrating the UC application/component specific to each enterprise. For instance, with CRM (Customer Relationship Management) in which a large volume of job communications is generated, customization will be possible, such as that in which an SaaS application calls the person in charge by IM or telephone, according to the data condition and situation.

At NEC, we are concurrently planning a UC application and UC platform component provision service together with the SaaS implementation of UC applications to support SaaS applications that are relevant to each job process or area of use.

5. Conclusion

Diffusion of NGN will make it easy to implement systems with real-time communications that have been difficult to implement using the Internet or enterprise intranet technologies. Meanwhile, the provision of SaaS by carriers and service providers will make possible the construction of an optimum enterprise system based on a combination of SaaS and specific enterprise systems.

Backed by the diffusion of NGN and SaaS, NEC's Unified Communications will lead to the construction of ubiquitous enterprise systems that can cover all types of business situations.

Services

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