

NEC's UNIVERGE®360 - Enabling True Role-Based Services in Unified Business Communications

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NEC

Executive Summary

Industry analyst research has revealed the top three issues on every executive's mind – maintaining a competitive advantage, attracting and retaining customers, and designing business strategies. Communications companies now have the opportunity to provide these executives with a way to address these issues. They must put people back in the center of business communications. They must learn how to take advantage of the convergence of IT and communications and see how to look forward to a software future which takes into consideration their investments in people and technology.

This paper discusses NEC's UNIVERGE®360, which is NEC's approach to unifying business communications. It provides a foundation for understanding the importance of putting people at the center of communications and reveals how your communications needs determine the Unified Infrastructure, Unified Communications and Communications Enabled-Business Processes necessary for a true Unified Business.

Roles and Preferences for the Knowledge Worker

To understand how the UNIVERGE360 approach can transform communications into a Unified Business, consider Amanda – a specialist in field sales. Amanda needs full access to staff and corporate sales figures, selective access to company-wide profit and loss statistics and limited on-demand links to the Engineering and Product Development teams. Amanda has worked with mobile platforms ranging from cellular phones to tablet PCs for more than a decade, but she is in transition. Her continued use of a Blackberry requires participation in dedicated wireless email networks, but she has begun to use a dual-mode phone operating in both cellular frequencies and Wi-Fi meshes. She wants to be ready for WiMax services as well but does not want to think about log-ins or specific protocols as she switches from phone to tablet PC to RIM Blackberry.

From her corporation's point of view, Amanda's single log-in should serve as an authentication and authorization feature that follows her through a variety of enterprise, metropolitan, and nationwide networks. The company's IP-based data systems and gateways should handle mobile presence without complex translations, and security services within the enterprise should allow her full access to the networks she is authorized to access while automatically sending challenges for limited-access systems. The QoS mechanisms placed on access links should provide necessary bandwidth for static data, voice, and video services with predictable delay characteristics.



While the services outlined above have been promised by both equipment providers and software-framework developers, most of what they have actually provided lacks particular aspects of the end-to-end access vision. Enterprise equipment vendors have begun to partner with software developers, but they still lack mobility and client log-in services. Mobility software startups can create secure follow-me services viewed from the client's perspective, but the services do not include reliable links to unified messaging infrastructure in the enterprise. Only NEC can make this vision a reality from start to finish today through its Unified Infrastructure, Unified Communications, partnerships and services.

NEC recognizes that essential elements are necessary to achieve a more unified and efficient enterprise. Too many telecommunications equipment providers limit their definition of Unified Communication to just the network because the plumbing is seen as equivalent to the full communication system. NEC pays close attention to the implementation and updating of infrastructure, but we do not believe the story ends there – it is merely the foundation upon which UNIVERGE360 is built. With this foundation, Unified Communications encapsulates all end-user applications in a single environment common to mobile devices and desktop environments. These are two of the elements that make up a Unified Business, which is defined by a user's role in a business process, as part of a team, and as a communication consumer in her own right.



Unified Infrastructure

Unified Infrastructure is composed of three elements – the data center, network and desktop and end-points. NEC addresses each of these elements through its products and partner products. Many organizations have moved to a model where one data center manages all infrastructure – even voice! These businesses have been led to believe that this structure provides better control and easier management. This is simply not the case. Voice is complicated. To properly optimize voice for any network – whether NEC or an existing one – experts are required.

Through more than two decades of developing data center and carrier-based infrastructure solutions, NEC's Unified Infrastructure has taken advantage of leading purpose-built architectures, including the SV7000/8000 communication servers and gateways, as well as complementary products developed by partners. All infrastructure products from NEC are scalable by design and utilize a single software image. Reliability, security, and fine-grained Quality of Service (QoS) are standard features of all platform elements, and all are managed from a common end-to-end management system.

A significant expansion to enterprise infrastructure is taking place with the upgrade of IPX and UNIVERGE® SV7000 families to the new UNIVERGE® SV8000 family. The UNIVERGE® SV8100 and the UNIVERGE® SV8300 are based on use of the Session Initiation Protocol for client-side IP services. They form the basis of an IP Multimedia Subsystem and Fixed-Mobile convergence strategy. and integrate Elite IPKII and UNIVERGE IPS architectures with full support of IP and SIP.

What this means is that the SV8000 Series serves as the single management platform for a host of services such as email, instant messaging, converged voice communications, and presence notification. It can provide the portal to corporate back office software services such as CRM, ERP and order-processing. And these services can be accessed from PCs, fixed XML terminals, or mobile devices.

NEC enterprise infrastructure is rounded out with HYDRAsTOR grid storage architecture, which utilizes the same rack space as members of the SV8000 Series while offering self-healing fault-tolerant solutions for storage.

NEC also offers Assured Mobility™ wireless LAN network elements, such as UNIVERGE controllers, access points, and mobile handsets, for augmenting FMC support. Digital Signage, which includes controllers and NEC-developed displays, provides a system for managing and scheduling video, still image, and audio/video feeds.

The NEC infrastructure repertoire also includes voice client devices, including the full line of UNIVERGE IP deskset phones. Like the software application suites, the IP phones themselves use XML as the basis for open-interface application development. In addition to fixed-location IP phones, the SP30 softphone enables end users to call from any location using their enterprise extension, while utilizing all the call features available on the UNIVERGE phones.

Unified Communications

The term Unified Communication (UC) is all the rage in the industry. It is being positioned as the next big thing in enterprise communications. The fact is that UC is more than just a killer app or a one-size-fits-all solution. UC is actually a compilation of applications that, according to most analysts and industry vendors, enable users to maximize productivity.

The technologies and applications in UC can include everything from contact center solutions, instant messaging, video and web collaboration to presence. UNIVERGE360's Unified Communications layer includes applications developed for three end-user environments: UC for Business, UC for Enterprise, and Assured Mobility.

For the small-medium businesses, UC for Business (or Business ConneCT in Europe), offers call-center, unified messaging, call control, and IM/chat features and can be integrated with Microsoft Office/Exchange and Microsoft Vista. UC for Business provides most of the features of a PBX directly to the PC and integrates employee, contact center, and operator functionality, enabling every employee to act as a *de facto* operator or virtual agent without detracting from other tasks on the desktop.

The UC for Enterprise suite offers an expanded version of the feature set for SMB as well as the conferencing, telephony, presence, and management tools necessary for larger networks.

The centerpiece of Assured Mobility is NEC's UNIVERGE Mobile Client, which provides full access to desktop applications in both cellular and Wi-Fi environments. Mobile Client extends advanced enterprise and productivity applications through the UNIVERGE SV7000 IP Controller and Mobile Gateway to a wide variety of smart phones, PDAs and dual-mode mobile devices running the Windows Mobile operating system. Applications appropriate for a mobile client include directory management, contact management, buddy lists, and instant messaging.

Unifying Business Communications

NEC's Unified Business vision provides a role-oriented view of the communication process unique to this offering. When the role of the individual is taken into consideration, it is then decided what processes need to be integrated with communications to have a true Unified Business that enables individuals to do their jobs without worrying about what technology or method of communication is needed.

It is also this level at which the SOA software tools from NEC Sphere play the most central part. Roles within the corporation and the end-users' personal preferences determine the communication methods and media chosen in a soft-engine model of virtual network creation.

In a hardware-based environment, applications for the end user can be developed using NEC's OW5000 application development platform. The Software Development Kit provides Application Programming Interfaces for SIP, real-time call control, SOAP call control, SOAP information and TAPI. The APIs then interface with NEC applications, third-party applications, Microsoft's Live Communication Server or their Office Communications Server.

In a software-based SOA environment, NEC Sphere provides the open interfaces necessary to easily integrate the software PBX solution with relevant business applications and make a meaningful improvement to communications efficiency. This is achieved through standards-based interfaces such as WSDL and XML.

Because using adaptive application-layer software tools based on an employee's role is a nascent concept in early stages of implementation in the industry, we will examine the use of Unified Business concepts using Amanda, the field sales agent we told you about earlier.

Expanding the Vision with Alliances

As a company with a century-old history and more than 30 years' experience melding communications and IT, NEC has a well-deserved reputation for excellence. But NEC also makes an extra effort to work with hardware and software market leaders to assemble optimal solutions for individual companies in the UNIVERGE360 portfolio. These companies are in both the large enterprise and emerging SMB sectors. Sometimes, partnerships are realized through direct acquisitions – as with Sphere Communications – or through joint ventures like the NEC Philips JV for IP Deskset and IP PBX development. But even partnerships implemented in a more arms-length fashion offer levels of integration unique in the industry.

NEC is a Gold-level distributor for Cisco Systems Inc., the router and switch company that maintains a market share in excess of 80 percent in several networking sectors. Cisco rarely assigns a Gold nomenclature to its partners, and the degree to which Cisco routers, Ethernet switches, and access devices are integrated into UNIVERGE360 enterprise suites allows a single logical image of a network to exist across equipment from both companies.

The same can be said on the software side for NEC's relationship with Microsoft Corp., whose presence in desktops and servers is as pervasive as Cisco's in network infrastructure. NEC has collaborated with Microsoft for more than 30 years – beginning with PCs developed for the Japanese market – and expanding in subsequent decades to cover most NEC corporate divisions. As a Gold-level Microsoft distributor, NEC has gained unique insights into the development of products such as Outlook, Exchange, and Vista. These insights provide information integrated into the UNIVERGE360 communications infrastructure.

NEC recently announced a global relationship with IBM to integrate NEC's UNIVERGE IP communication servers with the IBM Lotus® Sametime® 8.0 collaboration platform, the industry's number one instant messaging software for enterprise customers. Now, NEC customers that use IBM Sametime will have the benefit of integrated communications in their organization.

Other relationships are also critical to offering a comprehensive portfolio. NEC works with Sun Microsystems Inc. to use Sunfire servers in high-performance computing (HPC) environments and to collaborate with Sun in shared resources for the Sun Solutions Center for HPC.

Unisys Corp. uses the UNIVERGE family of IP appliances as well as NEC infrastructure to form the basis of the Unisys Communication and Collaboration (C & C) portfolio based on the Microsoft environment. Unisys and NEC have established a briefing center in Reston, Virginia to showcase successful examples of the integration of the two companies' portfolios.

NEC continues to work with new partners through both the UNIVERGE Solutions Partner Program and an associate program. The former is a formal partnership program for integrating hardware and software products in UNIVERGE360. Currently, more than 2,000 companies are involved in UNIVERGE Solutions. The associate program provides training and support from NEC Unified Solutions to ensure that associate partners and resellers can provide solutions that meet NEC's high standards.

NEC's Role as a Leader in Converged Communications

Only a handful of large transnational corporations can claim to have more than a century's experience developing telephony and computing networks. In recent years, many of these companies have disaggregated their expertise by shedding groups working on semiconductor development, optical component development, and even development of end systems such as gateways and PBXs. Some global giants outsource the bulk of their system design and system manufacturing to companies over which they have little control.



As a stark contrast, NEC relies on its own divisions for component supply in both chip and optical domains while retaining a merchant semiconductor business as well as divisions for communications infrastructure and IP deskset sales. In fact, NEC is the worldwide leader in enterprise telephony sales.

NEC recognized the convergence of computing and telecommunications 30 years ago when it launched its "Computers and Communications" research effort in 1977. Since then, developers in basic applied research at NEC have been responsible for winning more than 48,000 patents, putting the company in the top of the U.S. annual patent rankings for 12 years.

During the course of three decades, many in the communications industry have vacillated between direct sales and reseller-only approaches. NEC consistently has offered a number of direct and indirect channels to suit customers' individual needs. Its integration expertise extends across all realms of both IT and communications. In North America, these complementary direct sales and dealer network roles result in more than 6,000 individuals and over 1,400 channel partnerships delivering NEC products, placing UNIVERGE360 in a central role in the portfolios of many types of system integrators and network resellers.

The Relevance of Vertical Market Segments

Nowhere is this more visible than in NEC's dominance of particular vertical markets. In key North American vertical accounts such as healthcare, government, higher education, and hospitality, NEC offers a dedicated team in its National Sales Assistance Center to better define and craft solutions at enterprise and small-business levels.

In healthcare, NEC is involved in bringing more mobility to the medical environment through deployment of Assured Mobility products. NEC has worked with customers at the level of biometrics, display, network security, server and data-network and communication infrastructure and devices to develop solutions appropriate for many different sizes of health care facilities. For example, the Fraser Health Authority had NEC install an IP telephony and video conferencing system that achieved a 90 percent call-transfer success rate within one month, saving the authority millions of dollars annually.

In recent months, NEC's government efforts have focused on critical communications and disaster recovery operations. The *Mobile Voice and Data Unit* and *Emergency Notification* offerings provide business continuity in emergencies, which improves disaster recovery times. NEC provided wireless communications to Environmental Protection Agency first-responders in the aftermath of Hurricane Katrina. NEC is even present in 22 Veterans Administration hospitals nationwide.

In academia, two specific programs have been emphasized in recent months. The *Emergency Campus Notification* system addresses campus safety issues while integrating with universities' campus-wide mobile voice and Wi-Fi plans. This system sends real-time emergency alerts to students, faculty and staff. The *Digital Signage* product suite described above provides a unique way for universities and other institutions to implement campus advertising with video elements. The University of New Mexico uses a customized IP communications system from NEC that uses the MA4000 management and maintenance system. The management environment improved productivity significantly and enables IT staff to troubleshoot problems for the benefit of both professors and students.

The hospitality industry can take advantage of several NEC packages optimized for improved hotel guest services, including *Guest Request Handling*, *Guest Room Phone Service* and *Guest Mobility*. In North America, NEC has achieved a 40 percent market share of hotels on the Las Vegas Strip. In Japan, NEC completed the first comprehensive hospitality industry IP telephony suite, which includes a centralized security environment, wired and wireless high-speed Internet, and advanced multimedia entertainment. International customers include the Mandarin Oriental.

UNIVERGE360: A Full Circle of Unified Business Communications Capability

As customers in a number of vertical markets are discovering, NEC's three levels of unification provide the only true integrated communications solutions in the industry. Whether the communication process is viewed from the enterprise or from the individual mobile user level, IP-based capabilities should be comprehensively based on the user's role, the business application, and the underlying infrastructure.

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About NEC Unified Solutions, Inc. NEC Unified Solutions helps companies unify their business through innovative software, applications, development tools, and services. NEC offers a complete portfolio for unified communications, wireless, voice, data and managed services, as well as systems integration and application development. NEC Unified Solutions, a wholly owned subsidiary of NEC Corporation of America, serves Fortune 1000, as well as small to mid-sized businesses across the globe in vertical markets such as hospitality, education, government and healthcare.

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