



## **Product Overview**

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# **NEC**

## **Featuring Spherical Release 8.0.**

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**October 2011**

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## Executive Summary

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For years, telephony and business communications were largely synonymous. The telephone offered instant communications, and its primary alternative was physical letters that could stretch a conversation over weeks. In the 1990s email became prevalent, and more recently we have gained mobile phones (voice and SMS), IM and presence, video options, and social networks. As communication paths and options increased, so did the complexity to manage it all (mentally and technically).

The underlying technologies also changed. Analog gave way to digital, then VoIP, and now Unified Communications (UC). While VoIP effectively replaced digital telephony with newer technology and a near identical value proposition, UC has the broader vision to unify multiple communication modes in terms of approach and management.

UC is not a product or feature, but rather an approach that varies by the needs of an organization. A UC strategy for one organization may look a lot like a PBX, while another organization may opt to eliminate telephones. Few assumptions can be made about the hardware or scope of a UC solution. Nor can it be assumed that vendor UC solutions offer a common set of features and services. As a result, the definition of UC lies with the beholder, who must understand the menu thoroughly before ordering. While set menus do exist, it is also common to take an à la carte approach to complete or complement a UC solution.

NEC supports both. Its products offer a fairly broad interpretation of UC as well as hooks and partnerships to enable a multi-vendor approach. NEC was founded in 1899 and originally worked closely with Western Electric to create the Japanese telecommunications infrastructure. The company is well established as a recognized player in business communications, not just in the US and Japan, but globally. Some studies list NEC as the world's third-largest telephony vendor, with noted success in both SMB and very large deployments. Key vertical markets include hospitality, education and health care.

NEC business communication systems evolved from digital communications, to VoIP, to Unified Communications. Each generation, the company picked up valuable experience and features. NEC offers several business communications platforms, but its two most strategic platforms are the SV8000 appliance series and its Spherically solution. The SV8000 comes in three flavors—the SV8100, the SV8300 and the SV8500—each targeted at different demographics. The SV8000 line has been the company's primary UC platform for the past several years.

While the SV8000 series products continue to sell well, NEC believes the market will shift away from appliances toward a more extensible, software-based model. This is a fairly bold vision coming from what has historically been a hardware company. In 2007, NEC acquired Spherically Communications and has been diligently both selling and improving the Spherically UC platform. Spherically is NEC's first communication platform delivered as software-only. While it is capable of being a telephone system replacement, its vision is much broader. NEC is positioning Spherically as a communications tool that can facilitate data center objectives including virtualization and centralization, as well as integration with other data center services and strategies. Spherically can interact with end users via a variety of modes, methods and devices. NEC intends to allow customers to mold Spherically into whatever communications solution is needed—from a traditional PBX to a loosely coupled service for other business applications.

NEC is effectively straddling the present and future of unified communications with these two platforms. The company can't simply decide to focus on Sphericall, as it represents a very different product than the SV8000 series. The majority of its SV8000 dealers are not Sphericall savvy, nor is a changeover a simple matter of product training, as Sphericall's true value lies in its approach to IT infrastructure. In the four years that NEC has owned Sphericall, it has yet to build a bridge between Sphericall and the SV8000 series. The two platforms' dealers, features and devices remain largely separate.

This report addresses the SV8000, but focuses primarily on Sphericall. Describing Sphericall can be a challenge, as it is different things to different people. It can be both a phone system and a background communications enabler for IT. The telecom folks describe its UC features including call processing, endpoints, contact center, IM/video, etc. For IT architects, it is more about Web technologies, extensibility and openness. Web services allow disparate computers to easily interact and transact. Later this year, Sphericall Release 8 is expected. Release 8 looks to be a major event for Sphericall—and likely the one where NEC publicly transitions Sphericall as not just the company's future, but its present as well.

#### Key Findings:

- Sphericall is a broad set of services that includes PBX functionality.
- Sphericall is highly extensible—it has a broad SDK, adheres to SOA and uses Internet standards and Web services.
- Sphericall is as much an IT solution as a UC solution. Sphericall enables a thin client architecture through the use of RIA clients, its SOA approach will facilitate extensibility, and its HA and virtualization approach will integrate with existing or broad IT procedures. NEC is truly addressing voice as an IT service in its architecture.
- Sphericall has highly simplified licensing and pricing—particularly when considering the complexity and capabilities of the product.
- Sphericall is an impressive attempt to align a product with overall IT and voice directions as well as NEC's overall corporate strategy, which is far broader than UC and telephony.
- Sphericall is different things to different people—IT and voice-centric prospects will view the product totally differently.
- Sphericall has a near-term deficiency with regard to collaboration—however, a major improvement in this area is on deck for spring 2012.
- NEC will have a significant challenge in building awareness and a channel for Sphericall.
- Sphericall is strong in telephony and extensibility; however, it is a bit weak in mobility and collaboration.

This TalkingPointz report covers key elements of both Sphericall and NEC to help users assess its organizational fit as a UC solution. Organizations adopting SOA, standards and thin clients will find Sphericall particularly attractive. Its simplistic pricing and highly available architecture, however, will also appeal to users focused on core voice and contact center solutions.

## NEC Networks Overview

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NEC is a multi-national corporation headquartered in Tokyo, Japan, and founded as Nippon Electric Company in 1899. Yes, that is correct—100+ years ago. NEC has a local presence in 44 countries, employs more than 142,000 people, owns 283 subsidiaries, and has managed to file more than 74,000 patents. CEO Nobuhiro Endo reported FY2010 worldwide revenue at \$37.5 billion USD. The company is organized into five major business units. Below, the percentage indicates each segment's contribution to sales (FY2010):

- **Platform Business, 12 percent:** Offers **IP telephony and UC** along with PCs, servers, mainframe computers, supercomputers, storage products, software, networking and professional services.
- **IT Services Business, 26 percent:** Provides systems integration, maintenance and support, and outsourcing services to government agencies and private-sector companies.
- **Carrier Network Business, 19 percent:** Offers network infrastructure, network control platform systems and service delivery platform systems to carriers.
- **Social Infrastructure Business, 10 percent:** Provides industrial systems that support social infrastructure, including broadcasting systems, artificial satellites, CCTV surveillance, broadcasting systems, video equipment, fire and disaster prevention systems, aerospace and defense systems.
- **Personal Solutions Business, 25 percent:** Offers mobile handsets, personal computers, personal communications equipment, monitors, projectors and Internet services to individuals and private-sector companies.
- **Other solutions, 8 percent:** Includes lithium-ion rechargeable batteries, capacitors, LCD panels and lighting equipment.

Telephony is not new to NEC. Its telecom products date back to early telecommunications, including pull-cord switchboards. The company has provided telecommunications solutions to both business and carrier sectors for most of its history. NEC is among only a handful of companies that offer telecommunications and UC products worldwide.

## Recent Performance

Total revenues in FY 2010 were US \$37.5 billion, and the company reported an overall loss of US \$83 million. NEC also reported losses in FY08 and FY05. NEC does not provide profit and loss information by division or region. However, there are indicators that its telephony and UC solutions are doing well.

In NEC's 2011 Annual Report, the company lists numerous global achievements including the IP telephony system for InterContinental Hotels and Resorts in Shanghai and the IP-based telephone and television system solution for Mandarin Oriental in Macau, China: "Turning to network products, NEC captured the No. 1 share of the Japanese enterprise telephony market and the No. 3 share of the corresponding worldwide market."<sup>1</sup>

John Malone of Eastern Management believes 2010 may have returned the company's best overall sales

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<sup>1</sup> NEC 2011 Annual Report, p. 17, citing data from Gartner, "Market Share: Enterprise Telephony Equipment, Worldwide 2010," March 29, 2011, based on seat licenses shipment basis, 2010 calendar year.

performance in a half dozen years, specifically citing the company's reorganization (creation of NEC Corporation of America, or NECAM; see "Company Organization") and success in the verticals of government, health care, higher education and hospitality: "We believe NEC had 40 percent of its North America sales on systems larger than 250 lines."<sup>2</sup>

NEC provides information on its worldwide quarterly line shipments. For 2010, NEC experienced 12 percent global growth. In Q111, global shipments increased 10 percent compared to the year prior, with particularly strong growth in Asia. In Q211, NEC reported 9 percent worldwide growth over the prior year. Larry Levenberg, Vice President and General Manager, reported to dealers at the NEC Advantage 2011 conference that NEC took the leadership position in the US small and medium-size businesses (SMB) market and holds 22.6 percent market share.<sup>3</sup>

In March 2011, a devastating earthquake and tsunami hit northern Japan, wiping out entire cities and industrial supply chains. NEC specifically cited the earthquake, along with weakness in the technology-services, for a 36 percent drop in net profit in its fiscal Q4. The Wall Street Journal reported, "The March 11 disaster, which damaged companies' production facilities in northeastern Japan and led to supply-chain problems, came as NEC was already struggling to stay profitable."<sup>4</sup>

In the earthquake's aftermath, NEC and many other companies undertook an extraordinary effort emphasizing their industrial capabilities to a skeptical world. One such example involves a damaged plant in Japan, jointly owned by NEC, Hitachi and Mitsubishi. It was widely predicted that the damages and subsequent shortages would impact worldwide supply chains (particularly in the automotive industry) through the end of 2011. Yet the three owners working together, along with their customers, managed to restore production levels in September.

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<sup>2</sup> "2010 PBX Sales in North America Grew 16 percent," by John Malone, Eastern Management Group, published on Nojitter.com, June 27, 2011.

<sup>3</sup> Not validated. Levenberg cites data published by T3i Group.

<sup>4</sup> "NEC's Quarterly Profit Falls 36%," by Juro Osawa, The Wall Street Journal, May 10, 2011.

## Current NEC Portfolio

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NEC produces several telephony and UC platforms. The DSX and UX5000 series provide core voice solutions to smaller businesses with simple requirements. The SV8000 series of appliances and Spherically are targeted to business with broader UC requirements. The company is shifting its focus from its strong-performing appliances to its forward-looking Spherically platform. NEC complements these platforms with a broad portfolio of UC, wireless, voice, data and managed services, as well as systems integration and application development. The telephony and UC divisions are part of the IT Platforms business group. Specific revenue is not publicly provided for these products and services.

### SV8000 at a Glance

- ✓ Appliance-based solutions
- ✓ Each family networkable as a single system
- ✓ Three platforms/appliances
- ✓ Targeted UC application for each appliance
- ✓ Broad selection of endpoints
- ✓ Hybrid platform (analog, digital, IP)
- ✓ Scales from small to very large

### Spherically at a Glance

- ✓ Based on open standards
- ✓ Scalable: suitable for user levels from 50 to very large account sizes
- ✓ Distributed architecture
- ✓ Productivity applications built in
- ✓ Desktop applications for Macintosh or PC (via Adobe Air)
- ✓ Pure IP— analog and digital support through gateways
- ✓ Software based
- ✓ SIP-based endpoints
- ✓ Engineered for a Services Oriented Architecture (SOA)
- ✓ Runs on Microsoft Server
- ✓ Optimized for Web Services
- ✓ Integration ready with Microsoft infrastructure (Active Directory [AD], Outlook and Exchange)
- ✓ Virtualization ready (VMware, HyperV)
- ✓ Meets Stringent Department of Defense JITC Certification

### UNIVERGE SV8000

The NEC SV8000 refers not to a product, but to a family of appliance-based solutions that have a reputation for solid performance and a reasonable value. The product line was introduced in 2008, but represents decades of evolution from NEC's prior telephony platforms. Each appliance supports analog, digital and IP endpoints as well as traditional and SIP trunking.

The family incorporates three platforms: SV8100, SV8300 and SV8500. The SV8100 serves small-business users with two to 512 extensions, but has a sweet spot around 25 to 75 users (single system). The SV8300 targets the 50-to-500 space; it is particularly attractive for users migrating from a NEAX 2000 as it can support the older Series E phones. The SV8500 serves the large and very large, including hospitals, enormous hotels and universities. It has a sweet spot around 500 users, but is commonly used in very large deployments with multiple servers. All three share many components and endpoints, but the appliances themselves are physically different products. The SV8100 comes in two form factors (rack or wall mount), the 8300 comes in two rack-mount components (1U + 2U), and SV8500 is a single 3U rack chassis.

	Extensions Typ/Max	Networked Sys/Exts	Management	VM	UM and UC
<b>SV8100</b>	30/512	16/712	WebPro PC Pro 8100	VM8100 InMail	Desktop Suite UM8000 Mail UCB
<b>SV8300</b>	200/1536	46/2048	MA4000* PC Pro 8300	VM8100 InMail	UM8000 Mail UCB UCE
<b>SV8500</b>	750/16,000	64/192,000	MA4000* PC Pro 8500		UM8700 UCB UCE

\*MA4000 is a Web-based management portal.

Each platform shares a common core feature set, and each is targeted, packaged and priced for different demographics. The platforms themselves have upgrade paths, but there is no migration path between the various UC offerings. Proprietary NEC networking (CCIS or NetLink) can interconnect the appliances and even consolidate multiple systems into one large virtual system. However, virtual systems are limited to like appliances, with the exception of SV8300 to SV8500.

The SV8000 series includes several NEC-branded options including:

- Hospitality Management Solution: Allows specialized hotel/motel property management integration with the SV8100 or SV8300.
- Series PC Pro/WebPro: A troubleshooting and management tool for both administrators and users.
- InRouter: All-in-one networking solution, supports T1 and Ethernet ports in an in-skin router.
- VM8100: Up to 16 ports, can forward messages to email with optional license.
- UM8000 Messaging:\* Synchronized unified messaging solution, charged per user and per port. Features Outlook and Notes integration, supports fax.
- Digital, IP, DECT and Wi-Fi endpoints:\* Broad full range of phones. Softphone (SP350) is supported on the SV8300 and SV8500.
- Multimedia Conference Bridge: An in-house conferencing solution, up to 16 channels, PC access portal.
- Voice Security Recorder:\* Call recording.
- SonicView:\* IP call recording.
- Communication Analyst:\* Simple, graphical software package to review voice activities.

\* Branded NEC, but produced by third-party partner. Not all NEC-branded endpoints are made by NEC.

The product line is largely mature, but NEC continues to roll out enhancements. In 2011, NEC launched three new phones and two releases to UC for Enterprise (UCE), with significant new features including IM federation.

NEC offers a range of branded phones: digital, IP and wireless. About half still use paper labels instead of self-labeling LCD screens. New in 2011 are three new endpoints:

- The ML 440 is an IP DECT phone with four programmable buttons. Its access point can support up to four simultaneous voice paths each, and the system supports up to 20 bases.
- A new IP phone with 28-character-by-4-line LCD display, 8 lines, POE support, LAN port for PC and full duplex speaker was announced for late in the year.
- A low-cost, 12-line digital phone without a display has also been announced.

The NEC-branded phones run in a proprietary mode, but SIP endpoints are supported. NEC does not offer any video phones; however, third-party video endpoints from Polycom are supported.

Two particularly successful verticals for the SV8000 are health care and hospitality. The SV8000 supports HL7, an ANSI specification for clinical data and interoperability between health care information systems. This allows the PBX to keep up with hospital system changes such as the location of patients (with automatic PBX updates). Similarly, in the hospitality industry, the SV8000 supports strong integration with major hotel Property Management Systems (PMS), which notify the PBX of various events such as check-in and check-out.

The SV8000 series offers numerous options for messaging and UC. Only the InMail voice mail and Desktop Suite are made by NEC; the others utilize technology from partners (branded as NEC). Further complicating these options is that core features vary by implementation type (server or blade) on the SV8100 and SV8300.

NEC has numerous UC options for each of the SV8000 appliances. The entry-level UC available for the SV8100 is Desktop Suite. To access more features and capabilities, UCB (UC for Business) is available for all three of the platforms. The more advanced features are bundled in UCE, or UC for Enterprise. Generally speaking, there is no migration path from one UC feature suite to another.

**Desktop Suite** includes PC Assistant, PC Attendant and a softphone. PC Assistant gives a user easy access to desktop features and settings via their desktop computer. The solution also enables caller-ID lookup in a user's Outlook database to display caller name information. PC Attendant provides operator or attendant staff access to intuitive point-and-click call processing features. It does not replace a desktop phone, but rather works in conjunction with it. The softphone can eliminate the need for a physical phone, and can make/receive calls directly from the computer desktop. Desktop Suite also supports desktop video calling, presence and IM, and collaboration tools enabling a user to share their desktop presentation or whiteboard.

**UCB or UC for Business** is designed for small and medium-sized businesses. The solution is branded NEC, but produced by Zeacom. It can be purchased in conjunction with any of the SV8000 series products and Spherical. It is available as a blade on the SV8100 and SV8300, or as software for installation on a separate server.

**UCE or UC for Enterprise** is the flagship UC bolt-on for the SV8300 and SV8500 platforms. It involves both a server component and a desktop client that consolidates for the user numerous forms of communications. The core feature capabilities of UCE include:

- Messaging
- Presence
- Video
- Collaboration
- Conferencing
- The platform combines several mature technologies including the voice mail engine from AVST, sold separately by NEC as UM8700. With UCE, the voice mail engine integrates with presence-enabling features such as updating the voice mail outgoing greeting based on a calendar.
- Presence was upgraded in 2011 to support XMPP gateways and federation with other sites.
- UCE supports up to 16 video collaboration windows without a multi-port control unit (MCU). Technology is provided by XL Connect.
- The UCE client is done via a Web page interface. The good news is any smartphone or Web device will work; the bad news is the interface lacks client benefits such as richness and speed.

## UNIVERGE Sphericall

Sphericall is not a PBX in the traditional sense of the term. Rather, Sphericall is a platform for unified communication services which happens to include traditional PBX functionality. **Being a PBX is more of a feature than identity.** Sphericall treats communications as an application or service—directly to end users and/or via Web services to other business applications that need not concern themselves with communication infrastructure. Realistically, **Sphericall is ahead of where the market is, but nicely aligned with where the market is headed.**

NEC acquired Sphere Communications, and its product Sphericall, in 2007. Although NEC has kept the product available and left its sales channel intact, NEC has not positioned Sphericall as its primary platform. Instead, the company continues to sell and develop the SV8000 appliances while diligently improving Sphericall with its engineering teams in Chicago, Ill., and Hilversum, Netherlands (near Amsterdam). Sphericall is NEC's next-generation solution, completely software based and Web savvy. As a result, NEC currently straddles two worlds—the present (SV8000) and the future (Sphericall).

Sphericall is designed to take advantage of the ongoing assimilation of telecom into IT. Historically, IT and telephony were separate: separate systems, separate cables, separate departments and separate technology trends. Over the past decade, the technologies moved closer together. First came physical convergence with VoIP, and then came system overlaps such as unified messaging and hosting voice on industry servers. NEC is betting the trend will continue to a point where telecom is viewed as an IT service that is potentially blended with other IT initiatives and systems. Sphericall is how NEC intends to capitalize on the next wave of convergence.

Trend-wise, the telecom world is marching toward:

- Adoption of SIP trunks and SIP endpoints
- A high degree of focus on mobility, and tight integration with mobile devices
- Ongoing adoption of multi-modal communications
- Enabling of distributed workforces and mobile productivity
- Increased adoption and acceptance of videoconferencing tools
- Centralization of communications infrastructure

Trend-wise, the IT world is marching toward:

- Virtualization of servers
- Thin client or client-less computing via HTML5 and other browser technologies
- An increasing need to blur and mix applications via a services architecture
- Software technologies such as REST, SOAP, JSON, HTTP, XML and WSDL
- Integration with Microsoft infrastructure, particularly Active Directory and Exchange

NEC believes the evolution of UC will lead to enabling organizations to embed, mash-up and integrate communications into existing or emerging IT applications and architecture. Spherical is designed to be independent of both network and computing infrastructures, effectively ready to integrate into data center applications and user environments.

As an added bonus, perhaps not by coincidence, Spherical falls into NEC Corporation's published vision. NEC's "Vision 2017" states products and services should help people live a better life by:

1. Enabling better mutual understanding between people through sharing and utilizing information anytime, anywhere, with anyone.
2. Sharing information interactively without human intervention to support the safety and comfort of people and the preservation of the environment.

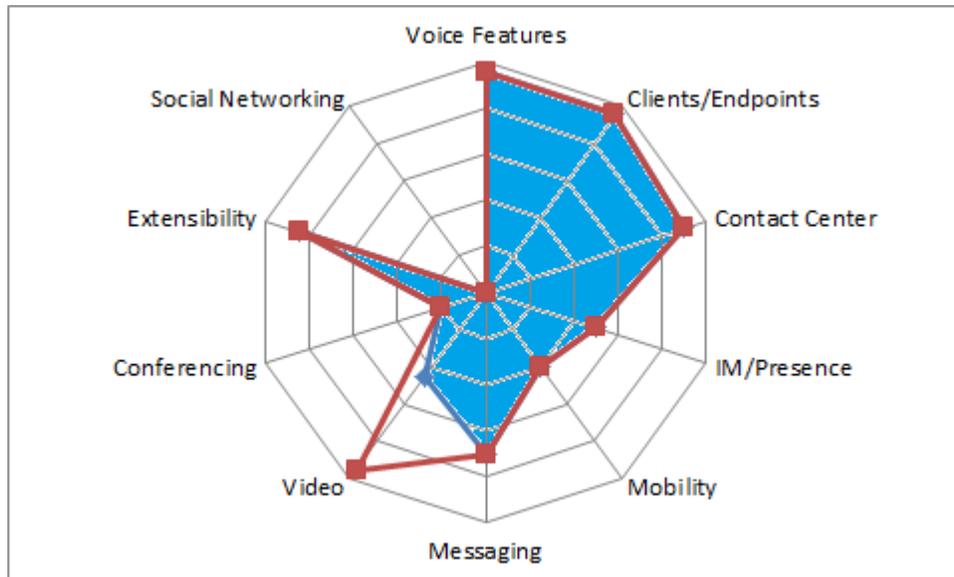
Spherical's UC capabilities improve "mutual understanding between people" through rich communications and collaboration. Its mobility strength allows for anytime, anywhere communications, with anyone. Communications in general support safety, but Spherical is also E911 compliant, and comfort and environmental impact are addressed with teleworking, virtualization, centralization and reduced travel.

Additionally, in the 2011 NEC Annual Report, the Platform Business section clearly states NEC intends to leverage cloud services for future growth. "NEC aims to drive further growth in its operations by focusing on three priority businesses: the unified communication (UC) business, common infrastructure for cloud business and server business." Spherical hits the first one directly as a UC application server. NEC has not clearly stated a cloud strategy for Spherical, but it is expected. Spherical is cloud ready and optimized for cloud delivery including its infrastructure, applications and delivery models. Common infrastructure is addressed via virtualization, server bundling and SOA.

The company has been talking up Spherical much more lately, including predominant positioning at the 2011 Enterprise Connect industry conference. In 2010, NEC began targeting selected SV8000 dealers to get them Spherical ready. Release 8 of Spherical, delayed and now expected in the autumn of 2011, will likely be the turning point.

NEC is reasonably cautious. The SV8000 series continues to sell well, and Sphericall is a horse of a completely different color. The skills necessary to sell and support Sphericall are different, as will be the reasons customers will purchase it. NEC positions Sphericall as a highly extensible, feature-rich, standards-based, scalable platform. Sphericall will be the most open and broadest UC platform NEC has offered.

### TalkingPointz UC Web: Sphericall Release 8



As the TalkingPointz UC Web diagram indicates, Sphericall Release 8 can be seen as a reasonably broad and mature telephony solution with robust voice features, a broad range of clients and endpoints, and a decent contact center. Release 8 marks a major move regarding the platform’s contact center as NEC will begin moving away from its UCB (Zecom) solution to its own NEC-developed BCT solution, previously only sold in Europe. The Sphericall Desktop is supported on Windows Vista, Windows 7 and MacOS.

Sphericall has a reasonable IM and presence solution, but currently does not offer any type of interoperability with public IM networks or even other Sphericall implementations. However, federation is planned. There is also limited integration between Sphericall’s presence and desktop applications such as Outlook (in Release 8).

Sphericall Release 8 supports mobility via its desktop app that can direct calls to any number. Additionally, it offers an iPhone client. The Android solution requires Adobe Flash. Simultaneous ring is complemented with advanced filtering rules (time of day, status, caller ID), but it uses timers to attempt to route unanswered calls back to the system’s voice mail. Remote phones require separate solutions for security (such as a virtual private network), and there is no ability to substitute outbound caller-ID numbers placed from a mobile device.

Regarding messaging, Sphericall Release 8 ideally relies on Microsoft Exchange for unified messaging. The advantage of using Exchange is a single message store for unified messaging. Voice mail can be retrieved and played within Outlook or via telephone through Sphericall’s native front-end. However, the solution is missing some advanced features such as fax support and transcription. NEC also offers its UM8700, made by AVST, which offers some more advanced features.

Spherical does natively support point-to-point video calls placed either through its desktop client or third-party SIP video phones produced by Polycom or compatible. Advanced video conferencing features such as multi-point, recording, or integration with mobile devices and room systems will require third-party solutions. The TalkingPointz Web Chart indicates a more complete video solution with NEC's partner Polycom.

The video collaboration capabilities are largely expected in Release 8.1 in spring 2012. Release 8 has very limited conferencing and collaboration features. At this time, Spherical has no native capabilities or strategic partnership around social networking.

Spherical really shines when it comes to its extensibility capabilities. The solution adheres to the SOA model and thus supports SOAP and XML technologies. The software development kit (SDK) supports both voice and presence solutions and comes with sample code and a simulator. Spherical supports WSDL, HTTP, HTTPS, remoting and a variety of development tools. Essentially, it insists on being mashed-up with other IT applications and services.

NEC does not charge for additional implementations of the server. Each server implementation automatically load-balances, and if the system is properly engineered it can absorb a server failure. Spherical works with Quintum Tenor and NEC gateways, which can be configured to provide failover service.

NEC is backing up Spherical with several advanced service capabilities including NEC Professional Services for installation and/or customization assistance, and remote monitoring and management services. Additionally, Software Assurance includes support and major release upgrades, and a short list of hardware is available from NEC with overnight replacement options.

## **Core Features**

- IP-PBX
- Business continuity
- Unified messaging
- Mobility and Wi-Fi solutions
- Integrated softphone functionality
- Rich presence
- Integrated conferencing bridge and desktop videoconferencing
- Collaboration solutions
- IM/chat
- Contact center solutions
- On-demand recording (software based)
- SIP, Analog, T1 or PRI trunking
- Broad support for endpoints from NEC and Polycom natively supported
- E911

### **Contact Center Features (R8)**

- Skills-based routing
- Call back
- Customer IVR and auto attendant
- Standard and custom reporting
- Web chat and email queuing
- Wallboard on RIA technology available to tablets
- Customer database integration
- Customizable views including logged-in queues, view individual agent activity and state, queue views

### **SIP and Softswitch Support**

- Broadsoft—Oct 2006, joint certification with Broadsoft
- Asterisk—Oct 2006, by Sphere reseller
- Sansay—Oct 2006, by Sphere reseller
- Sylantro—2006, by Sphere
- XO Communications—Nov 2008, by Allied Telesis @ Yokota
- CBeyond—Certified by Sphere in 2006
- Global Crossing—Certified by Sphere in Jan 2007
- Fidelity Voice—by reseller in Nov 2007
- Broadvox—by customer in 2007
- BandTel—Certified by Sphere in 2006
- Nex—Vortex—by reseller in Nov 2006
- USLec now Paetec—customer has deployed, 2007
- McLeod now Paetec—customer has deployed, June 2007
- Netlogic acquired by Voxitas—Feb 2007
- Grande Communications—Jun 2008
- Telcentric—Cabo San Lucas, Mexico—by Allied Telesis, Sep 2006
- Xtra—Spain—by Allied Telesis, Sep 2006
- Priority Telecom NV—Netherlands—by Allied Telesis, Nov 2006

### **Other Characteristics of Interest**

- PBX1 Certification through JITC
- Customization of Web pages and content on IP phones using standard XML commands and programming; license-free micro-browser SDK
- Built-in real-time load-balancing

Miercom tested Spherical performance in May 2011 and published these key findings:<sup>5</sup>

- NEC Spherical maintained 100 percent availability during IPv4, ICMPv4 protocol mutation attacks.
- During failover tests, the system handled 16 calls per second with no failures.
- Spherical completed 1.4 million calls and registered 48,000 users.
- In IPv4 Protocol Mutation testing, Spherical properly blocked more than 42,981 protocol mutations from 298 variants in two protocol suites.

## **Release 8**

Release 8, planned for late 2011, represents a major upgrade to Spherical, including:

- New subsystem for Instant Messaging including archiving and IM history.
- RIA server to deliver services to new UC clients. Interfaces with Active Directory.
- Web Administration Portal: Clientless administration.
- Distributed Services including FTP, DFS and IIS, enabling load-balancing.
- Significant improvements to the user experience.
- Expanded integration with Polycom HDX video products.
- New RIA UC desktop client (based on Adobe Air) with integrated presence, IM, recording, and icons for status and one-click features. Office integration including smart-tag support and Outlook plugins. Also, a new softphone.
- New client for Apple IOS devices (support for 3G/4G and Wi-Fi).
- New User-Based Licenses: UA: Name user for UC; STL: Station License; VML: Voice mail or unified messaging license. All three available in a SAL bundle.
- New System-Based Licenses: TAL: trunk license; SRL: ad-hoc recording; MSA: to allow external application to control media services.

## **UX5000/Aspire**

The UX5000, previously known as Aspire, is a hybrid solution for small businesses. It is available in a cabinet-style housing (typically wall mounted) and a rack-mountable configuration. The UX5000 is a telephony product, not a UC solution, although it does support SIP trunks and IP, digital and analog phones. NEC's SV8100 effectively replaces the UX5000 as a small-business UC telephone system plus offers optional UC features. The UX5000 is typically sold through different dealers than are the SV8000 products. The UX5000 offers two internal voice mail options, a simple conference bridge and ACD solution. The system leverages NEC's broad range of IP and digital endpoints including wireless sets and its own video-capable softphone.

## **DSX**

The DSX series products are hybrid systems designed for small-business and residential users. Notable features include built-in auto attendant, caller ID, doorbell integration, optional voice mail (IntraMail), and most recently home automation integration (HAI). This series uses its own unique NEC phones. The DSX sales channel tends to involve different dealers than the SV8000 solution, but there is some overlap.

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<sup>5</sup> Miercom Lab Testing Summary Report, May 2011, Report 110315.

## NEC Company Information

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### Company Timeline

Among NEC's accomplishments is being the first Japanese joint venture in the US. NEC innovations can be found across sectors ranging from the new Nissan Leaf (battery technology), to the recently launched IKAROS spacecraft (radio technology), to the new O2 Olympic stadium under construction in London. The list below provides a sample of major milestones from its history:

- 1899 Nippon Electric Limited Partnership was formed as a joint venture with Western Electric. The first Japanese-US joint venture with foreign capital.
- 1902 Completes its factory for telephone and switch production.
- 1904 Begins exporting telephones to China.
- 1919 Produces first domestic Type 1 common-battery switchboards for long-distance toll calls.
- 1927 Delivers first domestic-made A-Type automatic PBX to Mitsukoshi Department Store.
- 1929 Produces domestic A-Type automatic switching system for central telephone office.
- 1952 Receives Deming Application Prize (first time for company in communications industry).
- 1953 Produces microwave PTM (Pulse Time Modulation) multiplexing equipment.
- 1955 Produces first domestic-made XB switching system for PBX.
- 1958 Develops fully transistorized NEAC-2201 computer.
- 1960 Begins development of ICs. Develops time division electronic switching system.
- 1961 Introduces business division system.
- 1963 Establishes Nippon Electric New York (presently NEC Corporation of America).
- 1979 Announces PC-8001 personal computer.
- 1977 Announces NEAX 61 digital switching system in the United States.
- 1978 NEC America Inc. opens plant in Dallas, Texas, to manufacture PBX telephone systems.
- 1986 Begins shipping the NEAX61 digital switching system.
- 1995 Unveils world's first prototype 1Gbit DRAM.
- 2002 Completes "The Earth Simulator," the world's fastest supercomputer system for resolving global environmental problems.
- 2007 Acquires Sphere Communications for \$42 million.
- 2009 NEC UNIVERGE UX5000, and IP 24E Deskphone named Best Channel Products by Business Solutions Magazine.
- 2009 NECAM formed as a merger between NEC Unified Solutions and NEC Infrontia.
- 2011 NEC Latin America SA created, narrowing NECAM's focus to US and Canada.
- 2011 NEC inUCB for SV8100 and SV8300 recognized by Unified Communications Magazine as 2010 Product of the year.
- 2011 NEC UNIVERGE Spherically supported on VMWare as a virtual appliance.
- 2011 NEC UNIVERGE SV8000 gets certified for Skype Connect.

### Company Organization

Telephony and unified communications reside in the Platform Business unit headed by SVP Masato Yamamoto. This business targets government agencies and enterprises, and offers servers, storage, software and IP telephony systems. It uses the UNIVERGE brand across many of these products. NEC then organizes into subsidiaries around the world—in the US and Canada, the wholly owned subsidiary

is NEC Americas or NECAM, which is headquartered in Irving, Texas. Takayuki Okada is the current President and CEO of NECAM. NECAM was responsible for all of the Americas until April 2011, when NEC opened NEC Latin America S.A. headquartered in Sao Paulo, Brazil. In EMEA, the subsidiary is NEC Unified, headquartered outside Amsterdam, Netherlands, and headed by Paul Kievit.

NECAM is organized into two large divisions: Enterprise Services Unit and Enterprise Technology Unit. Heading up ETU is SVP Masaaki "Jim" Nakajima who is responsible for NEC's suite of business communications products. Executives specifically focused on telephony and unified communications are Larry Levenberg and Frank Viola.

- Takayuki Okada, CEO of NECAM: Okada oversees operations of the company's diverse business lines in the US, including unified communications, server and storage solutions, optical network systems, microwave radio communications and biometric security. Okada is also a Senior Vice President of NEC Corporation, Japan. Okada was appointed to this role in March 2009.
- Masaaki Nakajima, SVP of NECAM: Nakajima is responsible for providing NEC's suite of business communications products and solutions dedicated to development, marketing, sales and technical training support.
- Larry Levenberg, Vice President and General Manager: Levenberg is responsible for telephony and UC business sales strategy. He oversees the development of US channels including dealers, direct sales and distributors. Levenberg joined NEC in 1986.
- Paul Kievit, President NEC Unified, NL: Prior to joining Philips in 2003, Kievit was Managing Director of Avaya Netherlands and before that General Manager Telecom Solutions at global systems integrator Getronics. In September 2008 Kievit was named President of NEC Philips Unified Solutions.
- Hiroki Shiba, CFO and SVP Corporate Planning, NEC Unified NL: Shiba joined NEC Corporation in Japan in 1982 and has since then spent over 18 years outside of Japan, 14 years in the US and four years in Netherlands, since the joint venture NEC Philips was established.

## Ownership

NEC America (NECAM) is a wholly owned subsidiary of NEC. There is no separate ownership of the Telecom subsidiaries worldwide. Thus the only available information regards the parent Japanese company.

NEC is traded on Tokyo Stock Exchange, under ticker code 6701. As of March 31, 2011, there were 2,604,732,635 outstanding shares issued to 279,583 shareholders. The top 10 shareholders collectively held about 22 percent of the company.

Name of Shareholder	% of Shares of Common Stock Held
<b>The Master Trust Bank of Japan, Ltd. (Trust Account)</b>	4.45
<b>Japan Trustee Services Bank, Ltd. (Trust Account)</b>	4.20
<b>SSBT OD05 Omnibus Account-Treaty Clients</b>	2.76
<b>Japan Trustee Services Bank, Ltd. (Trust Account No.9)</b>	1.94
<b>Japan Trustee Services Bank, Ltd. (Trust Account No.4)</b>	1.81
<b>NEC Employee Shareholding Association</b>	1.79
<b>Nippon Life Insurance Company</b>	1.61
<b>Sumitomo Life Insurance Company</b>	1.58
<b>State Street Bank West Client-Treaty</b>	0.90
<b>Japan Trustee Services Bank, Ltd.</b>	0.88