Realizing the promise of next generation services revenue

Major developments in the telecom industry over the past ten years, driven by technology and government regulations, are transforming legacy voice networks such as the Public Switched Telephone Network (PSTN) and the Public Land Mobile Network (PLMN) into a ubiquitous, scalable, flexible and affordable global multi-services network based on Internet Protocol (IP). This new packet switched network is often called the next generation network (NGN) and follows the Internet model, where voice is but one of many real-time applications that can be supported.

As was the case with intelligent network development in the 1980s, the PSTN and PLMN evolution into the next generation network could be a windfall for the IT industry. Convergence provides the opportunity to leverage expertise and experience in IP technology for the deployment of new, consolidated communication infrastructures based on commercial off-the-shelf (COTS) components and the development of new multimedia services.

Visit us at Supercomm at booth 64045 to see our standards-based BladeCenter, Linux, middleware and partner solutions in action

The game has changed

There are two main motivations to move from existing networks to NGN. The first is to reduce the cost of existing services by converging onto a packet-based infrastructure, and the second is to increase revenue by facilitating the introduction of new services. Examples of these services include voice, video-conferencing, security applications, presence, location, instant messaging, e-mail and many other enhanced services. The key offering, Voice over IP (VoIP), is a critical step in the evolution toward the converged NGN multimedia infrastructure of the future. In fact, virtually all circuit-switched equipment vendors and service providers around the world are moving to, or have made plans for, a migration to IP. New network and systems technologies allow service providers the ability to offer many new profitable services that they couldn't deliver on the legacy network and provide existing applications at a lower cost. Many service providers are now realizing the benefits that an open converged NGN architecture offers by deploying and managing their services on open standards-based platforms.

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Open is as open does

For service providers, the ability to open new, lucrative markets and generate substantial revenue is the ultimate goal. The problem is how to get there quickly and profitably. The core of the telecom business has always relied on the ability to interoperate through open standards. Common standards enabled the telephone to grow from a novelty invention to a disruptive technology[1] that has transformed the business world and created a trillion dollar industry.

Now, new open standards are disrupting the traditional telecommunications value chain by enabling new entrants to challenge the incumbent providers. To remain competitive, the incumbents must transform their offerings to leverage a converged infrastructure based on these open standards. The challenge is to turn open standards into a complementary force driving new revenue, and to transform the legacy cost structure to fund a new converged value chain. The switch from proprietary, siloed technology to open standards allows for an expanded ecosystem with many sources of creative solutions that enhance revenue. To take full advantage of this broadened capability, openness must be available in all parts of the value chain.

NGN services are being brought to the market enabled by open standards and open source initiatives such as:

- *OCAF Carrier Grade Open Framework*—a hardware-independent architecture for the telecom industry, based on a collection of open standards focused on off-the-shelf technology as the basis for new solution development
- *Carrier Grade Linux*®—a hardened open source operating system, based on open source Linux, for the stringent demands of the telecom environment
- *Service Availability Forum (SAF)*—an open industry forum that has a focus on availability features required to run in a telecom environment

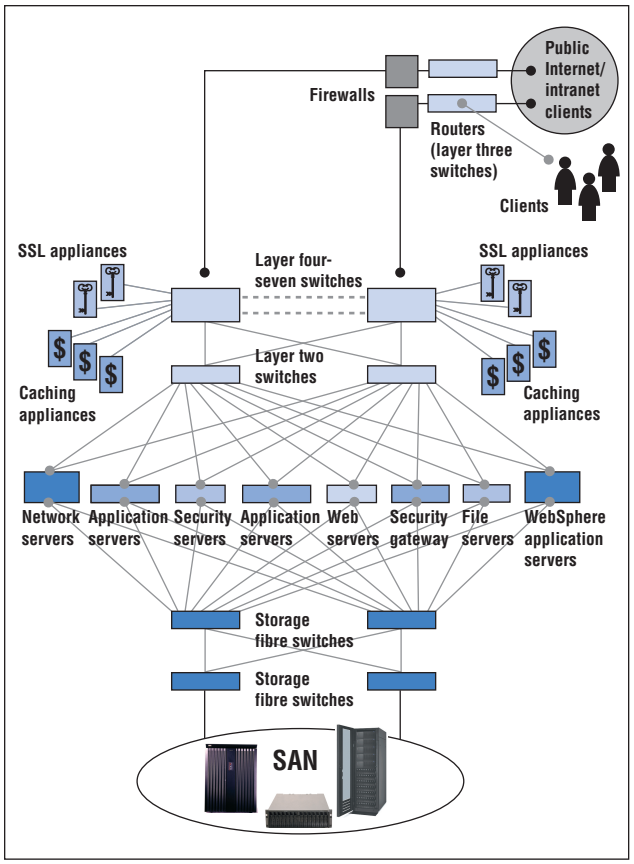
Hardware, too

Open standards means open choices on all levels, including hardware. Widely adopted open standards allow solutions built by different vendors to work together seamlessly, cost effectively and securely. Adopting an open source operating environment such as carrier grade Linux ensures that solutions built on one platform will run on others that have been enabled for Linux. Equally important is the ability to run on an open hardware platform. COTS technology addresses the requirement to help reduce total cost of ownership in an open environment. COTS platforms, combined with a rich selection of telecom-specific features such as Network Building Specification (NEBS) and European Telecom Standards Institute (ETSI) compliance, open the playing field to many possibilities. This means greater flexibility and performance help achieve lower total cost of ownership.

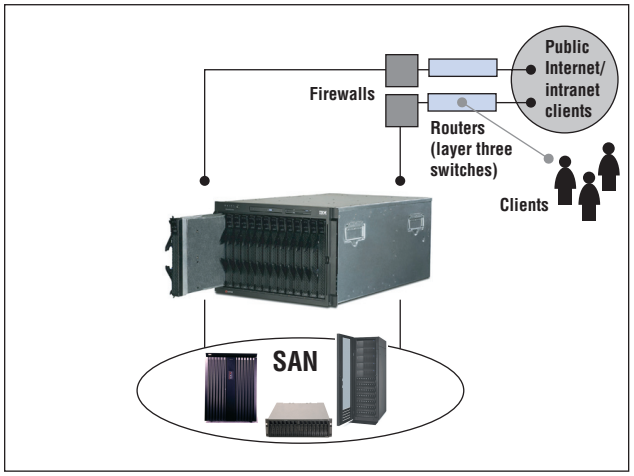
The IBM @server® BladeCenter™ platform is an open set of building block components that can be assembled and reconfigured as needed to support data, network and security operation centers, and central office application requirements. BladeCenter provides an open, carrier-class platform ideal for provisioning and managing applications and services for internal or managed clients. This can enable the simplification, consolidation and convergence (as shown in the diagrams on the next page) of numerous computing requirements into blades that fit in standard shelves and racks, managed from a centralized control console. BladeCenter enables NGN solution developers to shift focus from the base platform infrastructure components to service creation and revenue generation.

This helps reduce operating costs (maintenance, spares, training, management) and increases the return on investment through reuse, virtualization of resources, and lower acquisition costs leveraging the volume of COTS components. Open standards also dramatically reduce the cost and complexity of network integration.

The value of partnership



Legacy infrastructure



BladeCenter collapses complexity

IBM is an avid supporter of open architectures such as Linux because we believe in the power of open standards in making the on demand world actually work. It provides more value for our clients. It is a vital tool in building the systems and processes that institutions will need in the years to come. That's why IBM has invested over US$1 billion to develop Linux-based products for use in the real world. Already, Linux is firmly rooted in the day-to-day operations of companies in diverse industries – from film animation, Web commerce and online auctions to automobile manufacturing, aerospace design and pharmaceuticals.

Open systems and platforms allow for a rich community of partners to provide cost-saving and revenue-producing solutions. A growing number of IBM Business Partners, network equipment providers and independent software vendors, such as Bridgeport, Brooktrout, Cirpack, Baypackets, IP Dynamics, jNetx, OpenWave, Rocket Software and Nextone Communications are supporting the open BladeCenter and Linux offerings to develop and take their solutions to market. Today we have over 2,000 telecom solution partners that have been tested and proven on BladeCenter and Linux. By implementing these solutions, service providers can:

- Decrease dependency upon proprietary platforms or operating systems
- Add new features, create adaptations and take advantage of new technology as it emerges
- More easily incorporate best-in-class applications – softswitch, Voice over IP, multimedia conferencing, unified messaging, wireless or wireline – from independent software vendors
- Gain increased flexibility in upgrading and managing the IT environment

To be successful in deploying NGN services on open platforms, service providers need solutions from providers committed to open standards, open source and open platforms. These solutions need to be tested and proven for network readiness. IBM has developed the Network Transformation Center (NTC) to test Java™- and Linux-based network applications on the IBM BladeCenter in a telecom network environment. This allows service providers to accelerate the deployment of applications to achieve revenue goals while focusing on their customers' wants and needs. IBM has the capability to bring together open COTS platforms based on award-winning IBM BladeCenter technology with the leading Linux operating environment, and qualified, tested and proven network partners. It is this powerful combination that gives service providers the ability to realize the promise of next generation services revenue today.

Find out more

For more information about how IBM can help you leverage the on demand operating environment to deliver greater value from your offerings, contact your IBM representative, or visit the following Web sites:

IBM Telecom main Web site
ibm.com/industries/telecom/

IBM Telecom Industry Network Partners
www.developer.**ibm.com**/marketing/industrynetworks/telecommunications/participants.htm

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IBM Corporation
1133 Westchester Avenue
White Plains, NY 10604
U.S.A.

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[1] Clayton M. Christensen, Scott Anthony and Erik Roth, "Seeing What's Next," Harvard Business Schools press, 2004.