Full service broadband and connected lifestyles

by Arun Bhikshesvaran , CTO and Vice President of Strategy and Marketing, Ericsson North America

The increasing availability of broadband connectivity at home, at work and on the move is shaping the lifestyles of millions of people around the world. Broadband connectivity is delivered via multiple flavours of technology and is driving innovation in all aspects of life, including travel, shopping, entertainment, teleworking, education and healthcare. These broadband experiences are increasingly powered by an architecture called Full Service Broadband, a collection of technology components and associated services designed to deliver high quality ubiquitous broadband connectivity.

Mr Arun Bhikshesvaran is currently CTO and Vice President of Strategy and Marketing for Ericsson North America; he is responsible for identifying Ericsson's long-term vision, defining the overall company strategy. Mr Bhikshesvaran has over 15 years of experience in wireless communications having served in a variety of roles within the industry including Systems Solutions and Integration, Field Engineering, R&D and Global Product Marketing.

Mr Bhikshesvaran earned a Masters Degree in Electrical Engineering and has completed a Post Graduate Executive Program at Columbia Business School.

According to figures published in the March 2008 issue of the Broadband Trends report, published by the Windsor Oaks Group, the global fixed broadband market will swell to nearly 590 million by the end of 2013 from its current size of 330 million. In North America, fixed broadband subscriptions are expected to touch 100 million by 2013, growing from the current 74 million subscriptions.

A segment of the population popularly referred to as 'digital natives' is fuelling this growth spurt as they discover new ways to stay connected with their communities, create and consume content and invent new ways to learn online. Enterprises are realizing immense productivity gains from a workforce that is connected in new ways, as well as simplifying business processes and delivering enhanced value for their customers. Broadband connectivity and services are also poised to deliver unique solutions to the global issue of sustainability.

Understanding the goals of next-generation service delivery and translating them into an architecture that delivers them efficiently requires deep knowledge of network technologies, their evolution and end-to-end integration and interoperability expertise.

Broadband melting pot

North America is home to a unique combination of leading players coexisting in a single market. Global leaders in media, entertainment and Internet applications work alongside service providers who use wireline, cable and wireless networks to deliver connectivity. The consumer electronics industry is participating in this environment with a wide range of connected devices including music and video players, televisions, computers, book readers and other productivity-oriented gadgets. Innovation in the applications space continues to deliver unique applications for services such as video-telephony, connected navigation and Internet TV.

The delivery of broadband services for people at home, in the workplace and on the move is creating new revenue streams for service providers. Profitable delivery of such services requires the deployment of networks capable of scaling progressively while providing attractive total cost of ownership characteristics over their lifetime.

At the forefront of meeting this requirement is the Full Service Broadband architecture - a unique collection of technology components and associated services designed to deliver

ubiquitous broadband connectivity and enable compelling experiences for people and enterprises. Full Service Broadband architecture provides critical components for scalable IP networks covering device ecosystems, broadband access, transport, control, applications, charging, services and operations management.

Enabling broadband-connected lifestyles

Figures from The Windsor Oaks Group show that out of the 74 million fixed broadband subscribers at the end of 2007, 52 per cent were served by cable, 44 per cent by DSL, three per cent by Fibre to the Home (FTTH) and one per cent by other broadband access technologies like WiMAX.

Fixed broadband networks are undergoing a major modernization phase with the deployment of deep-fibre access leveraging technologies such as Gigabit Passive Optical Network (GPON), Point-to-Point Ethernet and VDSL2. There is also considerable R&D investment in next-generation PON architectures that will serve us well beyond the next decade. FTTH is therefore predicted to enjoy the most rapid growth over the coming years.

However, broadband is no longer provided only over fixed access - mobile broadband is growing fast with the new 3G technologies enabling speeds comparable to ADSL. In one year, the number of 3G HSPA subscribers increased by ten times, from three to 32 million.

Mobile technology is important in making broadband accessible everywhere, cost-effectively, and the fastest growing mobile broadband services worldwide will be based on HSPA and LTE. HSPA is already widely deployed in many countries around the world and is igniting the mobile broadband revolution. New experiences for people and enterprises are being created and the value of anytime, anywhere connections is being discovered every day. LTE (long Term Evolution) is the natural next step for most existing mobile broadband technologies, including GSM/3GHSPA, CDMA and Time Division-Synchronous Code Division Multiple Access (TD-SCDMA).

Fixed and mobile solutions for delivering broadband are complementary and will continue to co-exist. Fixed broadband based on deep fibre technologies will have the advantage in terms of access speed per user and be more suitable for video and large screens, while mobile broadband will add the anywhere, anytime advantage.

The choice of broadband access technology reflects the operator's broadband strategy for their target markets, their existing assets, competition and regulatory framework.

Whichever access technology is deployed, there needs to be a reliable, secure and cost-optimized transport network, designed to balance the short-term needs of optimizing fixed broadband networks with the flexibility required for full-service broadband. It needs to be simple and cost-efficient enough for operators to add multi-access mobility, new access technologies and new services.

The need for all-IP

As the prevalence of IP technology continues to grow rapidly from the edge (enterprise desktops and home computing devices) to the core, the need for a modern, flexible architecture for all-IP networks is apparent.

Multi-service, multi-access routing platforms provide high-performance edge routing capabilities and deliver compelling triple-play services across fixed and mobile networks.

Transmission and transport networks play a key role in the cost-efficient transportation of broadband traffic; and microwave and optical solutions complement access and routing products.

IP-based services provide the flexibility to blend multiple services and provide creative and compelling communications and entertainment experiences. To build and deliver such services in a scalable fashion, IP Multimedia Subsystem (IMS) is now widely accepted as the preferred technology of choice. Built on carrier-grade platforms designed for high-performance applications, IMS core and application servers are complemented by a rich ecosystem of application and client developers. Together this represents the industry's leading ecosystem working to deliver new, revenue generating applications.

These advanced entertainment and advertising services, and the emergence of new business models, require new media delivery and management systems as well as flexible charging and billing capabilities.

Broadband solution suppliers must be able to offer solutions that enable operators to leverage as much of their existing infrastructure and business processes as possible, while providing a path towards truly converged multimedia services.

This demands expertise across a range of technologies - including deep fibre access and transport, multi-access routing and digital video broadcasting - with end-to-end technological competence to meet the challenges and opportunities opened up by Full Service Broadband.

ERICSSON
TAKING YOU FORWARD