

The new connected Lifestyle - Powered by Full Service Broadband



The increasing availability of broadband connectivity at home, at work and on the move is shaping the lifestyle of millions of people around the world. Delivered using multiple flavors of technology, broadband is driving innovation in all aspects of life, including travel, shopping, entertainment, teleworking, education and healthcare. These broadband experiences are increasingly powered by full service broadband, and its associated network architecture designed to delivery high quality ubiquitous broadband connectivity as Michael Martinsson, Strategic Marketing Director , Ericsson A.B., describes.

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.

A segment of the population popularly referred to as 'Digital Natives' is fueling 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. Another important segment, *Enterprises*, is realizing immense productivity gains from a workforce that is connected in new ways, by simplifying business processes and by delivering enhanced value for their customers. Broadband connectivity and services are also poised to deliver unique solutions that support the global quest for 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, a melting pot for industries to converge on

Global leaders in media, entertainment and Internet applications are working alongside service providers who use fixed, mobile and, often now, also converged 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 things like 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 these requirements 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.

Two increasingly important aspects to plan carefully in the expansion and evolution of network infrastructure are capacity and flexibility. Networking infrastructure, especially in the metro and core backhaul parts of the network, must deliver at lowest total cost of ownership possible both: a) the capacity to cope with future demand in an incremental way; and b) the flexibility to respond to a wide range of changing traffic patterns and service characteristics.

Enabling the broadband-connected lifestyle

Figures from the *World Broadband Information Service* (WBIS) show that out of the 352 million broadband subscribers globally at the end of 2007, 21 per cent were served by cable, 66 per cent by DSL, 12 per cent by FTTH and one per cent by other broadband access technologies. FTTH is predicted to enjoy the most rapid growth over the coming years.

Fixed and mobile solutions for delivering broadband are complementary and will continue to co-exist.

Fixed broadband networks are undergoing a major modernization phase with the deployment of Deep-Fiber 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.

Fixed technology will, for the foreseeable future, have the advantage in terms of access speed per user, guaranteed quality of service, and be more suitable for video and large screens.

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 *Long Term Evolution* (LTE). *High Speed Packet Access* (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.

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. Technologies in the backhaul network, such as wavelength division multiplexing provide the additional capacity expansions needed for the ongoing bandwidth explosion associated with full service broadband.

Meeting 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 cost-efficient transport of broadband services, with microwave and optical solutions complementing access and routing products.

IP-based services provide the flexibility to blend multiple services to provide creative and compelling communications and entertainment experiences. To build and deliver such services in a scalable fashion,

IMS is now widely accepted as the preferred technology 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, these technologies create 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 Fiber Access, optical and microwave 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. ●

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