

Connected homes for tomorrow's lifestyles

by Fran Shammo, President and CEO of Verizon Telecom and Business

Tomorrow's connected homes will be a sophisticated ecosystem. In addition to sophisticated communications, access to information and entertainment, the applications that drive these devices will provide security, health monitoring, and connect people-to-machines, as well as machines-to-machines, to provide a range of services barely imaginable today. 4G wireless technology will increase data speeds by up to 10 times - comparable to today's wired broadband. Sophisticated smartphones will let users manage their homes, access media and connect to anything from anywhere.



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In an earlier issue of Connect-World North America, I described how advanced technology can enable a global enterprise to become an ecosystem of unified communications platforms that drive efficiencies and improve productivity across the business. For these companies, mere connectivity is no longer enough. They require integrated wireless and wireline technologies, a consistent communications experience across all platforms, and reliable access to their data and applications regardless of where they are or what device they're using.

Today a similar transformation is occurring in the consumer market. Previously distinct voice, television, Internet and mobility services are evolving into an integrated offering that promises to dramatically enhance users' lifestyles. This 'quadruple play' service takes formerly unrelated activities and integrates them into the household living space.

Not long ago, a home network consisted of two computers sharing the same printer. Today consumers can have dozens of digital devices in their homes that are capable of sharing media. This level of interconnectivity makes the home network look more like a corporate LAN. Just like the needs of businesses to share data throughout the corporation, consumers need to be able to move their media and other digital content between their devices. As the lines between business and home networks fade, users will be able to move content between their professional and personal lives, such as working on a presentation at home or monitoring household security from the office.

The 'connected home' requires massive amounts of bandwidth - both upstream and downstream - to manage all of the content consumed and created by its residents. Families need to download multiple streams of HD content on televisions and computers, especially for new bandwidth-

intensive applications like 3-D video. Multi-player gaming, video sharing and other interactive applications require fast uploading capabilities. Teleworkers and home businesses send and receive large files and need high-quality videoconferencing, and more students are participating in virtual classes as schools and universities move additional course work online.

As these and other multi-media applications grow in popularity, we expect to see a substantial increase in video services, all in higher definition than is possible today. In addition, technology platforms will continue to evolve and the barriers between wireless and wired networks around the world will begin to disappear. As a result, consumers and businesses will expect their applications to work the same, no matter which network they connect to. They will demand access to their digital content - regardless of where it's stored - anytime, anywhere, and on any device.

In less than a decade, broadband technologies have radically changed the world around us; it is amazing how much has happened in our industry during this time, and we've only scratched the surface. In keeping with the spirit of Moore's law, we'll continue to see broadband speeds rise, network capacity increase and connectivity spread around the globe. All of which will mean more innovation and greater opportunities for consumers and businesses to benefit in the years ahead.

A key enabler for the connected home is an ultra-broadband network, such as fibre-to-the-home. These smart networks provide the highest quality and reliability, and are easily upgradable to provide additional speed and capacity, making them ideal for the bandwidth-intensive applications that will be developed in the years ahead.

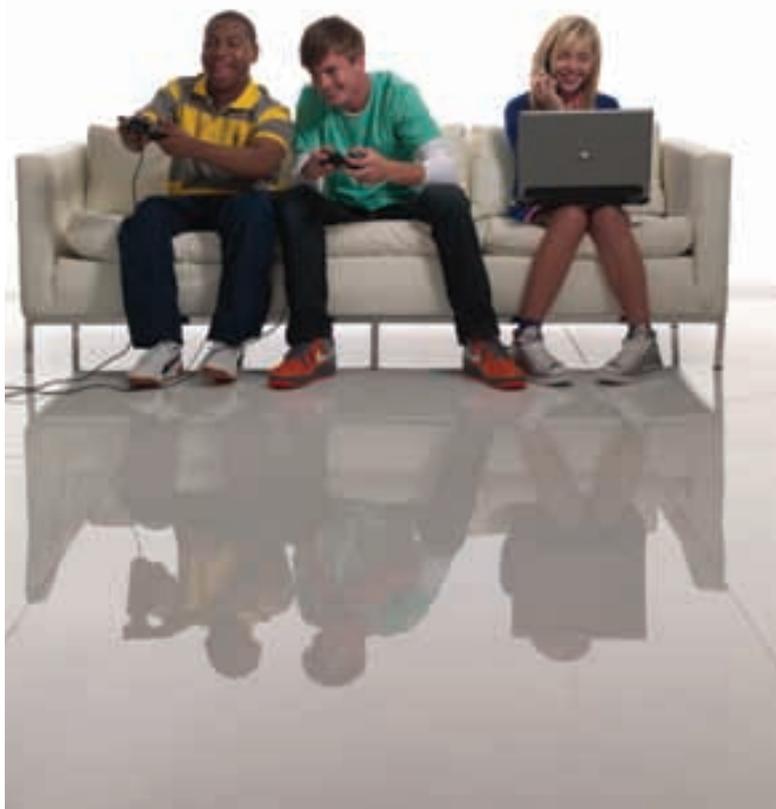
Intelligent broadband networks are also engines for job-creation and economic growth through greater productivity. For example, look at how these networks have dramatically changed the media landscape and its business models. Today virtually anyone with a broadband connection can be a writer, filmmaker, software designer or entrepreneur, with the ability to reach hundreds of millions of people worldwide.

As fourth-generation (4G) wireless technology enters the mainstream, data speeds on wireless networks will increase by up to ten times, making the wireless experience comparable to today's wired broadband solutions. Sophisticated smartphones will enable users to manage their homes, access their media and connect to nearly anything from virtually anywhere.

But 4G connectivity will deliver more than a faster smartphone experience. In the 4G world, wireless has the potential to connect just about anything, from lamps and thermostats to cars and parking meters. As 4G capabilities get embedded into our

environment, there's really no limit to the number of connections that can take part in the network. This 'Internet of things' will infuse intelligence into all our systems and present us with a whole new way to enhance our lives, our homes, our businesses and our economy.

Going forward, the home network can be used as a platform to deliver and manage a vast array of applications for the connected home. These converged services have the potential to provide life-altering benefits in areas such as health care, security and sustainability.



For example, tomorrow's digital home can include valuable applications for remote medical monitoring. Devices that measure a patient's vital statistics and automatically transmit critical data to doctors will provide independence to the patient and peace of mind to family members.

Security services for fire and flood detection will notify residents and emergency

responders of problems quickly and accurately. Imagine a security camera that instantly sends your smartphone a photo of a person ringing your doorbell, giving you the option to unlock the door remotely for a family member or a repairman.

In addition, the home network could include applications and devices for green initiatives like smart meters, appliance sensors and remote monitoring that enable users to maximize energy efficiency. Consider the energy savings of a home that uses sensors and GPS technology to automatically turn off your lights and air conditioner when you leave, and then turns them on when you pull into your driveway.

As more smart devices and applications become interconnected, the value of our broadband infrastructure expands exponentially.

In the communications industry there's something called the 'network effect', which means the more connections you have on a network, the more beneficial it is to its users. This network effect is an extremely powerful force. If a network is useful when it connects you to a million users, it's significantly more valuable when it has a hundred million users.

In the past, we thought of all those connections in terms of people. But today's broadband networks also connect people to machines, as well as machines to machines, and create billions of potential nodes on this increasingly intelligent, increasingly valuable grid.

Tomorrow's connected homes will be a sophisticated ecosystem that will be at the centre of people's lives. The intelligence of this system will be available to every device, offering people instant access to the things that matter most to them. The applications that drive these devices will provide unique opportunities for each of us to better manage and enjoy the world around us.