

Next-generation networks: a revolution in business communications

Dan Cole, head of product management at THUS, explains how next-generation networks are supporting a new wave of applications and services that are changing the face of business communications

The world of telecommunication is constantly changing. It seems like almost everyday, a new application or service is launched, promising bottom line benefits to businesses. These range from increased efficiency and enhanced employee mobility, to greener ways of working through the implementation of unified communications. This is an emerging technology for enterprises allowing employees to connect with colleagues wherever they are in the world by integrating technologies such as email, voice, presence and web conferencing to name but a few, into a single environment. An organisation's reliance on voice, video, email and the Internet has never been so great and it is vital that this lifeblood is supported by a network infrastructure that is secure, reliable and flexible for future growth. This is why converged infrastructures, more commonly referred to as next-generation networks (NGNs), are so important.

It is well known that NGNs provide businesses with a converged environment, capable of supporting the three vital lines of communication: voice, video and data. Without which, a business would cease to exist, or at the very least, struggle to compete in today's globalised, highly technical world.

Convergence across an NGN has become a reality with the widespread use of Multi-Protocol Label Switching (MPLS) technology. MPLS allows the cost effective delivery of all kinds of traffic by converting it into a digital format, compressed into IP packets and transporting it over a unified IP network infrastructure. Put simply, company information and services run across the same pipe with network interfaces responding to whatever is plugged into it. For example, if you were to connect a phone, the network would become a phone line, similarly, should you connect a computer, it would turn in to a data network & internet interface

The network as an enabler

NGNs provide the platform for utilising applications that will signal a new dawn in communications; one that will fundamentally change the way employees within the business interact with technology and make organisations increasingly efficient. Today's converged infrastructures allow a business to transition its entire communications requirements onto a single, coherent infrastructure that will, in the long-term, lead to cost savings through reduced management, maintenance and integration costs.

The trend towards convergence also means new business applications can be deployed quicker and increases the speed in which business expansion and adaptation can happen by removing traditional issues surrounding network interoperability. The network becomes an applications-centric infrastructure that bends to accommodate business requirements. Seen in this light, an NGN can help a company drive softer business benefits by enabling a new way of working. For example, using an NGN, a company can efficiently enable access to network resources from within and outside the office, as applications are not isolated on different network topologies. Furthermore, some businesses are assessing the use of video conferencing as a business tool to enhance communications, reduce carbon-footprint and add a 'human touch' to a meeting that would traditionally be conducted using a phone.

A source of competitive advantage

Industry savvy telecoms providers now actively promote the ubiquity of the NGN as something that can be used for both business advantage and potential financial gains in the long run. Moreover, by underpinning new applications with stringent Service Level Agreements (SLAs) and network performance monitoring, businesses have the added assurance that the network is geared to their needs and the way the organisation operates.

The inherent intelligence embedded in NGNs gives users access to applications that will improve the user experience, which will in turn improve employee productivity. Product development cycles are such that there will always be new applications being rolled out and we can expect to see a greater trend towards home working and video conferencing in the future. Emphasising products and services that run over the network can also help to meet wider business objectives such as meeting corporate social responsibility demands and pleasing financial stakeholders through reduced OPEX.

However, the benefits of NGNs felt in the business world go beyond the implementation of advanced applications and extend to higher Quality of Service (QoS) and enhanced security guarantees. QoS is achieved because Multi-Label Protocol Switching (MPLS)-enabled NGNs allow specific types of traffic, whether it is email, video or voice, crossing the network to be allocated different priority levels. By routing data in this way, each packet can be directed according to its priority, as well as its specific address. NGNs are also resilient and have the additional guarantee that, should a connection fail, the network can automatically re-route to ensure that it does not affect the underlying performance of the business. To add to resilience an NGN provides inherent security on the VPN together with robust entry/exit point protection to ensure that businesses and their data are fully secured.

Networking for the business

It is important that telecoms providers listen to businesses and work with them to ensure the network delivers the right services for that organisation. Telecoms providers need to become more than just a network provider; they need to become providers of the right applications that match specific business requirements. This partly explains why managed services form a key part of the telecoms industry today. For the business, this means they can devolve the management of hardware and software to a trusted provider that understands the specific nature of that particular company allowing it to focus on its core business, and outsource the operational details of the network to the telecoms provider.

Moreover, the growing maturity of NGNs means that certain telecoms providers are in a position to deploy network tools that show how individual components of the network are being used and customise it as the business demand dictates. On a practical level, businesses do not need to worry about managing the local area network (LAN) or wide area network (WAN) environments because this is done by the telecoms provider, meaning that they can instead concentrate on deploying business applications that enhance the end-user experience.

Transitioning to NGNs

The transition towards an NGN is more than simply replacing old, time division multiplexing (TDM) technologies with IP. Businesses need to embark on a migration towards converged applications by converging all of their voice, data, collaboration and mobility lines onto a single infrastructure. Only when businesses start to add multiple applications onto the NGN do the benefits really come to the fore. For example, NGNs directly support the adoption of next-generation multimedia applications such as Instant Messaging (IM) and video conferencing, while the network is future-proofed to support easy integration of existing or new technologies, as the business need arises.

NGNs include self-healing technology which means that if the network is damaged in any way, the information is quickly rerouted onto an alternative network. As NGNs greatly improve the potential for monitoring network access and performance, any security breach is easier to spot and resolve.

Furthermore, to ensure that businesses can continue to use legacy applications, some telecoms providers are now working on a range of emulation services to ensure businesses continue to use existing equipment, while benefitting from the upgraded NGN. Not only does this facilitate a gradual transition to NGN infrastructures it also means organisations can continue to use old kit that relies on TDM interfaces.

Next-generation networking, today

Ultimately, NGNs provide businesses with a scalable platform to support new applications and methods of working that enhance the productivity of an organisation. The overlap of fixed and mobile communications today represents a growing trend towards fixed-mobile convergence (FMC) and the proliferation of mobile devices has already allowed us to call an individual rather than a location; FMC will individualise the call experience further. This shift will mean that employees can remain connected regardless of their location, access technology and device and is an excellent illustration of a new platform, underpinned and enhanced by NGNs.

In short, NGNs provide businesses and their employees with access to any application on any device. They help transcend the traditional boundaries of the work place and allow organisations to improve multiple areas of their business from supporting remote working, to using multimedia applications, supporting training and increasing network security. The onus is on the telecoms provider to demonstrate a greater understanding of a business' operational requirements and match them with a tailored, scalable solution. This allows the enterprise to focus on what it does best – managing their business – while their technology needs are supported by experienced and trusted providers. Fundamentally, understanding and growing this relationship will provide a platform upon which business communication will be revolutionised.