TeraGo Networks

TECHNOLOGY TRENDS: PREPARING YOUR BUSINESS

TeraGo
Networks

Broadband. Only for Business.
Internet | Data Networking | Voice | Redundancy

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TECH TRENDS FOR 2014

The New Year has begun, and businesses everywhere are honing lists of objectives to tackle. Technology will continue to grow in importance to businesses' ability to deliver, particularly for those that plan to sharpen focus by maximizing data use, and for those that plan to streamline operations by using cloud-based applications. While the basic workflow equation remains – applications that enable users to manage, process, and interact with data – the access methodology has shifted dramatically. Data and applications can be internally housed, located at an external data centre or facility, stored in the cloud, or any combination. Users no longer need to know, or even really care how their laptops, tablets, and other devices interact with applications and data – they just need seamless access. This non-stop drive to an always-connected environment means that businesses must be prepared to manage trends that will impact connectivity. Following are some themes that will be important in the upcoming year:

BUILDING REDUNDANCY AND CONTINGENCY PLANNING

Internet connectivity has become crucial to business operations. Without a connection, companies have no email or VoIP telephone service, and can't download information or back up data. But the increased adoption of cloud-based applications has raised the stakes: without Internet connectivity, businesses can't access their ERP, CRM, or other vital business systems, and all work comes to a halt.

Any number of natural or weather-related disasters can cause power outages that impact connectivity – Toronto's 2013 Christmas ice storm is just one example. But common municipal or construction projects also can wreak havoc when workers mistakenly sever cable, fibre, or copper connections. For 2014, companies need a solid contingency plan for Internet connectivity.

In addition to choosing a primary and a back-up provider, companies should work with both wireless and wireline providers to insure connectivity. Choosing two wireline providers, for example, offers no redundancy if a building's access trench is breached – both the fibre DSL and the cable will be severed by one swipe of a backhoe.

Choosing fixed wireless broadband as a primary connectivity option often pays off during both manmade and natural disruptions. "In the Christmas ice storm, a lot of companies' cable infrastructure was down even when the power came back on," says Jose Robles, Network Technology Specialist, TeraGo. "With fixed wireless broadband, transmission is conducted over the air, so customers only need to worry about the connection from the cable on the roof of their building into their offices."

SYMMETRICAL CONNECTIVITY – CHOOSING A BUSINESS CONNECTION

Many businesses understand the importance of Internet connectivity speed, yet often measure it only on the metric of download speed. Most Internet providers tout download speeds, which measure the top rate at which web pages load or at which files can be transmitted from a source to the user, rather than upload speeds, which measure how fast files and data are transmitted from the user to another source.

Download speed is undoubtedly an important consideration for home-based users, who want access to online gaming and bandwidth-hogging video, so most consumer-based Internet connectivity providers use asymmetric connectivity, which prioritizes download speeds. Download speed is important for business users, but upload speed cannot be overlooked -- cloud-based applications rely on two-way data transmission, and high-speed uploads are crucial for backing up files to a data centre. Many businesses are migrating to providers that offer symmetrical connectivity, which provides the same speed for uploads and downloads.

"Consumer or home-based connection providers are asymmetrical, and are very restrictive," says Robles. "If you are backing up to a data centre, a high upload threshold is important – using an asymmetrical connection will take forever."

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MIGRATING TO IPV6 – PREPARING FOR THE NEXT WAVE OF THE INTERNET

Every single Internet-enabled device uses a unique, Internet Protocol (IP) address – this includes devices such as network routers as well as smart phones, tablets, computers, and even some medical devices. The current protocol – IPv4 – was developed more than four decades ago using 32-bit addresses, which enabled a pool of about four billion unique addresses. "No one thought we'd use them all up back then," says Robles. "But we're running out. "

That's one of the reasons why Internet providers are migrating to IPv6, a new protocol that uses 128-bit addresses. IPv6 enables a pool of 340 undecellion unique addresses, a number that is "even more than a human being can really grasp," says Robles. "It's enough to give an IP address to every grain of sand on the planet."

Connectivity via IPv4 will continue for some time, but more and more providers are migrating to IPv6. Some regions, such as Asia-Pacific, have already exhausted their block of IPv4 addresses, forcing a move to IPv6. Businesses should start positioning themselves for the switch by working with a provider that supports both protocols.

Even if IPv4 addresses are still available, there are other reasons to migrate to IPv6: Information travels on the Internet via "pack-

ets", a formatted unit that includes both data and control information, and IP v6 transmits packets more efficiently. It simplifies aspects of address assignment, and also improves network security. When making business decisions to invest in new network and connectivity equipment, consider migrating to IPv6.

"Both IPv4 and IPv6 will run concurrently for years, because there are a lot of devices on IPv4 that will likely never support IPv6," says Robles. "But businesses should choose an Internet provider that uses dual stack, running both IPv4 and IPv6."

IPv6 Ready-Set-Go!

For many popular web sites, IPv6 is more than a coming attraction. The following major sites are currently IPv6 enabled:

PREPARING FOR THE INTERNET OF THINGS

One of the technology trends that is gaining a lot of traction is the Internet of Things (IoT), a concept that embraces the interconnectivity of devices to each other and to the Internet, transmitting data without the need for human intervention. Many applications already are in place – think of how a smart phone automatically transmits data to and from application providers, how implanted medical devices like heart monitors can transmit data to a health facility, or how sensors on wind turbines transmit information to a utility's central control station. And others are rolling out on a large scale, such as home electricity meters connecting to the utility via the "smart grid". These applications are made possible by the huge increase in addresses available via IPv6 – each device needs a unique IP address. These one-to-one connections are established, and large-scale applications are well underway. In this phase, devices integrate with each other and with networks, both public and private, to collect, share, transmit, and act upon data.

Successful implementation of the IoT will depend on a number of factors, including device functionality and enterprise application development. But the one common success factor will be reliable and robust symmetrical connectivity. IoT applications will transmit data, and lots of it, in multiple directions - from the device to the cloud or enterprise, from the data source back to the device, and between devices. This connectivity will mean businesses have even more incentive to work with providers that offer symmetrical and redundant connectivity. It's challenging enough today when workers can't access data or applications, but will be crucial when tens of thousands -- and eventually millions – of devices are installed.

When making technology investment decisions in 2014 and beyond, particularly for firms planning to roll out numerous interconnected devices - factor IoT into the mix. This means exploring solid, symmetrical connectivity as well as data centres that are IoT-ready.

IoT to Drive $30B in Value for Canada

The Internet of Things (IOT) has the potential to unleash enormous value: when devices can collect, transmit, and act upon data without human intervention, "smart" systems can be self-managing. Cisco Consulting Services estimates that could generate $30 billion in value for Canada by 2022 through cost savings, productivity gains, new revenues and improved citizen experiences.

- Asset Utilization
- Customer Experience
- Supply Chain
- Innovation
- Employee Productivity
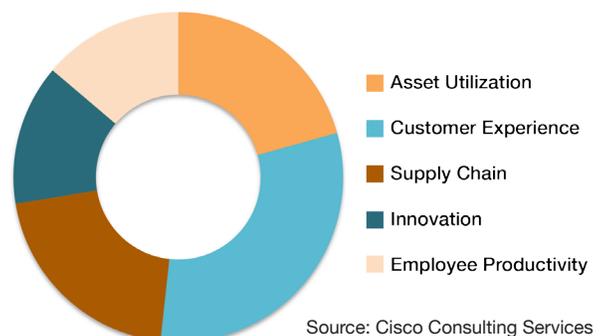
Source: Cisco Consulting Services

PREPARING FOR CONNECTIVITY WITH TERAGO

With each new technology trend, both in place and on the horizon, TeraGo offers solutions to deliver always-on connectivity for business:

TeraGo Puts Business First: Unlike other consumer- or home-user oriented providers, TeraGo specializes exclusively in delivering broadband services to businesses in Canada. TeraGo serves more than 6,500 customer locations across all industries within Canada, making TeraGo the natural choice for any type or size of business that requires broadband services.

TeraGo Delivers Redundancy: TeraGo's carrier-grade broadband, data, and voice communication services are delivered using fixed wireless and fibre-optic methods. TeraGo owns and operates the network, so it is completely independent from all other wireline or wireless networks. It is built using state-of-the-art technology, and is engineered to 99.999% availability. It is monitored 24/7 by qualified technicians, making TeraGo a solid choice for a primary connection, or to complement existing primary connections. Choosing TeraGo as a secondary connection offers uptime for business – when primary Internet connections experience a disruption, TeraGo's technology will automatically reroute traffic to a TeraGo redundant secondary connection.

TeraGo Offers Symmetrical Connectivity: TeraGo's high-capacity symmetrical bandwidth speeds ranging from 1.5 Mbps to blistering speeds of more than 100 Mbps, allowing extremely fast uploads and downloads.

TeraGo is IPv6 Ready: TeraGo uses dual-stack technology, running both IPv4 and IPv6 simultaneously. Devices automatically are routed to the correct stack seamlessly, requiring no customer input or intervention. Companies or devices deploying the newer protocol can expect the same level of exceptional connectivity as those using traditional technology.

For more information, visit www.TeraGo.ca