IDC TECHNOLOGY SPOTLIGHT

The Distributed Enterprise: Agile Networking for the Digital Era

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Companies today face a rapidly evolving and dynamic business environment shaped by digital transformation, the adoption of cloud applications, and the exponential growth of bandwidth requirements. This demands a highly flexible and agile environment that offers robust, secure, and reliable network access for both onsite and remote employees and business partners. Businesses need a reliable networking partner that can provide the optimal bundle of network services, including fiber and broadband capabilities, collaboration, and managed services, to meet the evolving requirements of the digital enterprise. This paper examines the requirements for distributed enterprise networking and the criteria for selecting the optimal service provider. It also looks at the role of Frontier Business in the strategically important market of distributed networks.

Introduction

The migration to cloud-based applications and services is driving a fundamental shift in the deployment of the modern WAN. This fundamental shift also means that enterprises will require secure, high-bandwidth and reliable access to information stored on private and offsite environments. Every year, businesses shift more content and applications to centralized datacenters. In addition, the workforce is leveraging more sophisticated devices while the number of connected devices continues to grow exponentially. This has stimulated an exponential growth in networking traffic.

The management of vast amounts of information about products and customer requirements will continue to be a major challenge for IT infrastructure managers. The distributed enterprise requires a networking partner that can facilitate a long-term road map to enable a smooth transition to managing a complex and secure WAN. The most important WAN networking trends for the modern digital company include the following:

- **High-speed capability.** Demand for Ethernet connectivity and higher bandwidth speeds continues to surge with double-digit growth. Companies are migrating from legacy T1s/Sonet circuits for branch office connectivity to cost-effective Ethernet circuits that can also integrate datacenters and provide access to cloud providers. Other key use cases for implementing Ethernet circuits include disaster recovery/business continuity, datacenter storage replication, as well as access to Layer 3 virtual private networks (VPNs). Enterprises are also increasing their use of multiple cloud-based applications, including the use of advanced wireless services (AWS) for supporting virtualized workloads via direct connect services that require Ethernet connectivity.
- **Virtual private networks.** Since 2014, enterprises have been adopting hybrid WAN configurations, combining Ethernet access with a network-based IP VPN service. These hybrid network solutions are also a popular method for upgrading legacy private line access from tier 1s to higher bandwidth rates such as 10Mb to 100Mb access while leveraging new technologies like Ethernet access. In many cases, enterprises continue to use private line or Ethernet private line (EPL) for point-to-point connectivity for key facilities and then implement Layer 3 VPNs for other facilities. For example, Ethernet connectivity or dedicated private lines may be implemented at large sites or to interconnect enterprise datacenters, while MPLS IP VPNs are used for site-to-site connectivity.

- **Enterprise adoption of hybrid network-based IP VPN services.** These services combine MPLS-enabled VPNs for larger sites and IPSec network-based VPNs for smaller locations, mobile users, and mobile remote access. Adoption of these services is increasing because hybrid networks are serving a growing amount of internet destination traffic being carried across the VPN and because enterprises want an MPLS offload solution that is secure but cost effective.
- **Unified communications and collaboration (UC&C) platforms.** UC&C solutions are designed to unify, deliver, manage, and support some or all of the various types of communications and collaboration technologies that organizations and individuals require. UC&C solutions are being adopted in both horizontal and vertical industry business processes and applications, which include VoIP as well as all conferencing, messaging, and email services.

Many companies today are considering and/or are in the process of transitioning from capital-intensive platforms to environments where minimal equipment is located on-premises. Therefore, the capital required to implement a UC solution is significantly reduced. At the same time, the trend toward "as a service" offerings, coupled with the growing need among organizations to more tightly integrate cloud-based solutions and applications with UC&C capabilities, is transforming how these services are deployed by customers.

Key Benefits

IDC is forecasting bandwidth demand that will increase on average at least 30% per year over the next several years. This makes the migration to Ethernet WAN an appealing option for the following reasons:

- Ethernet is much more cost effective than legacy Sonet-based circuits. For example, for the cost of an average T1 circuit, enterprises can increase bandwidth consumption by up to 5x by migrating to a 10Mbps Ethernet circuit.
- Ethernet offers flexibility to the enterprise by facilitating integrated WAN traffic, including VoIP and other data services. As a Layer 2 solution, Ethernet WAN can be easily managed and monitored by users.
- Ethernet providers all offer rapid provisioning and implementation of Ethernet networks from facilities that are prewired. Service providers can rapidly deliver bandwidth requirements from 10Mbps to 10Gbps via software-defined platforms.

Today's MPLS network-based IP VPNs are the foundation of many enterprises' distributed data communication. IP VPNs are often the communication platform of choice to enable strategic enterprise applications over IP platforms, such as VoIP, security, videoconferencing, and unified communications and collaboration. According to IDC, most companies have already implemented a corporate VPN, and 65% of U.S. companies currently leverage a service provider–managed VPN.

VPNs are also cloud enabling. For example, there is growing enterprise demand for extending Ethernet and MPLS/IP VPN service connectivity to public and private SaaS cloud computing services such as Amazon Web Services, salesforce.com, and Oracle.com. Per IDC's 2017 *U.S. Enterprise Communications Survey*, over 55% of enterprises plan to connect to multiple IaaS or SaaS service providers in the next 12 months.

In addition, unified communications and collaboration offers tremendous benefits to enterprises. The mobile workforce is growing steadily, driven by the BYOD phenomenon, and the use of UC&C platforms and integrated voice and conferencing solutions offers instantaneous connectivity and presence for roaming and remote workers. This also facilities enhanced productivity because employees can collaborate with greater ease and agility. UC&C platforms are increasingly migrating to service provider–hosted or –managed solutions as well as to cloud platforms.

Considering Frontier Business

Frontier Communications, the parent company of Frontier Business, is one of the largest telecommunication companies in the United States. The $10 billion company offers a diverse portfolio of business networking services to companies in 29 states. Its modern fiber-optic network offers backbone speeds up to 100Gbps and covers 75% of customers in the Frontier operating area.

The Frontier Business portfolio includes strategic services such as high-speed networking, ranging from legacy private networks to Ethernet and fiber-optic services on circuits exceeding 10Gbps. Frontier also provides secure IP services on Fios and secure sophisticated services such as MPLS VPNs as well as VoIP and SIP trunking services. Frontier can provide managed services capabilities that facilitate management and monitoring of CPE as well as WiFi hotspot management.

Frontier Business' support capabilities include offering customers SLAs for networking reliability and transparency. The company's network of NOCs facilitates 24 x 7 network management and customer support to meet any support requirements. Frontier also provides break/fix equipment support for a wide variety of IT vendors.

Challenges

Frontier Business does face market challenges, however. Facilitating flexible and rapid provisioning of capacity to companies while meeting the demands for explosive bandwidth is a major challenge for service providers today. Most enterprises are in the early stages of digital transformation and are migrating to applications rapidly to cloud platforms. Enabling secure WAN networking and cloud access with the most reliable and secure configuration depending on business size is critical to digital transformation success.

Conclusion

IDC believes that the demand for robust, secure networking services will continue to expand over the next five years. The growth of video, collaboration, the Internet of Things, and other connected devices is putting considerable strain on business networks. In addition, the need to manage the customer experience while leveraging analytic and cognitive computing is also an emerging requirement that will drive bandwidth demand in the future.

The ability of companies like Frontier to offer managed solutions will help enterprises streamline and manage IT costs. Outsourcing strategic capabilities to a service provider that can provide a future-proof road map will allow companies to save on both personnel and capex expenditures while leveraging the expertise and industry partnerships of that service provider. If Frontier can address the challenges described in this paper, the company has a significant opportunity for continued success.

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