



## I D C A N A L Y S T C O N N E C T I O N

### Melanie Posey

Research Vice President, Hosting and Managed Network Services

## Enabling Extended Business Ecosystems: The Role of IP VPNs, Mobility, and Cloud

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*In recent years, the "extended enterprise" has become the norm, featuring the convergence of evolving network and IT architectures including WAN, datacenter, cloud, and mobility. It has also been shaped by the increasingly distributed business ecosystems of onsite and remote employees, customers, suppliers, and partners and more diverse application and business process environments whether internal or externally hosted. As application delivery and consumption shift toward an "anytime, anywhere, any device" framework, enterprise network and IT managers are tasked with supporting and securing diverse environments. These include heterogeneous networks, in-house and external infrastructure platforms and applications, and company-owned and "bring your own" devices. In this context, IP VPNs, mobility, and cloud bring all the pieces together technologically and organizationally to enable the extended enterprise. The combination of enabling technology, cloud services business models, changes in employee workstyles, and an expanded end-user population creates new demand on networks and new challenges for the IT professionals responsible for managing enterprise application delivery environments.*

The following questions were posed by AT&T to Melanie Posey, research vice president of IDC's Hosting and Managed Network Services, on behalf of AT&T's customers.

**Q. What are the network options available for extended business ecosystem enablement?**

A. Network connectivity is the foundation of the external enterprise, linking together company sites, end-user populations, and internal and external datacenters as well as third-party service providers. The extended enterprise is all about convergence, broadly described as an IT/communications service delivery model in which data transport, voice, content, and business applications come together in a single network. The key technology foundation of convergence is the combination of standardized IP-based transport networks and multiprotocol label switching (MPLS). MPLS supports a wide range of technologies including Layer 3 IP applications and Layer 2 and 3 VPNs.

Two types of VPNs are vital building blocks for the secure delivery and consumption of business applications across the extended enterprise. The first is an MPLS VPN, which is an on-net managed private IP service that enables full mesh, any-to-any connectivity and application-aware networking via class-of-service (CoS) designations that dictate application priority on converged networks. The second is an IPSec/SSL VPN. These types of VPNs use encrypted tunnels across the public Internet for site-to-site connectivity, to connect off-net users to the company WAN, or to provide remote access connectivity to specific applications. IPSec/SSL VPNs are typically used by companies that manage their own VPNs, for small office and external partner/supplier connectivity, and for remote access enablement. In terms of access network flexibility, running business applications over a common IP network means that companies can provide cost-effective access for various location/user profiles. This can range from low-speed TDM at small branch offices to Ethernet connections for larger centralized locations such as internal or third-party datacenters.

**Q. How does mobility fit into the extended enterprise paradigm?**

A. End users are increasingly mobile and very likely need to access corporate applications from multiple wireless devices and often from multiple off-net locations. Businesses also have to support remote users who access enterprise resources via the Internet with fixed and increasingly mobile off-net connectivity. The explosive growth of mobile device connections provides a useful illustration of the scale of the challenge. IDC predicts that the total number of mobile business connections worldwide will grow from 813 million in 2013 to 940 million in 2017. Further complicating matters, companies are increasingly implementing "bring your own device" policies, thus introducing additional endpoints (i.e., smartphones, tablets, and laptops) into the network environment. Previously, IT managers had a finite number of relatively locked-down end-user devices connecting through the corporate network to the datacenter. Today's environments are much more fluid and heterogeneous, and IT may lack visibility at the device, access, and/or external provider's service delivery layer. However, company-supported mobile VPN clients solve this problem by enabling secure corporate network access for remote workers, "road warriors," and third-party business partners. Secure remote network access also mitigates the risks associated with DDoS attacks and malware.

**Q. What is the role of the cloud in extended business ecosystems?**

A. Enterprise datacenters are no longer the only repository for critical business applications and content, and corporate WANs are no longer the sole on-ramp to these resources. Increasingly, companies are leveraging an ever-expanding array of off-net public cloud options for infrastructure, application development platforms, and business application software. According to IDC's 2014 *U.S. Enterprise Communications Survey*, nearly 30% of U.S. businesses currently use some form of cloud-delivered infrastructure as a service (IaaS) or software as a service (SaaS). Furthermore, U.S. businesses polled in IDC's 2013 *CloudTrack Survey* indicated plans to shift 28% of the spending currently allocated to running applications in-house to public or hosted private cloud infrastructure and/or software services to take advantage of cloud's cost and agility benefits.

The shift to cloud expands the reach and scale of the extended enterprise but creates challenges for network/IT managers who still must facilitate optimized and secure delivery of applications to and from the extended edge of corporate networks. IDC predicts that more than 80% of net-new applications will be deployed in the cloud, with cloud platforms gradually displacing the client/server approach as the dominant model for application and solution delivery. However, some applications (or components thereof) will remain onsite, requiring hybrid networking capabilities for secure, optimized delivery. Application workloads that migrate to external IaaS and platform-as-a-service (PaaS) clouds may be sourced from different service providers, requiring integrated network access to ensure consistent availability and performance for end users.

**Q. What type of service provider is best positioned to serve the needs of extended business ecosystems?**

A. The ideal service provider partner will have experience, expertise, and enterprise-grade solutions in the networking, cloud infrastructure, and mobility domains. Furthermore, broad enterprise networking and WAN skills are required to deploy, secure, and optimize heterogeneous on-net and off-net networking and cloud infrastructure/application solutions. The ability to provide service-level agreements (SLAs) designed specifically for enterprise-class operations and mission-critical applications should be a key selection criterion. SLAs for extended enterprise ecosystems should go beyond mere availability to incorporate performance (i.e., latency guarantees) and application-/transaction-level service assurance.

The service provider's network and datacenter footprints are important considerations because the on-net resources must be available in the primary locations where business operations are performed. The service provider's ability to support standard applications such as ERP and CRM, as well as internally developed or customized applications, expands the provider's ability to help businesses leverage cloud as an engine for IT-based business enablement and transformation. Providers with an ecosystem of partners that can expand the functionality of hybrid network-enabled cloud architectures and layer capabilities on top of on-net clouds are ideally positioned to take businesses into the next stage of cloud development.

**Q. What are the implications of the extended business ecosystem for meeting today's challenges?**

- A. The extended business ecosystem approach reflects the realities that companies both large and small face in today's environment: globalization; the increasingly distributed nature of production, operations, marketing, and sales; and the prevalence of "anytime, anywhere" ways of working. From an organizational point of view, this new model means that companies must become more flexible, agile, and innovative to rapidly develop new products and services, reach new markets, deliver customer satisfaction, and optimize the supply chain. The growing complexity of business process ecosystems requires a holistic framework-oriented approach to provide the performance, resiliency, and security needed to drive end-user productivity, achieve cost/operational efficiency, and deliver improved revenue generation for the enterprise.

To accomplish these goals, network and IT organizations must change the way they think about their IT architectures and develop new application delivery strategies that accommodate an array of end users, including remote employees as well as customers, partners, and suppliers. In addition, these new approaches will need to foster the ability to access applications via the public Internet but also using the external public cloud resources that extended business ecosystem participants will leverage — whether IT departments support and optimize them or not.

#### ABOUT THIS ANALYST

*Melanie Posey is research vice president of IDC's Hosting and Managed Network Services. In this position, Ms. Posey provides analysis, forecasting, and consulting on telecom and Web hosting sector dynamics, service provider positioning, technological and business model innovation, and industry evolution. Ms. Posey is a frequent speaker at industry and client events and a widely quoted source in a variety of business publications.*

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Global Headquarters: 5 Speen Street Framingham, MA 01701 USA P.508.872.8200 F.508.935.4015 [www.idc.com](http://www.idc.com)