



# CONTENT FOCUS 2010

## NETWORK AND TELECOM STRATEGIES

### **Umbrella Technology Focus:**

Use of wired and wireless network technologies, products, and services to deliver enterprise data, voice, and video communications.

### **Primary Areas of Focus for 2010**

#### **WIRELESS AND MOBILITY:**

- Wireless and mobility covers nearly anything with a radio antenna and the networks used for mobile device connectivity. This is a rapidly-changing, highly-technical area with large architectural, security, network management, and performance implications.
- Wireless access from mobile devices is becoming the preferred form of communications and applications delivery among network users. Enterprises must increasingly address wireless LAN substitution for wired Ethernet networks, mobile device management, security, and application development issues.
- New wireless technologies, systems, and devices are enabling improved wireless LAN and wide-area broadband services. Mobile operators are responding by offering higher-speed services, better coverage, greater choice of devices, and new network-based applications. New pricing bundles and economic models are changing the way that consumers and enterprises use wireless services.
- Planning for pervasive mobility is expected to affect nearly every aspect of enterprise application development and network deployment. Enterprise wireless strategies, policies, and governance are also becoming influenced by individual employee choice of wireless devices, with industry innovation often driven by consumer smartphones, netbooks, and other untethered devices.

#### **WANS AND PROVIDER NETWORK SERVICES:**

- Wide area networks (WANs) form the connections between geographically separated sites. Decisions concerning private vs. public vs. outsourced networks have a major impact on WAN service delivery: obtaining reasonable rates, rapid provisioning, and reliable quality management of what may be a concatenated set of carrier networks.

- To achieve cost savings and often better performance, many enterprises have been investigating and trialing use the public Internet for significant portions of their WAN. By deploying encrypted VPNs, secure connections between sites may be created over an open network.
- As the remaining pool of IPv4 addresses is exhausted over the next 3-4 years, interest in IPv6 is growing. IPv6 technology, although over 10 years old, still lacks many management and security capabilities. Regardless, many enterprises are planning for partial deployment over the next 2-3 years. The initial focus will be at the edge of their networks to enable connection to IPv6 Internet sites.

#### **REAL-TIME VOICE AND VIDEO COMMUNICATIONS:**

- Many enterprises are still in the process of migrating from PBXs to IP telephony, but are now being pressured by their vendors to consider Unified Communications (UC) systems, the evolution of voice over IP (VoIP) to multiple communications and collaboration applications centered on a presence engine. Vendors such as Microsoft, IBM, and Cisco are competing against traditional telephony vendors such as Alcatel-Lucent, Avaya, Mitel, and Siemens to provide converged telephony and collaboration solutions. It remains to be seen if the vendor's view of UC becomes a mandate or is simply a mirage.
- Enterprises continue to search for business drivers that will provide a quantifiable return on their "phone system" investments. With a proliferation of service provider offerings now available in the "cloud," enterprises are now considering new service provider offerings as an alternative to traditional premises-based systems.
- With most business phone calls now made via mobile cellular phones, enterprises are investigating ways to integrate such calling into their premises-based systems, sometimes referred to as "fixed mobile convergence."
- Renewed interest in video conferencing has fueled interest in high-end telepresence systems that create

the illusion of “being there” through the use of high-definition television, a spatially driven audio system, and high-performance WANs. However, there are significant cost and network issues involved. Enterprises are also upgrading traditional room-based systems and installing desktop applications. The proliferation of these visual collaboration tools can be a key ingredient to an enterprise’s UC strategy, though the related costs and impact to the network are major considerations.

#### **SITE AND DATA CENTER NETWORKS:**

- Site networking consists of the switches, routers, and cabling necessary to create a wired infrastructure within a single geographic location. These components form the edge connections and backbone networks that comprise the “nervous system” of the organization.
- Data center networks are a special case subset of site networks; they require very high performance and resilience to support the servers and storage that support enterprise applications in the data center.
- The adoption of data center virtualization has created more complexity through the addition of software-based switches and routers that accommodate the multiple virtual machines located on each physical server. The new virtualization technologies are forcing a rapid re-engineering of network architectures to handle the rapid provisioning and migration of virtual machines within the network and to handle the virtualization of network elements themselves.
- Next generation Ethernet switch products are now being considered as “integrated fabrics” to be used simultaneously for both storage and data networking. This can substantially reduce the number of cables and ports required, but requires careful planning to address potential security and performance issues.
- Newer standards such as 10 Gigabit Ethernet LANs and Augmented Category 6 (Cat 6A) cabling have been deployed mostly in data centers, but are starting to make an appearance at other enterprise network sites.

#### **NETWORK OPERATIONS AND PERFORMANCE MANAGEMENT:**

- Network Operations and Performance Management covers WAN performance optimization and network management, two related areas of great importance to managers who need to improve performance and availability while controlling costs and enabling larger enterprise strategies such as centralization and enhanced real-time collaboration.
- WAN performance optimization improves the efficiency of WAN circuits at the same time that it massively improves the application performance seen by users. This market has seen explosive growth because of optimization’s benefits, but the technologies are complex and require careful evaluation and integration.
- Network management remains critically important because VoIP, web services, and the intertwining of servers and networks (“the network is now the backplane

of a multi-server system”) require extremely rapid incident detection and service restoration.

- Incident and problem management both benefit from the rapid incident classification and handling (“triage”) processes pioneered by Burton Group; the processes can work even in today’s rapidly-changing and difficult-to-document environments. When integrated with new diagnostic strategies and into the ITIL service life cycle, availability and service levels can improve noticeably—and at reasonable cost.
- Data center virtualization requires rethinking of the architecture for network and systems management and the placement of monitoring probes within the infrastructure. Management of these complex systems will rely heavily on careful construction of virtualization design rules and on capturing information from virtual devices and interfaces.

#### **Additional Areas of Focus for 2010**

#### **NETWORK AND TELECOM STRATEGIES**

- Network security
- Vendor/service provider strategies for saving money
- “Consumerization” of IT and impact on mobile devices