



Enabling Demand-Driven Retailing

ROBUST NETWORK INFRASTRUCTURE IS CRITICAL TO SUPPORT NEW APPLICATIONS

Analysts and savvy retailers view demand-driven retailing as a critical business initiative. According to AMR Research, demand-driven retailing is a system of technologies and processes that capture consumer behavior at each point of interaction and then use this information to define products and services that shape customer demand, while facilitating a real-time, profitable response across a network of suppliers and channels to meet that demand.

Retailers are undertaking major business process change to get to that vision, defined in AMR's *Demand-Driven Retailing Is about More Than Retailers*, July 19, 2006. That work includes laying a foundation of tightly integrated software applications that are capable of collecting, analyzing and exchanging high volumes of data within the enterprise and with trading partners. Proactive communication among people is another essential element to achieving the high levels of visibility and responsiveness necessary to attain the consumer-centric ideals of demand-driven retailing.

None of that can happen without a robust, secure voice-ready retail network infrastructure to transport the required voice and data traffic. Already healthy volumes of data will continue to multiply as retailers move closer to attaining collaborative, shared platforms accessible to authorized employees and partners. Add data-rich capabilities from RFID tagging to the mix, and it's clear that bandwidth and security requirements will explode.

Retailers must take the same care in building the enabling infrastructure as they do in building their application platforms. Demand-driven retailing and the increasingly collaborative nature of doing business in the retail supply chain must not be constrained by limitations to retailers' network infrastructure.

"Retail spending is attributed to the fact that retail companies are dependent on telecommunications to accomplish core





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business processes, including sales and marketing, employee coordination and supply chain management,” according to *IDC Forecasts Fastest Growth in Wholesale and Retail Industries for U.S. Telecommunications Services*, July, 2005.

Now is the time to lay the foundation to support these processes. Retailers must consider the potential benefits and resulting bandwidth impact of enabling technologies such as RFID, Voice-over-IP (VoIP), wireless VoIP and IP-based audio and video conferencing. A robust, comprehensive and evolving security plan is another essential part of the mix.

“Wainhouse Research believes that the convergence of voice, video, and data traffic onto the corporate data network should be a part of the corporate network strategy for virtually every large, distributed enterprise organization,” according to a July, 2005, report, *Real-World IP Network Convergence for Conferencing*.

WHY SO MUCH BANDWIDTH?

The ability to proactively respond to customer demands requires a high level of communication, via both voice and data exchange. Retailers will need a robust, secure, high-capacity IP-based networks and unified switching to leverage the convergence of data, voice, video and wireless capabilities. That infrastructure will support:

- **Voice over IP Telephony Services**

VoIP will deliver benefits well beyond call savings from connecting stores, headquarters and distribution centers into a low-cost voice-ready retail network, by delivering new services to enhance interactions with customers.

“Scalability has improved, price points have dropped, and a full range of high quality voice features are available for a wide range of circumstances,” say Ellen T. Curtiss and Susan Eustis, co-founders of WinterGreen Research, in *Service Provider Voice Over The Internet (VoIP) Packet Telephony Rack Based Ports And Servers Market Opportunities, Forecasts, And Shares, 2002-2007*.

VoIP can deliver user-friendly voice mail and centralized voice management, so employees can receive and check voice mail no matter where they’re working that day. Inbound calls can be automatically routed; a call in response to a toll-free number on a TV ad, for example, can be sent to the appropriate service person. The customer can be given the option of purchasing from the online channel, speaking to a customer service representative or talking directly to a local store employee. In call centers, customers can be pre-identified, and their history called up, before call center personnel even pick up the line.

“The retail industry is...expected to significantly extend its use of IP telephony equipment through 2009, mostly in an effort to help execute business objectives related to improving customer care and interaction, supply chain management, and managing a globally disparate workforce,” according to *Adoption of Wireless LAN and IP Telephony Creating Hotbed of Opportunity Within Key Vertical Markets*, Says IDC, Oct., 2005.

Fully 30% of respondents to *RIS News 16th Annual Retail Technology Study*, co-produced with Gartner, say they have up-to-date technology in place for the emerging category of voice/data convergence, or have already begun installation. An additional 34% will begin upgrade within two years.

- **IP phones**

Retailers are deploying wireline and wireless IP phones to take full advantage of their VoIP systems. More advanced IP phones can include LCD screens, look-up functions, online directories and time clocks.

“Cost savings and robust feature sets are expected to be the primary drivers for increased spending on IP telephony equipment over the forecast period, which is expected to rise the fastest within the financial services and retail sectors,” according to IDC’s Oct. 2005 report, which projects spending on wireless LAN equipment in retail and other industries to more than double by 2009.

- **Video Bandwidth**

Enhancing the customer experience and providing more detailed sales information to the customer is behind a push toward in-store electronic signage and interactive high-definition video on the store floor. Keeping these data-rich presentations fresh and cost-efficient means pushing signal out over retailer networks.

Isuppli/Stanford Resources has reported that the worldwide retail signage market was \$501 million in 2003 with a growth projection of 29% CAGR to \$2.35 billion in 2009.

“Electronic Signage Networks (ESN) are poised to follow Word Processing, VisiCalc, bar codes, Enterprise Resource Planning and e-mail, in becoming the next ‘Killer App’, a technology application that finds its place in usage quickly and broadly, because of its enabling value and money-making potential,” according to Apogee Partners.

- **VoIP Audio and Video Conference Calling**

The daily business of retail typically entails a high volume of fee-based audio conferencing services via telephony services. For a retailer paying rates of 12 cents per minute and averaging conference calls of one hour, costs quickly add up. That cost can be eliminated through a converged voice-ready retail network, and this application often cost-justifies the solution. So-called rich-media conferencing ups the benefits of audio conference calling by adding video and document sharing to the mix, enhancing productivity—but also consuming more bandwidth than audio alone.

“Whether you consider an investment in conferencing to be a way to cut costs or increase productivity, these tools will soon join the ranks as necessary tools for your company to compete in the world economy,” says a March, 2005 report from Wainhouse Research, *The Business Case for Videoconferencing*.

- **Wireless VoIP**

Given the high percentage of retail workers distributed across the sales floor, distribution center or even within corporate offices, the ability to tap into converged voice-ready retail networks via wireless devices is key. Wireless devices on the sales floor can help reduce lines, boost customer service, enable inventory and price lookups, allow easy store reconfiguration, and keep managers out of offices and out among customers. Retail district managers can use wireless VoIP to access their company network as they travel, within stores or in hot spots.

“New wireless technologies (such as WiFi, WiMAX, and high-speed data over cellular) will enable the mobile workforce and combine with the fixed network to deliver high-speed voice, data, and video to the promised ‘anytime, anywhere’ user,” according to IDC’s *Telecommunications Infrastructure: Top 10 Predictions for 2006*, February, 2006.

- **RFID**

The ultimate goal of RFID initiatives is to provide far more data about product movement. As RFID data collection moves from pallet to case to item level, the volume will multiply



“It’s clear that interest in faster, fatter bandwidth is reaching the mainstream of retailing.”

ABOUT 3COM

A leading provider of secure, converged network solutions, 3Com Corporation helps retailers thrive. Integrated voice-ready systems and unified wired and wireless networks facilitate the implementation of new applications to connect supply chain to headquarters, stores and consumers. They enhance interactions and protect POS and consumer credit data to increase customer loyalty and boost same store sales. Their ease of use and standards-based designs help businesses address current needs, while optimizing existing infrastructure investments.

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dramatically. That has huge implications for data networks, which must be prepared to move batched or a stream of real-time data back to where it can be analyzed and acted upon.

RFID-enabled materials can generate 10 to 100 times the data volume of a relatively simple optical bar code, according to *RFID Today*. Networks must absorb this surging quantity of data without disrupting the other services.

SECURE NETWORK INFRASTRUCTURE

The mission-critical nature of this network traffic further elevates the need for a robust network security program. Threats include business disruption, leaks of competitive data, and liability and penalties that can result from the compromise of customer financial data. FTC Act Section 5, for example, which ensures companies keep the promises they make to consumers about privacy, applies to retailers that engage in interstate commerce. Additionally, card associations are pressuring merchants to comply with Payment Card Industry (PCI) Data Security Standards. Security-based incidents from the Internet are resulting in average revenue losses of almost \$2 million per incident across all industries and firms, according to Aberdeen Group's *Return on Risk: Managing Security Spend to Avoid and Prevent Financial Loss from Internet Security Problems*.

Studies show most retailers have approached data security in a piecemeal fashion that leaves dangerous gaps. But full protection requires a holistic, comprehensive and proactive approach to protecting data. This must include prevention and protection against intruders, hackers, Trojan horses, viruses, hijacking and more, as well as the ability to quarantine questionable content. An increasing number of retailers are outsourcing this responsibility to a trusted network security provider.

LAYING THE GROUNDWORK

Retailers are recognizing the critical nature of robust, secure voice-ready retail networks. In the *RIS News* 16th Annual Retail Technology Study, 52% of respondents reported having up-to-date technology in place for increasing bandwidth to stores and 43% said they have up-to-date high-speed bandwidth at headquarters, with DSL emerging as the connectivity of choice. "It's clear that interest in faster, fatter bandwidth is reaching the mainstream of retailing," according to the report.

Within retail locations, Gigabit Ethernet and unified switching are emerging as technologies of choice to accommodate these bandwidth and converged application needs. Gigabit Ethernet delivers 1 Gigabit per second versus the 100 MB/sec of Fast Ethernet.

ROBUST NETWORKS ARE MISSION-CRITICAL

Retail technology innovations and the revolution of IP communications are combining to provide retailers with new ways to understand, measure and serve the customer, with emerging technologies such as VoIP, RFID and electronic signage. The convergence of voice, video, data and audio onto one network promises a new level of visibility and collaboration never before seen in the industry, with new applications continuing to be introduced.

Retailers that lay down robust voice-ready retail network infrastructure to take advantage of the emerging capabilities of demand-driven retailing, and protect that network with a comprehensive evolving set of security measures, will be able to realize these benefits faster, leading to positive impact on sales, customer satisfaction and bottom line revenue. ■