

# SYLLOGISTEKS® CONNECTIONS

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## Archiving E-mail

*Federal regulations place a premium on managing electronic documents.*

A barrage of new federal regulations dealing with the retention of corporate data has caused businesses to examine how they currently archive e-mail and other types of “fixed-content” data that are not subject to change or frequently accessed. The Sarbanes-Oxley Act, the Health Insurance Portability and Accountability Act (HIPAA), and Securities and Exchange Commission rules 17a-3 and 17a-4 all include measures requiring companies to save data for decades or risk fines.

E-mail has become the chief subject of focus — and for

good reason. Osterman Research found that about 60 percent of business information is stored within employees’ e-mail systems. With IDC

### fact

About 60 percent of business information is stored within employees’ e-mail systems. With IDC predicting upwards of 35 billion business e-mails being sent daily by 2005, that means a lot of important corporate data is being stored in a way that is easily lost at this time.

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Many companies think they are archiving their e-mail messages because they back them up onto tapes or optical platters. But backups are designed to restore entire systems — locating individual records from tape is difficult and expensive. Compounding

the problem, IT has a tendency to hoard multiple copies to support system recovery and avoid data loss rather than purge based on retention.

Legal experts agree that simply saving all e-mail to tape or disk is the wrong approach. There are numerous examples of lawsuits in which companies have been forced to restore hundreds of backup tapes — at their own expense — to provide a court with e-mail archives. According to companies that specialize in answering requests for e-mail during the discovery phase of a court trial, the cost of identification, conversion, indexing, imaging, copying, reviewing for accuracy, scanning for attorney/client privileged information, shipping and storage can cost up to \$10 per message.

While most organizations rely on users to back up their own data, a number of vendors offer tools that turn e-mail backup and recovery into an automated process. IBM, EMC, Legato, HP, StorageTek, Veritas, KVS, CommVault,

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## Rise and Shine

*Analysts predict turnaround for IT spending in 2004.*

A three-year slump in technology spending could come to an end in 2004, with various industry analysts almost unanimously predicting steady single-digit increases in IT expenditures. Growth is most likely to be driven by security and business continuity initiatives, storage networking, telecommunications and pent-up demand for servers and PCs, analysts say.

“A big turn is coming,” said Michael Fleisher, chairman and CEO of the Gartner research firm. “Companies are beginning to make the turn from protecting profitability to driving growth. Cost-cutting will remain important, but it will no longer be your CEO’s No. 1 priority.”

The outlook seems particularly optimistic for small businesses, which were slow to adopt new technologies during the late ‘90s and did not overindulge during the industry’s boom years. As a result, they still represent undersaturated markets for security, networking and telecommunications offerings.

### Small Wonders

A recent study from New York-based IT consulting firm AMI-Partners indicates that small businesses began surging ahead in 2003, hiring new employees, opening new sites and increasing IT spending. According to AMI-Partners, total IT spending by small businesses increased 11 percent in 2003, reaching \$86 billion. In addition, the study showed that U.S. small businesses expanded their workforce by more than 5 percent last year, adding 382,000 new employees. As a natural outcome to the employee expansion, small businesses opened new sites to accommodate this growth.

“Approximately half of all U.S. small businesses experienced an increase in their annual revenues during the last 12 months, with one in five reflecting an annualized revenue

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Archiving E-mail  
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Fujitsu Softek and many more offer products designed archive e-mail in a number of formats. These applications can capture and index all incoming and outgoing messages, migrate stored messages to less-expensive media (such as tape), provide fast access to stored messages and enable quick retrieval of messages from storage.

Some of the various features companies should look for in any type of e-mail

archival solution include:

- Ongoing indexing and analysis. Each e-mail should be analyzed and indexed as it enters the e-mail system and as it is sent out. The indexing function should enable administrators to search the archive based on keywords, user name, subject line or date.

- Compliance against alteration. The system should be able to ensure that e-mail is not altered in any way to comply with various document management rules and legislation.

- Storage efficiency. Any e-mail archival system should

also have the ability to compress data and strip off attachments that are duplicates of other e-mail. Storing 100 copies of the same JPEG picture just wastes storage space. These would need to be reconstructed as part of any retrieval process.

- Platform and configuration independence. All of the processes to archive e-mail, perform keyword searches and extract e-mail should be completely platform independent. The operating system or the Microsoft Exchange configuration from five years ago should not be required today in order to perform an e-mail search.

- Other variables. The ability to generate reports on server utilization, amount of e-mail traffic, heavy e-mail users, etc, may also be of use.

E-mail has become an indispensable business tool, in part because it allows users to keep track of important information without creating piles and piles of paper. Due to government regulations, however, companies now must struggle with how to manage growing amounts of electronic documents. To gain control and avoid potential legal problems, businesses would be wise to consider investing in e-mail archiving tools.

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01/04

# There's No 'I' in Teamware

*Collaboration and document management tools enable colleagues to centralize and share many aspects of projects and processes.*

Organizations, no matter what the size, are dabbling more and more in global business. While companies have team members located across the country, all using divergent computing platforms, one common thread now unites them – the Internet.

With this technology, employees using simple groupware applications can quickly consolidate their schedules, share project information, review current news and conduct group discussions all for the sake of completing that mission-critical project on time and under budget.

While everyone was focusing on getting an entire enterprise up and running on a massive groupware application, the advent of a new genre of collaborative products, dubbed teamware, was developed.

## It's a Group Effort

Teamware is a collection of collaboration and document management tools that enable colleagues to centralize and share many aspects of projects and processes, such as task management, calendars, threaded discussions and document creation. This creates business efficiencies by replacing largely ad hoc methods of project execution, typically characterized by an uncoordinated mélange of e-mail, attachments, faxes, voice mail and shared network drives. In addition, teamware tools enable enforcement of corporate guidelines and best-practice execution with the capability to customize team spaces with templates, workflow and data import/export facilities.

"The \$150 million teamware market has been developing slowly for the last

five years, but we believe it is poised for rapid growth during the next few," said Matt Cain, senior vice president with META Group's Technology Research Services, and lead author of the report. "Many organizations are now realizing that workgroups – both internal and external – can be made far more efficient by enabling participants to work together in a common repository that allows them to manage documents, schedule and track tasks and meetings, and communicate in real time and asynchronously via threaded discussion databases."

## The Drill Down

Most teamware applications overlap with groupware in some areas of functionality, but there are differences. Groupware, such as Lotus Notes, Microsoft Exchange and Novell GroupWise, focuses primarily on messaging and document- or data-sharing at an enterprise level. In many companies, groupware client software is installed on every desktop to provide the communications backbone for the organization.

Teamware products provide a wider range of functionality than traditional groupware, including more comprehensive document- and project-management capabilities. However, each individual teamware application includes features that are more focused on a specific task than groupware. Some teamware applications run on top of groupware and make use of the larger products' contact, calendaring and messaging functionality.

Different teams within a business might find that different teamware products best meet their needs. Teamware

vendors tout their products as solutions not for an entire company but for small user groups.

## Take One For the Team

Teamware can help any team function better by improving communication among its members, but it is likely to benefit some businesses more than others. Companies that are most likely to improve employee productivity through teamware are project-, document- or diagram centric; are spread over geographic locations or time zones; have a large number of telecommuters on staff; or have a predominately mobile sales force and/or collaborate frequently with business partners and consultants on shared projects.

Because users access the software through a Web browser, companies can easily outsource their teamware solutions to a solutions provider. A company needs to make little or no in-house technology investment to run outsourced teamware, and the monthly rental fees for many of the applications are generally inexpensive.

Companies that choose to run a teamware product in-house aren't likely to spend heavily on the implementation, either. Some teamware applications are written in the Java language, so they can run on almost any technology platform, including Unix, Linux, Microsoft Windows or the Apple Mac OS. And most teamware stores data in popular databases, such as Microsoft SQL Server or Oracle RDBMS, instead of the proprietary databases that many groupware systems use. This makes teamware easy to integrate with other in-house applications and with estab-

lished corporate technology skill sets.

New teamware products are cropping up all the time, so selecting the product with the appropriate functional breadth and depth for each team's needs requires some diligence. But the software is inexpensive, and training for most

users is minimal because of the application's Web-style user interfaces.

Purchasing teamware solutions for employee groupings is likely to be worthwhile. The next time a team-based project is initiated, one of these applications could be the first team member.

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## Rise and Shine

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growth exceeding 10 percent," said AMI-Partners analyst Arjun Mehra. "Much of the past 12 months' growth, be it in IT spending or hiring employees, has largely been driven by small businesses that weathered the economic storm."

Impatient with the continued tightness in enterprise spending, tech giants from IBM and Microsoft to Sun Microsystems and Oracle in 2003 began bolstering products and services geared toward small businesses. The AMI-Partners study reports a surge in the deployment of business process automation applications such as customer relationship management (CRM), sales force automation (SFA), enterprise resource planning (ERP) and supply chain management (SCM) systems.

With access to more and more advanced technology, small businesses are in position to reap the productivity benefits of the same sophisticated business solutions deployed for years in larger companies. They also are likely

to rely more heavily on value-added resellers to help them identify, evaluate and implement these new technologies.

### Guarded Optimism

After three difficult years, IT executives naturally take a conservative stance with their plans for 2004. Analysts say they expect an improving economy to unlock budget reserves in the latter half of 2004, leading to overall IT spending growth rates estimated at 2.3 percent (Goldman Sachs), 4 percent (Forrester Research) or 5 percent (IDC). A 4 percent increase in corporate IT spending would represent the best growth rate since 2000.

In November, IDC released the 3Q 2003 version of the industry-standard IT Black Book, which gathers IT spending data from 55 countries. According to the Black Book, worldwide IT spending is set for 5 percent growth to \$916 billion in 2004, while spending on telecom services will show 4 percent growth to \$1 trillion.

"Our forecasts are based on a relatively conservative set of economic assumptions," said Stephen Minton, IT spending analyst at IDC. "If the recent

announcement of surging economic growth in the U.S. is sustained, and the gradual improvement in international economies continues, we can look forward to a further uptick in IT spending expectations."

Although hardware revenues have been depressed by fierce price competition in spite of shipment growth, IDC says the gradual recovery in software and services spending will gather steam during 2004 as business confidence improves.

"The recent economic improvements will undoubtedly be good for many IT vendors, though growth will not return to dot-com heights," said Minton. "Pent-up demand within IT departments, particularly for mission-critical infrastructure, has reached unprecedented levels."

A pent-up demand for replacement PCs could push hardware spending to positive territory for the first time in four years, according to a November 2003 Forrester research brief based on interviews with "technology decision-makers" at 818 North American firms. In addition,

Forrester said it expects falling prices and the desire to streamline infrastructures will motivate firms to consolidate older servers into fewer, more powerful systems.

### Room to Grow

The software market will grow 6 percent, mainly driven by demand for security, storage-related software and integration, according to the Forrester brief. And although one in four firms considers a major app deployment to be a critical initiative next year, overall apps spending will grow more slowly, thanks to pricing pressure and incremental deployments.

Security hardware and software, storage and data networking will be the key spending priorities in 2004, according to a Goldman Sachs study. Goldman says that other likely areas of investment are Voice over IP (VoIP), Linux-based servers, the Windows XP desktop OS and desktop PCs.

"Although IT spending has been depressed for the past two years, enterprise technologies have improved dramatically in that period. Many are now ready for prime-time," said Steve Prentice, chief of research at Gartner. "However, it's important for businesses to

realize which technologies can really deliver value today, and which, although promising, should be monitored rather than bought over the next three years."

Gartner says migrating telecom services to IP VPNs and refreshing desktops should be among the top spending priorities for 2004, and that businesses should evaluate and prepare to adopt Web services, PC virtualization and wireless services within the next three years.

Gartner also predicts a tremendous skills shift within the IT workforce that will impact "hundreds of thousands, if not millions, of workers." Areas in which skills will be most highly valued include broadband, wireless, Linux, content management, real-time analytics, data mining, security, middleware, certification skills, business intelligence and knowledge management.

"We are now seeing a true recovery in the making," said Al Lill, group vice president for Gartner. "There is a key combination of technology advances, architectural changes, market forces and best practices in place to lead a good recovery for IT in the near future and culminating in very strong growth in the longer term."



## Office 2003 Editions

Office 2003 Editions can help organizations and their employees transform information into impact. New and familiar products, features and functionality improve how people and organizations connect to people, information and business processes.

Advances in intranet collaboration through integration with the collaboration and information-sharing portal, Microsoft Office SharePoint Portal Server 2003, enable employees to access and share information both internally and externally. Support for information rights management and industry-standard extensible markup language provide a platform on which to quickly build cost-effective solutions that can have an immediate impact.



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## Offshore Sourcing Threat Overstated?

While the mainstream press has seized upon the threat of offshore sourcing to U.S. jobs, a new report from IDC says the continued growth of offshore IT services does not necessarily translate into a doomed outlook for U.S. IT services jobs or U.S.-based services firms.

Based on a survey of leading IT services vendors, IDC says offshore IT sourcing may rise to as much as 23 percent by 2007.

That's up dramatically from 5 percent in 2003. IDC says that although U.S. services firms will continue to use offshore resources to lower costs, the majority of

U.S. workers at risk will leverage their current expertise into new skills that will remain in demand.

"While there will be a migration of some jobs overseas, it will be coupled with steady growth in a number of service activities on U.S. soil," said Ned May, program manager of IDC's Worldwide Services research. "The activities that will migrate offshore are predominantly those that can be viewed as requiring low skill since process and repeatability are key underpinnings of the work. Innovation and deep business expertise will continue to be delivered predominantly from onshore."

# Pay As You Go

*Utility computing helps align IT with business goals.*

**T**he concept of utility computing has been called the IT equivalent of running water or electric power — you only pay for what you use. In enterprise organizations, utility computing promises the potential to track how much storage, processing power or network bandwidth each individual business unit uses.

By directly connecting technology spending to real-world business activities, managers hope utility computing will give them new ability to maximize the strategic business value of IT. As users are forced to become accountable for their consumption of resources, they will take on a greater role in defining their needs while also remaining conscious of the costs involved.

“IT departments today must align with business goals and be responsive to changing demands,” said Gary Bloom, chairman, president and CEO of Veritas Software. “That means faster, more reliable applications and lower costs.”

## Pooling Storage

Storage, in particular, has been seen as a likely candidate for the utility computing model. The ability to allow multiple clients and multiple applications to share a common storage pool makes utility storage a perfect fit for organizations seeking to consolidate storage. Combining multiple storage subsystems into one common pool will not only sim-

plify management tasks, but also reduce software costs over the life of the storage. In a consolidated storage environment, customers need just one storage software license, rather than multiple licenses.

Veritas recently refined its utility computing strategy with a new “umbrella” management tool that integrates with the company’s existing backup and recovery technology. Veritas’ CommandCentral Service 3.5 provides IT administrators with additional insight into what resources are being consumed, to what degree they are being consumed, and at what cost to an organization. The service allows administrators to create logical resource groupings, define services, measure service levels and allocate costs to individual departments based on usage.

CommandCentral combines with NetBackup and Backup Exec software to track backup and recovery job details and policy, error and media information from Veritas and third-party data protection software. Veritas said that, initially, the product will support applications such as Tivoli Storage Manager and Legato products. Support for more vendors’ tools will be added in the future.

## Portal Power

CommandCentral measures service levels and usage, and allocates costs based upon that usage, all of which is managed through a dashboard por-

tal view of IT services. This provides users with a “single pane of glass” through which they can manage different Veritas applications.

By managing the backup process through the portal, managers can deliver predefined service levels at the lowest costs and improve efficiency through automation of standard processes. The IT department can define the services they can provide to different users and publish them to the system, and the users can use the portal to select the services they want. For example, a user can select a backup service with either a four-hour or a two-hour restore time, depending upon the cost associated with each option.

CommandCentral also produces up to 75 reports that allow business and IT users to track service-level performance and resource utilization by department, geography and application. A new charge-back feature allows users to define and allocate costs for storage across departments.

While the focus is initially on backup and storage management, later versions of CommandCentral are expected to address other aspects of Veritas’ utility computing strategy, such as server provisioning. For example, it will enable organizations to define the response time required for a particular application, or if a batch job needs to be completed within a certain time frame.

“The need for lower man-

agement costs and fast, reliable access to data is critical to IT organizations,” said Mark Bregman, executive vice president of product operations for Veritas. “The introduction of CommandCentral Service software demonstrates that Veritas

is delivering on its commitment to enable utility computing today by providing tools to help companies more efficiently automate, manage, measure and deliver IT services for optimum performance and increased availability.”



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## <the bottom line>

Utility computing promises the potential to track how much storage, processing power or network bandwidth each individual business unit actually uses. Veritas’ CommandCentral Service 3.5 provides IT administrators with additional insight into what resources are being consumed, to what degree they are being consumed, and at what cost to an organization.

# Calling for Security

## *IP telephony demands strong network protection.*

**I**t's troubling to think that your phone system might be brought down by a computer virus. But if your organization has made the switch to IP telephony, there is that possibility, however slight.

The recent MSBlaster and Sobig virus attacks caused unprotected networks to slow to a crawl — and that meant IP telephony applications bogged down, too. What's more, the Sobig virus affected e-mail and thus disabled or severely compromised many desktop PCs. Users of PC-based IP soft-phones would have a hard time making a call if their PCs weren't working.

All in all, viruses pose a very minor threat to IP telephony. In general, if the data network, servers and applications are kept up to date with the latest patches, the VoIP system should not be affected by malicious code. However, such incidents clearly illustrate the fact that IP telephony networks face the same threats as their traditional data counterparts — threats that would not impact a legacy PBX.

Hackers can break in with the intent of stealing phone service to make voice calls, to gather and/or disclose information, modify data, analyze traffic for clues to company strategies and potentially shut down services. Ensuring robust security while maintaining voice quality demands changes to the security policies and practices of any company implementing an IP telephony solution.

### Patches and Ports

Traditional PBXs are most vulnerable at their administrative consoles, slightly vulnerable at the desktop terminals

and difficult to hack from outside the system. IP telephony systems, in contrast, face security problems from multiple fronts. Voice over IP security issues can be broken down into several components, among them system security, desktop security, voice packet security and IP network security.

Most traditional PBX systems use proprietary software for their operating systems. IP-PBXs can also run a proprietary OS, but part of their appeal is the availability of systems that work with open standards and off-the-shelf software. The open standards approach gives IT departments more control over their telephony destiny but puts systems at greater risk of being compromised.

For example, since many Windows-based IP telephony systems use SQL Server as the supporting database, security problems related to that software could give any hacker that gained access to the system the ability to shut down the phones entirely or execute malicious code. That means a regular regimen of updates and patches is required to prevent viruses and other attacks.

Allowing VoIP traffic typically means opening holes in the firewall, which introduces the risk and potential for various types of network attacks. To accommodate voice quality requirements and instant access for callers, a lot of network ports need to be kept open or opened dynamically as calls are made. Setting up firewalls for voice traffic requires careful planning to achieve a balance between voice quality, security and bandwidth demands.

Some organizations skirt the firewall compatibility issue

altogether by encrypting wide-area VoIP traffic and sending it over virtual private network (VPN) tunnels for site-to-site and remote office connections. This removes the need to open firewall ports for VoIP traffic.

### Can You Hear Me Now?

VoIP environments are particularly susceptible to eavesdropping and theft of services. With an ordinary telephone, someone has to physically attach a wiretap to a telephone circuit to eavesdrop on a call. In theory, everyone on the Internet already has a potential tap on a VoIP phone. Using a common software tool, someone could download VoIP packets and play them back.

A hacker with access to the corporate voice network could cause real trouble. What if an outsider were able to access the CFO's voice-message box in the days before the company was to announce earnings to Wall Street analysts? Imagine someone eavesdropping on phone conversations with customers — or worse, forwarding those calls to a competitor.

Fortunately, IPSec security standards — which support confidentiality, authenticity, integrity and replay protection — address these vulnerabilities at the IP transport layer. Through its encapsulated security payload (ESP) mode, IPSec allows voice packets to be encrypted — the best defense against eavesdropping. However, VoIP encryption has to occur in real time to avoid packet jitter — the unpredictable arrival time of sequential packets of voice data. Fortunately, the three common encryption standards — DES, 3DES and AES — have no inherent algorithmic delay.

Theft of services — or

“phreaking” — can be accomplished using spoofing and the so-called “man-in-the-middle” attack. Spoofing is manipulating header data in packets to make them appear to be coming from someone other than the sender. In a man-in-the-middle attack, a hacker intercepts traffic from both parties in a VoIP call, and then records and changes data.

To prevent such attacks, both sides of a connection can verify their identities using IPSec's authentication header. These authentication algorithms are based on public key cryptography (PKI) and digital certificates.

In addition, both protocols that govern call control in IP telephony — H.323 and Session Initiation Protocol (SIP) — have authentication

features to prevent message spoofing and ensure message integrity. Encryption of packets can also be achieved with Secure Sockets Layer, Pretty Good Privacy and other methods at the application layer. With these technologies in place, a reasonable level of call security can be expected for traffic that traverses public networks.

Like the data networks they are built upon, voice networks must be secured from end to end in order to minimize risk and provide value. Yet, with effort and education, VoIP security issues can be addressed satisfactorily by close cooperation between companies that choose IP telephony and the telephony vendors, carriers and IT service providers they will depend on.

## Through the Firewall

**O**ne reason VoIP and traditional enterprise firewalls don't mix very well is network address translation (NAT), a security measure that changes IP headers and port numbers in data packets leaving the network. This masks the true identity of an enterprise's internal IP addresses, making it appear as though all traffic originated from the firewall. Thus, outsiders can't directly attack machines “inside” the firewall — they can only attack the firewall itself.

While NAT-enabled firewalls are well suited to handling Web, e-mail and remote-access traffic, they can prevent VoIP calls from completing properly. Changing the IP header in a

voice packet can invalidate the message.

“The biggest impediment to widespread adoption of VoIP call processing services is the problem created by the enterprise's existing NAT-enabled firewall,” said Dan Freedman, CEO of Jasomi Networks of San Jose, Calif.

Jasomi is one of many companies seeking solutions to this problem. The approach Jasomi, Kagoor Networks, Ingate, Acme Packet and others have taken is to place an application gateway in the existing firewall's DMZ to translate VoIP call streams between the internal private IP address space and the external global address space.

# Strongest Link

## *Building a better VPN with MPLS.*

Setting up a virtual private network (VPN) can present trade-offs in terms of cost, performance, complexity and flexibility. The first VPNs used leased lines, which were highly secure and fast but expensive and static. Then Internet VPNs emerged as a means to provide more cost-effective and dynamic connectivity using the public Internet. Encryption provided the necessary security.

However, Internet VPNs relied on the "best effort" delivery mechanism of the Internet and could not meet Quality of Service (QoS) requirements. Organizations that needed more predictable performance turned to tunneling VPNs, which set up secure, end-to-end connections for each session. Still, tunneling VPNs tend to be complex and costly, and are still subject to Internet delays and congestion.

An emerging category of VPNs based upon Multi-Protocol Label Switching (MPLS) is proving to be the best of all worlds. MPLS VPNs can be set up over service provider backbones without the need for tunneling or encryption. They can ensure QoS by prioritizing data packets and creating "self-healing" networks that automatically reroute traffic around failed links as needed.

Those features are enabling service providers to roll out robust new VPN services, and catching the attention of large enterprises that need a robust internetworking solution. Infonetics Research estimated that MPLS data traffic grew an average of 118 percent in 2003 and will continue to grow throughout 2004.

"MPLS is already in use for traffic management in service provider networks, and MPLS-

based services are being rolled out around the globe," said Jeff Wilson, executive director of Infonetics Research.

### Special Delivery

In a generic IP network, it's every packet for itself. Delivery of data is on a first-come, first-served basis, with a "hop by hop" routing process that endeavors to determine the shortest path to a given packet's destination. That's fine for e-mail and Web page requests, but doesn't provide for the QoS demands of applications like Voice over IP (VoIP).

MPLS was developed to add the traffic engineering capabilities of traditional Frame Relay and ATM networks to IP-based networks. MPLS sets up virtual data paths called Label Switched Paths that create a kind of "virtual circuit" for data to travel along. It improves network performance by eliminating the need for an IP route look-up and enables packets to be given priority based upon application performance metrics.

### Traffic Cop

MPLS brings clear benefits to VPN technology. The traffic engineering capabilities of MPLS automatically establish and maintain a tunnel across the Internet backbone connecting the entry and exit point. It also provides a range of services to meet QoS, security and any-to-any connectivity requirements.

"The traffic routing capabilities of MPLS enable service providers to offer different classes of service options to customers with optimized routing for mission-critical traffic," said Ann Bager, IDC research manager.

So far, most MPLS-based VPNs are installed at the serv-

ice provider level. They use the service provider's own backbone network, rather than the public Internet, to provide better assurance of network reliability and security. This reduces network complexity and cost as organizations need only worry about the connection between the office router and the service provider's edge router.

### Strong Performance

MPLS VPNs provide a common infrastructure for the delivery of a variety of data services. New services can be added simply by changing the way labels are assigned to packets.

Multimedia services are obvious candidates for MPLS VPNs, which can ensure the QoS needed for the distribution of voice, video and data. Intra-office voice calls can be delivered over an MPLS VPN, with potentially huge savings in carrier long-distance charges. The MPLS VPN can also be used to set up video conferencing, thus saving time and travel costs.

The high-speed data transfer rates of MPLS VPNs provide sufficient performance to connect branch offices, dealers and suppliers to back-office applications. MPLS VPNs can also be used to set up remote access solutions — mobile employees simply use dial-up Internet accounts to access the MPLS VPN from any location.

In short, MPLS VPNs provide a cost-effective solution for high-performance networking across geographically dispersed locations. They eliminate many of the trade-offs associated with traditional IP-based VPNs, enabling the secure, reliable delivery of a wide range of data services.

## Microsoft Posts Reward...

Microsoft has posted a \$250,000 bounty for information leading to the arrest and conviction of those responsible for unleashing the MSBlast.A worm. A second \$250,000 reward was placed on those responsible for the Sobig virus.

The two bounties are the first to be posted under Microsoft's Anti-Virus Reward Program, announced in November. Initially funded with \$5 million, the program is designed to help law enforcement agencies identify and bring to justice those who illegally release worms, viruses and other types of malicious code.

Representatives of three law enforcement agencies — the Federal Bureau of Investigation (FBI), the Secret Service and Interpol — joined Microsoft at the National Press Club news conference where the reward program was announced.

"The malicious distribution of worms and viruses are far from victimless crimes," said Keith Lourdeau, Acting Deputy Assistant Director of the FBI Cyber Division. "We intend to vigorously pursue the perpetrators of these crimes and we hope to see additional industry-government collaboration to identify these individuals."

## New Plastic Memory Invented...

Engineers at Princeton University and Hewlett-Packard have invented a combination of materials that could lead to cheap and super-compact electronic memory devices for archiving digital images or other data.

The researchers, who published a description of the device in the Nov. 13, 2003, issue of *Nature*, discovered a previously unrecognized property of a commonly used conductive polymer plastic coating. Their memory device combines this polymer, which is inexpensive and easy to produce, with very thin film, silicon-based electronics.

The device would be like a CD in that data could be written to it only once. It also would be like a conventional electronic memory chip because it would plug directly into an electronic circuit and have no moving parts.

"The device could probably be made cheaply enough that one-time use would be the best way to go," said Princeton professor of electrical engineering Stephen Forrest, who led the research group.

## Worm Scams Credit Card Numbers...

A variant of the MiMail worm that attempts to dupe recipients into disclosing credit card information began circulating the Internet in November. The worm, dubbed MiMail.I, sends an e-mail that appears to be from PayPal, the popular e-payment system used to purchase items on eBay and other Internet auction sites.

The subject line of the e-mail says, "Your PayPal.com account expires," and the message asks the recipient to update their credit card information or risk having their PayPal account closed. A pop-up window appears with fields for entering the credit card number, PIN and security code.

If the information is entered, the worm stores it in a file and e-mails it to one of four e-mail addresses, two of which are in Moscow and two in the Czech Republic.

Security experts warn that there is a growing trend toward malicious code attacks that seek criminal gain rather than just thrill or notoriety.

## Top-Level Domains May Go Global...

The Internet Corporation for Assigned Names and Numbers (ICANN) is exploring the addition of new top-level domains that could include non-English character sets. While domain names may now be registered in Arabic, Chinese and other non-English character sets, they must end with “.com” or another approved top-level domain.

ICANN has asked for studies into any technical roadblocks prohibiting the introduction of non-English top-level domains,

and plans to review the issue in September 2004. If approved, the new domains could be registered as early as 2005.

The organization, which has oversight over Internet addressing policies, has also agreed to speed up the timetable for approving new top-level domains for specific groups.

There are currently 258 top-level domains, including such ubiquitous extensions as “.com,” “.net” and “.org” as well as those designated for specific countries.

## Data Standards Vital to Patient Safety...

Uniform information technology standards for the collection, storage and sharing of health information are needed to improve patient safety, says a recent report by the Institute of Medicine (IOM). The group recommended the creation of a national healthcare network that includes electronic records of patients' care, secure platforms for the exchange of information and data standards that will make health information understandable to all.

While some healthcare organizations have installed computer systems to manage patient information, a national infrastructure is needed because patients often receive services from many different providers. Without standards, the different systems used in various organizations may not be compatible.

The group urged the U.S. Department of Health and Human Services to take the lead in establishing a public-private partnership to develop and promote data standards.

## Cyber Attacks Moving Faster...

The third quarter of 2003 saw a 15 percent increase in the number of security incidents over the preceding quarter, according to the Internet Risk Impact Summary (IRIS) released by Internet Security Systems (ISS). The ISS X-Force security intelligence team documented 823 new viruses and worms, an increase of 26 percent over second quarter.

The team attributes the swell in security incidents to fast-moving attacks that

quickly target new vulnerabilities.

“The window of time between vulnerability disclosure and the release of a working exploit continues to shrink, leaving enterprises with even less time to learn about and prevent attacks,” said Chris Rouland, vice president of ISS X-Force. “Security solutions must be proactive if they are to remain ahead of new threats. We also recommend minimizing vulnerabilities as hackers will continue to target known weaknesses in popular software.”

## Officials Target Internet Scams...

The Federal Trade Commission (FTC), U.S. Department of Justice, U.S. Secret Service, Federal Bureau of Investigation and U.S. Postal Inspection Service recently filed more than 285 criminal and civil law enforcement actions targeting Internet scams and deceptive spam in a joint crackdown on cyber fraud.

The FTC announced federal court orders against 10 individual and five cor-

porations. They represent an array of deceptive schemes and illegal scams including Internet auction fraud, bogus business opportunities, deceptive money-making scams and phony credit offers.

“We intend to send a strong message to those who use the Internet to break the law: Cyberspace is not outer space and we will trace you, track you and stop you,” said Timothy J. Muris, chairman of the FTC.

## Microsoft: Big Changes

Windows XP has been on the market for two years now, so naturally everyone is clamoring for details on the next version of the world's most popular operating system – or so Microsoft hopes.

The next version of the desktop operating system, code-named Longhorn, is expected to debut in late 2005 or early 2006. It will have a new look and feel, very different from Windows XP. Its guts will also be radically different from Windows XP, because they're based on XML. And it will be the first version that won't function fully without new hardware.

With the exception of Windows NT, which was a change from the ground up, industry experts believe this could be the biggest change ever to Windows.

One of the biggest changes is Microsoft's work on a new underlying file system derived from the company's database development. That system is designed to make it easier for people to find information on PC hard drives and across networks. The software maker plans to introduce the new file system as part of Longhorn and Yukon, the next version of its SQL Server database software.

Longhorn applications will sport a 3-D appearance and will fully support digital media, which will make PC-based games more vivid. At the same time, Microsoft is improving the tools used by developers and administrators to install business applications on a corporate network.

Although a sharp, new look may be reason enough for some people to adopt the new operating system, Microsoft has yet to describe in detail Longhorn's business benefits.

Some of the graphics enhancements on tap for Longhorn will likely appeal more to niche users, including gamers and graphics design-

ers, rather than mainstream business customers.

Still, software tools that allow companies to integrate media capabilities into desktop applications could be a big draw for some Windows users in big companies. For the last few years, companies have been cutting back on travel and doing more with videoconferencing systems.

But Microsoft will still need to explain to corporate IT managers and professional software developers how Avalon — Microsoft's new graphics presentation technology — can go beyond sprucing up existing applications to contribute to the bottom line.

Microsoft will likely pitch Avalon to application developers because it's really a collection of application programming interfaces (APIs), which developers write to tap into the graphics capabilities of Longhorn. Microsoft plans to simplify the creation of applications that use media including audio, video and animation. Windows applications will mimic Web-style navigation to guide users through specific tasks or find information. By tying Avalon to Microsoft's Indigo back-end Web services software, developers can more easily connect data from a corporate database to GUI elements, according to Microsoft.

Microsoft plans to introduce its own applications, including its Office desktop suite and its Jupiter suite of server applications, to help drive demand for Longhorn. But convincing independent software developers of the value of Longhorn's graphics capabilities through Avalon, according to industry analysts, is essential in driving sales of the operating system.

Microsoft, however, will have to convince business users that Longhorn will actually offer real business benefits. Otherwise, Windows 2000 and Windows XP will remain the operating systems of choice for most users.

< behind the scenes >

## Business Process Fusion Requires Cooperation

**B**usiness process fusion is the transformation of business activities achieved by integrating previously autonomous business processes. It will drive stronger alignment of IT with core business processes and provide linkage of operational and management processes with a true end-to-end scope. Business process fusion is not just another IT integration project. The objective is to integrate business processes to create value, regardless of how, or even whether, the underlying technology is integrated.

As business process fusion becomes a key driver for increasing value from IT investments in enterprises, it will create new challenges for business and IS management, according to the research firm Gartner. One such challenge will be choosing where to target investments for integrating and accelerating business processes to create significant savings, or new or enhanced competitive capabilities.

"This will require a level of understanding and common vision between IS and business management that many enterprises will find difficult to achieve," said Michael Gerrard, vice president for Gartner. "By fusing business processes previously perceived as loosely, or not even, connected, enterprises will create new entities. Enterprises will need more complex and precise management to perform these processes effectively and deliver on their business value potential."

In February and March of 2003, Gartner surveyed 100 companies from a variety of industries to determine how they are using, or considering, real-time enterprise concepts and practices, for which busi-

ness process fusion is essential in their operations.

According to the survey, 87 percent of respondents said they have projects under way to improve the speed of business processes, 49 percent expect to have similar projects under way during the next 12 months and 40 percent during the next 13 to 24 months.

"Clearly, business process efficiency and speed are already widely regarded as important investment opportunities, especially because 90 percent of the respondents believe that improving the speed of processes is important to their companies' success," said Gerrard.

Participants in the survey were asked what they believed would be the biggest barriers to redeveloping business processes to enable the real-time enterprise. Multiple responses were allowed. Sixty-four percent of respondents cited a lack of funding and 45 percent cited the inability of business management to visualize how the real-time enterprise would improve financial performance.

Forty percent cited a lack of senior management understanding of the concept and 35 percent cited business management's inability to visualize how the real-time enterprise could affect market performance.

"Business and IS managers must communicate concepts such as business process fusion as specific business visions. This will help business managers understand the business opportunities that can be created from the inventive use of technology," said Gerrard. "Focus on the business model and key business processes, and how changes in the speed and dynamics of these processes can have significant even transformational, effects."

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## Do More With Less

### Windows Server 2003

The Windows Server 2003 family takes the best of Windows 2000 Server technology and makes it easier to deploy, manage and use. The result: a highly productive infrastructure that helps make your network a strategic asset for your organization.

Windows Server 2003 includes all the functionality customers need today from a Windows server operating system to do more with less, such as security, reliability, availability and scalability. In addition, Microsoft has improved and extended the Windows server operating systems to incorporate the benefits of Microsoft® .NET for connecting information, people, systems and devices.

Windows Server 2003 is a multipurpose operating system capable of handling a diverse set of server roles, depending on your needs, in either a centralized or distributed fashion. Some of these server roles include:

- File and print server
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- Mail server
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- Remote access and VPN server
- Directory services, DNS, DHCP and WINS
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# Worlds Collide

*Vendors working to merge cellular and WiFi technologies.*

Convergence has become generally accepted to mean the intersection of voice and data on the same network. Although convergence is a reality and continues to reveal its promise in corporate settings, seamless convergence at the end-user level is

another matter entirely. While voice packets can be delivered across data networks and vice versa, users can't jump between cellular networks and wireless LAN networks without hanging up and switching devices.

That may change in the near future as chip, handset

and telephony platform vendors work together to bring uninterrupted connections for both voice and data transmission to both enterprise and consumer mobile phone users. Global System for Mobile (GSM) communications, its derivatives and its successors used by cellular carriers will meet with the networking standard 802.11 (Wi-Fi). The hope is that convergence will overcome the shortcomings of both — namely that cellular technology is inadequate for secure transmission of heavy data streams and that voice traffic on WLANs is pointless if users can't roam.

#### One Device, Many Networks

"Motorola believes that tying together WLANs, IP telephony and cellular technologies in a single handset will extend the mobility of the cellular networks inside the enterprise, and provide the best available access to the user," said Dan Coombes, senior vice president and general manager for Motorola's Network Systems Group.

Motorola, telephony platform vendor Avaya and wireless networking vendor Proxim have already announced collaboration on a converged platform to be built on open standards. Carrier networks — facing stiff competition for users and moderate adoption of enhanced services — are looking toward the Wi-Fi "public hotspot" market as a potential

source of growth.

Advanced cellular technology and Wi-Fi technology are basically the same — they are radios — but the widespread GSM and Enhanced Data rates for GSM Evolution (EDGE) standards are designed to deliver short bursts of information over distances of several miles.

Wi-Fi has higher transmission rates over shorter distances of a few hundred feet. While enhanced data services are attractive to cellular carriers, the real driving force for convergence is voice over IP.

#### Everybody Wins

In addition to promising seamless transition between the two standards on a single device, the voice over WLAN scenario offers a couple of interesting benefits. One is that a carrier could provide location-based services at public hotspots, such as on-the-fly personal navigation or targeted marketing offers. Another is the ability to request high bandwidth (and battery draining) content while on the cellular network and having it delivered when a WLAN is near.

In October, the chipset manufacturer and wireless software developer TTPCom unveiled what it calls a "GSM.11" platform that will place both standards on a single silicon chip, allowing them to share some resources, such as power, while maintaining separate radios and memory.

The incorporation of 802.11 technology into a low-cost handset will allow wireless operators to accelerate their displacement of wireline business to their networks. Enterprises will be able to reduce some of their cellular bills while having the ability to deliver time- and location-specific content to employees on the road, on the corporate campus and on the shop floor.

Given adequate network support, a new converged standard handset will seamlessly move between an in-home or in-enterprise LAN running VoIP and a wide-area cellular network. In addition, consumers will have the low access cost of VoIP when "at home" and the added value of being in contact through a single handset when away. Enhanced billing, bundled premium services and compatible devices will allow enterprises to better standardize and manage their communication platform.

Although some vendors have ambitious and aggressive plans for convergence, carriers already have a great deal invested in the high-speed, high-volume third-generation (3G) networks anticipated in the next few years. Yet both GSM and 802.11 technology are in place today, and once handsets and call management software are developed it should be relatively easy for enterprises and consumers to see immediate benefits.

## Secure Acceleration



Microsoft Internet Security and Acceleration (ISA) Server 2000 is an extensible enterprise firewall and Web cache server that integrates with the Microsoft Windows® 2000 operating system for policy-based security, as well as accelerating and managing internetworking. ISA Server provides two tightly integrated modes — a multilayer firewall and a high-performance Web cache server. The firewall provides filtering at the packet, circuit and application layer, stateful inspection to examine data crossing the firewall, control of access policy and routing of traffic. The cache improves network performance and enhances the end-user experience by storing frequently requested Web content. The firewall and cache can be deployed separately on dedicated servers or integrated on the same computer.

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## <the bottom line>

Cellular wireless networks are stable, mature and promise to get faster. Wi-Fi networks are fast, high-volume and offer exciting communication and productivity potential for enterprises. Convergence of the two technologies has everyone — carriers, enterprises, employees, vendor and consumers — interested in the possibilities.

## Ready-to-Wear Goes Wireless...

Smart Watches with MSN Direct were center stage at Ready-to-Wear Wireless, the first fashion show ever held at COMDEX. Three male models wearing the latest designs from Fossil and Suunto strutted down the runway, demonstrating watches based on Microsoft's Smart Personal Objects Technology (SPOT).

The sold-out show was among the first public previews of Smart Watches with MSN Direct, which enable wearers to get

the latest news, weather, event listings, appointment reminders, personal messages and more.

The watches are fashionable as well as functional. One of Fossil's Abacus brand of Smart Watches features an oval face and black and chrome body. The rugged Suunto n3 is designed for an athletic lifestyle.

The watches displayed at the show will hit stores across the U.S. and Canada in early 2004.

## What's on PC? ...

In the near future, TV-computer hybrids will provide the ability to capture a TV program, digitize it and store it on the computer's hard drive. These so-called Media Center PCs are but one of the new products expected to emerge in the analog PC-TV tuner market in the next five years, according to market research firm InStat-MDR.

Today's analog PC-TV tuner cards allow the user to watch TV on a PC while

simultaneously using other PC applications. "Add-on" cards are commonly available from retail computer stores for \$100 to \$200, with the U.S. market alone worth in excess of \$200 million. PCs are also increasingly being sold with PC-TV tuner cards pre-installed.

The PC-TV market — which includes analog PC-TV tuners and digital terrestrial tuners and set-top boxes, among other products — is expected to more than quadruple by 2007.

## Wireless Industry Gets Greener...

What do you do with that broken cell phone or outdated wireless device? The Cellular Telecommunications & Internet Association (CTIA) would encourage you to recycle it.

The CTIA and its participating members recently unveiled an initiative entitled "Wireless ... The New Recyclable" to promote the environmentally sound recycling of used wireless products and accessories. Among the initiative's objectives is to promote the recyclability of products and

packaging and provide consumers with more value and choice while minimizing environmental impacts.

Wireless carriers, manufacturers and organizations participating in the initiative include AT&T Wireless, Cingular, Motorola, Nextel, Nokia, Panasonic, ReCellular, Sony Ericsson, Sprint, Verizon Wireless and the Wireless Foundation.

CTIA is the international association for the wireless telecommunications industry, representing carriers, manufacturers and wireless Internet providers.

## Hello, Tigger? ...

Walt Disney Internet Group is developing character voice ring tones that will bring the familiar voices of popular Disney and Disney/Pixar characters to PCS Vision mobile phones in the U.S.

Initially, the character voices will include Mickey Mouse, Minnie Mouse, Donald Duck, Goofy, Buzz Lightyear, Woody, Stitch, Pooh and Tigger. Several messages are available from each of the

characters. Two of Mickey's rings tell customers to "Answer your phone," and "You got a message." One Goofy ring tone says "Hello? Is anybody there?" and a message alert tells customers, "Oh boy, you got some mail!" The ring tones can be set for calls, voice mail alerts and alarms.

Walt Disney Internet Group introduced ring tones and graphics based on Disney characters and properties on earlier wireless platforms in late 2002.

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