

# ISPIRIAN INSIDER

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## Leave IT to the Experts

*UltraTech Resources helps local contracting company get the most out of its IT investments.*

**T**he do-it-yourself method is usually the name of the game when it comes to running a small business. Entrepreneurs often wear many hats, or seek the assistance of friends and relatives to lend their expertise in certain areas.

Such was the case with Benchmark Contracting. The St. Louis-area company opened its doors in March 2004, operating with only three PC workstations. Although not what some would call "cutting-edge" technology, the company did require some IT expertise to keep e-mail and virus programs up to date and running properly.

"We had a friend who knew enough about computers to get us by at first," said Debbie Podhorn, an employee of Benchmark Contracting.

That didn't last long though. The company grew quickly. More computers were needed, and along with that, a better knowledge of networking and general IT expertise was desired.

"We grew so fast that we needed to find an IT partner with some experience and expertise that we were lacking," said Podhorn. "We literally grew from three workstations to 12 overnight."

Podhorn expressed Benchmark's IT challenges to a close business partner who in return recommended UltraTech

Resources, a Chesterfield, Mo.-based networking solution provider, specializing in business networking and management, and PC repair. Podhorn quickly brought UltraTech Resources on board to handle the project.

The IT solution provider helped Benchmark get the most out of its newly purchased workstations and Microsoft Small Business Server 2003 by installing Microsoft Windows Exchange 2003, and training Benchmark employees on how to use the system properly.

The new hardware and software allows Benchmark to perform more effi-

cient and secure networked computing and take advantage of existing IT investments. Furthermore, Microsoft Exchange allows Benchmark to host its own e-mail, speeding up communication with partners and customers.

organization's business-critical information is stored in its e-mail system.

As a result, many IT managers say their Exchange Server is the only unit in their server room that they couldn't possibly migrate to Linux, and that if they took Outlook away there would be an employee revolt. Industry analysts at the Radicati Group predict there will be 302 million corporate e-mail mailboxes worldwide this year – 35 percent of which will be powered by Microsoft Exchange.

"It doesn't require a very big learning curve," said Podhorn. "It's one of

**"Using our system is much quicker now. UltraTech Resources expanded the system in a very user-friendly manner. It is night and day from what we were working with before. They even set us up a system that prints out construction plans — something we had never been able to do before."**

cient and secure networked computing and take advantage of existing IT investments. Furthermore, Microsoft Exchange allows Benchmark to host its own e-mail, speeding up communication with partners and customers.

Exchange is not just about e-mail, however. It also enables seamless, Web-based collaboration for Benchmark by offering what competing platforms don't – integration of the computer desktop, e-mail and documents. It is estimated that the typical user spends more than two hours per day using his messaging system for sending or checking e-mail, using the calendar and schedule functions, collaborating with others and managing tasks.

Exchange is also an important data source, as users not only spend more time in their e-mail applications, but store more data there as well. By some accounts, about 45 percent of an

those tools that, once people use it, they realize there's just no other way to do it. Using our system is much quicker now. UltraTech Resources expanded the system in a very user-friendly manner. It is night and day from what we were working with before. They even set us up a system that prints out construction plans – something we had never been able to do before."

Operating a small business requires individuals to know and do many different things. The staff accountant may double as a salesman, but when it comes to handing out the role of an IT administrator, careful consideration should be taken. In today's business, most organizations depend on the computer network to carry them through daily operations. As a result, businesses experience more productivity and fewer technology disasters when IT tasks are left to the experts.

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# Shape of Things to Come

*IT agility and efficiency to be the focus of 2005 investments, analysts say.*

In the years since the dot-com bubble burst, CIOs and other business leaders have focused relentlessly on reining in IT spending. While industry analysts don't anticipate a significant increase in technology budgets for 2005, there is a general sense that organizations are once again looking for IT to become a strategic business tool.

Analysts at IDC predict a moderate 6 percent growth rate in IT spending in 2005, while Meta Group expects businesses to increase IT budgets by only 3 percent in 2005 and 5 percent in 2006. Yet both firms anticipate a significant shift in the way organizations view their IT investments.

"IT budgets are not simply declining or leveling off; rather, they are changing completely," said Howard Rubin, senior vice-president at Meta Group. "Companies are shifting from a pure cost-cut mode to a model that emphasizes agility and efficiency. They are removing fixed costs in favor of variable costs."

In general, an IT department's effectiveness is going to be judged on the contributions it makes to business operations. IDC asked C-level executives what they expected from their IT departments. Reliability (20 percent) and success of new

solutions (17.7 percent) ranked highest in the responses, with simplicity (9 percent), security (8.6 percent) and better technology than competitors (6.4 percent) lagging far behind.

Reliability is a priority as organizations move to adopt Web services, service-oriented architectures and globally distributed networks. Many companies are beginning to emphasize new projects developed in .NET and Java, while still maintaining their legacy applications written in languages like COBOL.

**"Companies understand the volatility of the marketplace and are endeavoring to create an organization flexible enough to respond to unexpected market changes."**

"Unlike the technology boom, wherein companies threw money against a whole set of technologies, or the IT recession, wherein companies cut spending across the board, the new IT reality is being driven by efficiency," said Rubin. "Companies understand the volatility of

the marketplace and are endeavoring to create an organization flexible enough to respond to unexpected market changes."

Following are some of the key trends expected in 2005:

## Outsourcing

A topic that weighed heavily in the recent presidential elections, outsourcing is expected to continue to grow as organizations look to decrease their spending on non-strategic services. IDC surveyed 100 companies and found 50.3 percent were planning to outsource some of their IT work in 2005. The duties that most companies will likely send overseas include legacy application maintenance (50 percent), Web application development (47 percent), packaged application implementation (41 percent) and legacy/custom application development (41 percent).

According to IDC analysts, the chief challenge for offshore outsourcing is in the management of the contracts. Performance metrics, escalation procedures and change management processes top the list of concerns for companies shipping their work overseas.

## Compliance

Compliance with government regulations such as the Sarbanes-Oxley Act has become an IT initiative as organizations develop new applications or enhance old ones in order to document, control and secure business information. AMR Research estimates that companies will spend \$5.8 billion on meeting Sarbanes-Oxley requirements in 2005. According to AMR, the top five spending priorities in technology supporting Sarbanes-Oxley compliance are document and records management, internal and external security, business process management, applications compliance management software, and enterprise and financial application suites.

## Telecommunications

IDC says further consolidation in the telecommunications industry is inevitable in 2005, with the FCC waving the green flag and a nearly unlimited number of possible deals. Meanwhile, the telcos and cable companies will continue their battle for dominance in the consumer market with the introduction of "grand slam" offerings that bundle wireless voice in with their "triple play" bundles of fixed voice, broadband Internet and cable TV. And VoIP will finally go mainstream in

2005 with an acceleration of high-volume cut-over deals by large enterprises and the large-scale delivery of mainstream consumer offerings announced last year by the incumbent carriers.

## Business Mobility

Enterprise spending for wireless and mobility will increase 36 percent in 2005, according to a recent survey of more than 400 IT decision makers conducted by NOP World Technology. The survey also found already-strong penetration of mobile devices with more than 70 percent of enterprises using cell phones, more than 50 percent using notebook computers, about 40 percent using PDAs and about 30 percent using smartphones. The study also found that security and the cost of airtime are the leading barriers to wider deployment of mobility initiatives, with 77 percent of respondents citing both of those concerns. About 72 percent cited support costs as a barrier.

## Security

The security industry is in the midst of an important transition. A few years ago, an industry of tactical solutions for solving individual security problems — antivirus, firewalls, intrusion detection, etc. — was sufficient. Many industry watchers expect vendors to deliver security integration in 2005 by developing open and standardized interfaces to share, distribute and correlate security-relevant events and information.

## Open Source

A variety of analysts predict the continued rise of open-source software, including the Linux operating system and compatible middleware applications. The concept of free products, however, is fading as users increasingly move toward purchasing enterprise-grade Linux distributions for reliability and security reasons.

## 64-Bit Computing

The transition from 32-bit to 64-bit desktop computers will happen dramatically faster than most experts have predicted, with many users switching within the next two years, according to the Meta Group. IDC reports that unit sales of commodity servers based on AMD's hybrid 32-/64-bit CPU Opteron processors soared 81 percent in the second quarter of 2004.

## Bush Re-election Favors Tech?

What does President Bush's re-election in November mean for the technology sector? Most industry insiders say Bush's stances on broadband, spectrum management and Internet telephony will be good for tech.

An early indicator of the Bush technology agenda came just days after the election when the Federal Communications Commission (FCC) ruled that providers of Internet-based phone call services fall under the jurisdiction of the federal government and cannot be regulated by states, a step that could help boost the emerging services. Commissioners voted 5-0 in favor of Vonage Holdings of Edison, N.J., which had asked the agency to declare the company's product an interstate service, giving the FCC regulatory control.

Vonage had been battling public utilities officials in Minnesota who wanted the company to register in the state as a telecommunications service, subjecting it to rate regulation and other state rules.

During the 2004 campaign, Bush

called for universal broadband for all Americans by 2007, touted Wi-Fi wireless links and hydrogen fuel cells, and recommended that portions of the radio spectrum be auctioned to the highest bidder. Bush, who wants to eliminate some tech-related corporate welfare programs and is viewed as more sympathetic to free trade, also has said the R&D tax credit should be made permanent and Internet access should not be taxed.

Bush's re-election also is expected to lead to an uptake in offshore outsourcing. While the practice has been controversial because of lost jobs in the U.S. technology sector, industry experts say companies cannot ignore the savings incurred by opting for less-expensive overseas labor.

Experts say U.S. firms that reportedly were holding back until after the election likely will move ahead with their plans to offshore tech jobs because Bush's policies are viewed as friendly to the trend. His opponent in the election, Sen. John F. Kerry, had promised to make it harder for companies to go offshore.

## Automation Beats Offshoring...

Offshoring of call center functions can reduce costs, but automated speech technology provides an even more cost-effective approach to servicing low-level transactions, according to analyst firm Datamonitor.

A call center in a lower-wage offshore location such as India saves a U.S. company 25 percent to 35 percent per transaction when compared to a domestic call center. However, a call serviced through a speech automation systems costs approximately 75 percent to 85 percent less than a call handled by an agent in India.

Currently, offshore call center agents deal with low-level transactions, while higher-level transactions are typically handled by domestic agents. This has led to a sharpened focus among enterprises to improve and automate phone-based transactions through speech recognition technology.

## Top 10 Spyware Threats Identified...

Webroot Software recently named the 10 most significant spyware and adware threats. These include programs like PurityScan and Gator that display pop-up ads on the victim's computer, to KeenValue and Perfect Keylogger, which can record keystrokes and collect personal information.

"It's our goal to inform Internet users of the ramifications of having potentially unwanted programs on their systems," said Stiennon, head of Webroot's dedicated in-house Threat Research Team. "It is their choice to keep or remove these programs based on the information available to them. We're making sure they have that information so they are making knowledgeable decisions."

Because many of these programs take advantage of security vulnerabilities, Webroot recommends that users install Microsoft security patches, avoid using freeware, and disable downloads via ActiveX in Internet Explorer.

## Utility Computing Will Cost IT Jobs...

The automation of IT infrastructure services and business processes through such concepts as utility and on-demand computing will put even more pressure on traditional IT jobs than offshore outsourcing during the next two to 10 years, according to Gartner analysts.

"The trend toward offshore services has monopolized attention in terms of job losses," said Gianluca Tramacere, analyst in the IT Services and Sourcing group at Gartner. "There is less awareness that increasing reliance on highly automated infrastructures will significantly reduce the need for manual procedures and direct involvement of the workforce."


Tramacere said that IT professionals should strengthen their business and IT skills and any specialized knowledge of their organization's business models and processes in order to defend their jobs.

## Search Engine Marketing Tops \$4 Billion...

Advertisers in North America spent more than \$4 billion on search marketing programs in 2004, according to research by the Search Engine Marketing Professional Organization. That figure includes payments to search engines, search-related media companies and search engine marketing agencies, as well as in-house expenditures in support of such programs as paid placement, paid inclusion, search engine optimization and related technology platforms.

Less than half of advertisers reported that search engine marketing budgets were newly created funds for that purpose. The rest said search engine marketing budgets were coming in whole or in part from shifts away from traditional or Internet marketing programs.

Advertisers expect to spend, on average, 39 percent more on all search marketing programs in 2005 compared to 2004.



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# When It's 64

## *Making the transition to 64-bit computing.*

**T**he more things change, the more they stay the same. That's certainly true when it comes to computers. The industry is on the verge of a veritable explosion of 64-bit computing — not just in the data center but all the way down to the desktop. The fuel for this explosion is the availability of low-cost 64-bit chips based upon the same x86 chip architecture at the heart of every PC.

Of course, 64-bit computing is not new. Various 64-bit chip architectures have been used in the data center for many years, where high-end operating systems and applications could take advantage of it.

However, the vast majority of installed applications, particularly in Windows and Linux environments, were written for 32-bit x86 platforms. It's simply not feasible for organizations to throw all that away and make a giant leap to a new technology.

With the latest 64-bit x86 chips they don't have to. They can continue to support existing 32-bit applications while transitioning to 64-bit computing.

### Staying Compatible

AMD took the lead in mainstreaming 64-bit computing with its Opteron and Athlon products for servers and desktops, respectively. Intel decided to base its 64-bit Itanium chips on a completely new architecture but has since introduced the Xeon processor with Intel Extended Memory Technology (EM64T), which provides 64-bit x86 compatibility for low-end servers and workstations.

Both AMD and Intel processors allow organizations to run their existing 32-bit x86 applications without modification. Because these chips are based upon the x86 architecture, 32-bit applications run natively without performance-degrading emulation.

On the contrary, organizations can enjoy immediate performance gains by running their existing 32-bit applications on a 64-bit platform. In a 32-bit x86 server, both the operating system and applications share the same 4GB virtual memory space. In a 64-bit x86 server, the operating system can assign each application its own virtual memory space, limited only by the total amount of system memory available. This allows more efficient handling of complex processes and large amounts of data.

Of course, the true benefits of 64-bit processors can only be realized with applications designed to take full advantage of them. These chips can process data in chunks twice as large as their 32-bit predecessors, resulting in performance gains that far surpass any incremental boosts from clock speed or memory capacity.

**Windows, Linux and Unix operating systems and applications are now available for 64-bit x86 systems, and more and more 64-bit x86 software is expected to become available over the next year.**

Windows, Linux and Unix operating systems and applications are now available for 64-bit x86 systems, and more and more 64-bit x86 software is expected to become available over the next year or so.

### Double Down

In most organizations, the transition to 64-bit computing will begin with the replacement of low-end "PC" servers as they reach the end of their lifecycle. Over the past decade, 32-bit x86 servers have provided an economical alternative to 64-bit systems — particularly at the edge of the network where "good enough" performance was acceptable.

Now, however, ever-increasing volumes of data and real-time information requirements are driving demand for higher-performance processors across the enterprise. As a result, 64-bit systems are rapidly making inroads into the data center and even onto the desktop, and software vendors are upgrading their applications to take advantage of these platforms.

Most organizations have a huge installed base of 32-bit applications they'll need to support for the foreseeable future, but it may not make sense to continue to buy 32-bit hardware that will soon need to be replaced. While wholesale migration to 64-bit desktops is likely premature, organizations can safely begin to purchase 64-bit servers. The latest chips enable organizations to support their 32-bit applications as well as take full advantage of the huge wave of applications being upgraded to 64-bit.

# E-mail Archival: A Federal Case

*Regulations and legal discovery require that organizations effectively store and retrieve e-mail.*

**W**hat's in your inbox? According to a recent study by the Radicati Group, the average user sends 34 e-mails and receives 99 e-mails every day. That translates to a hefty 14.7MB of e-mail data daily — a 53 percent growth over last year. E-mail has become the preferred means of business communication, and the amount of e-mail traffic continues to rise dramatically with no end in sight.

Many organizations simply back up their messaging servers to relieve the online storage burden associated with all this e-mail data. Because e-mail is not subject to change or frequently accessed, IT managers believe that backup is an adequate means of archival.

However, a barrage of new federal regulations dealing with the retention of corporate data is causing them to re-examine how they archive e-mail. 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 fixed-content data for decades.

More significantly, these regulations along with legal discovery processes require that organizations be able to find specific e-mails — often within a short timeframe — or risk fines. Tobacco giant Phillip Morris was fined nearly \$3 million last summer when it was found the company had deleted e-mail after being ordered to retain all documents potentially relevant to a government lawsuit.

## Backups Insufficient

Legal experts agree that simply saving all e-mail to backup tape or disk is the wrong approach. Backups are designed to restore entire systems — searching for a particular e-mail on a series of backup tapes would be much more difficult than finding the proverbial a needle in a haystack.

Compounding the problem, IT has a tendency to hoard multiple backup copies to support system recovery and avoid data loss rather than purge based on retention. Before you can even begin looking for the needle, you first have to find the right haystack.

Phillip Morris is hardly the only company to be penalized for inadequate e-mail archival. 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,

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indexing, imaging, copying, reviewing for accuracy, scanning for attorney/client privileged information, shipping and storage can cost up to \$10 per message.

## A Better Way

With the enormous amount of e-mail traffic entering and exiting mailboxes each day, more and more organizations are turning to e-mail archiving solutions to help manage this information. In fact, e-mail archival is the fastest-growing segment of the regulatory compliance software market. Only about a fourth of the companies surveyed by the Radicati Group had a formal e-mail archiving solution in place, and two-thirds of these were brand new deployments, less than a year old.

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, Fujitsu Softek and many more offer products designed archive e-mail in a number of formats.

These diverse vendors each look at e-mail archival differently. One might view it as a storage problem, others from security, document management or business process management perspective.

However, there is a set of common functions. E-mail archival applications 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.

## What to Look For

Despite the risks associated with inadequate e-mail storage and retrieval processes, experts say organizations

shouldn't be too quick to deploy e-mail archival solutions. The Radicati Group study found that many organizations that have deployed such solutions aren't very satisfied with them. The biggest complaint among customers is that the products are too time-consuming to manage.

That isn't entirely the fault of the software. Before purchasing a system, organizations must analyze their e-mail retention and access requirements, and develop policies to enforce those requirements. Only then can an organization begin to compare the features of various solutions.

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 have the ability to compress data and strip off attachments that are duplicates of other e-mail. 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 as system configurations do change.

Organizations should keep in mind that e-mail is not the only unstructured data that should be managed for regulatory compliance and potential legal discovery. Ultimately, organizations will need comprehensive document management systems that incorporate all such data, including files from personal productivity applications. That makes planning and policy development even more critical, as organizations will need to integrate their existing e-mail archival solutions within the broader picture.

## Regulations Apply to IM, Too

**T**he Sarbanes-Oxley Act requires that public companies provide detailed report to the Securities and Exchange Commission on all electronic communications — including instant messages — that pertain financial reports. The Sarbanes-Oxley Act went into effect November 15, 2004, for public companies with more than \$75 million market capitalization. Companies with smaller market capitalizations must comply by July 15, 2005.

"Many companies aren't prepared to comply with the new measures, and they're going to be sorry if they don't find a way to do it soon," said David Fowler, IMlogic's vice president of marketing and strategic alliances.

Sarbanes-Oxley isn't the only regulation affecting IM. In 2003, the National Association of Securities Dealers (NASD) issued an advisory to member firms about the use of IM by employees, emphasizing that all instant messages must be retained for at least three years and are subject to the same rules and regulations governing other written and electronic correspondence within the financial services industry. The NASD further cautioned firms that

consumer versions of instant messaging do not always provide business users with tools to monitor or archive IM communications.

"Many financial services companies are unable to detect, track or manage IM, which creates an enormous liability exposure," said Gideon Stein, CEO of Omnipod. "In addition, financial services firms do not want sensitive messages transmitted via plain text, which is what the consumer networks do. Encrypted solutions introduced from the consumer companies often leave the choice to encrypt up to the end-user."

Experts recommend that organizations invest in instant messaging compliance and management systems that addresses the major risks associated with electronic communications. Some such solutions integrate with e-mail archival systems.

"The rapid growth in corporate IM use is forcing companies to seek integrated IM and email compliance solutions that share a common policy infrastructure," said Francis deSouza, CEO of IMlogic.

## Researchers Find Few Linux Bugs...

Former Stanford University researchers analyzed 5.7 million lines of Linux software code over four years and found 985 bugs — most already fixed by the open-source community. That's just .17 bugs per thousand lines of code compared to the 20 to 30 bugs per thousands lines Carnegie Mellon University's CyLab Sustainable Computing Consortium estimates for most commercial software.

The Linux source code analysis project started in 2000 at the Stanford University Computer Science Research Center as part of an initiative to improve core software engineering processes. The initiative continues at Coverity, a commercial software company started by five of the lead Stanford researchers.

As a public service, Coverity will regularly provide bug analysis reports and make a summary of the results freely available to the Linux development community.

## Users Satisfied with E-Government...

Satisfaction with federal e-government is nudging upward, despite a significant increase in the number of harder-to-please first-time users, according to the latest findings of a quarterly e-government report. The American Customer Satisfaction Index is produced by the University of Michigan and co-sponsored by ForeSee Results.

The index shows that e-government satisfaction levels are roughly equivalent to citizens' evaluations of government-agency performance in general — and both online and offline means of interacting with government are trending upward. Analysis shows that one of the main drags on overall satisfaction is the inadequacy of search functionality on e-government sites.

The proportion of first-time users increased by 14 percent in the past year. These users tend to register satisfaction ratings that are 5 percent to 10 percent lower than repeat visitors.

## ZigBee Specification Ratified...

The specification for ZigBee, a technology designed for low-cost, low-power, wireless sensor networks, has been ratified by the ZigBee Alliance.

ZigBee uses very small, very low-power devices that connect together to form a wireless control web. It is optimized for very long battery life measured in months to years from inexpensive, off-the-shelf non-rechargeable batteries. It can control lighting, air conditioning and heating, smoke and fire alarms, and other security devices.

The specification will enable the alliance's 100 plus members to create interoperable products that will be embedded in consumer electronics, home and building automation, industrial controls, PC peripherals, medical sensor applications, toys and games. A number of companies announced ZigBee-ready products in 2004, and the alliance expects numerous ZigBee-compliant products to be released in 2005.

## Four New Internet Domains Proposed...

The organization with primary oversight of the Internet recently gave preliminary approval to proposals for four new top-level domain names. The four proposed names are ".mobi" for the mobile industry, ".jobs" for human resources, ".post" for postal services and ".travel" for the travel industry.

Applicants proposing the four names each paid \$45,000 to have them reviewed by the Internet Corporation for Assigned Names and Numbers (ICANN). The applicants can now negotiate with ICANN for final approval of the suffixes, a process that could take months.

There are currently about 250 top-level domains, including ".com," ".org" and country-specific suffixes such as ".fr." In 2000, ICANN approved seven new top-level domains, the first major addition since the creation of the Domain Name System in the 1980s.

# SPIT Happens

## *Spam over Internet Telephony latest VoIP security issue.*

Often lost in the enthusiasm for IP telephony is the reality that voice calls — once somewhat protected by hardened circuit-switched technology — face security challenges as they move to IP.

"The move to VoIP phones is gaining momentum, but it is riskier than you may have imagined," said Elliot Markowitz, editorial director, Ziff Davis Media eSeminars. "Corporations and individuals embracing VoIP can realize substantial cost savings by utilizing the Internet and bypassing expensive long-distance communication providers. But what is not commonly known is that such a move can open up the floodgates for hackers to infiltrate phone conversations and steal confidential data just as if they broke into an IT system. Spammers can also flood the system with massive denial of service attacks, rendering the phone system useless."

IP telephony networks generally 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.

The type of junk traffic that plagues e-mail accounts could also become a problem for voice networks in the near future. Some industry watchers say Spam over Internet Telephony, or "SPIT," has the potential to be an even bigger problem than its e-mail counterpart. That's because, like e-mail, the same message could be broadcast to thousands of VoIP users at virtually no cost.

Although marketers already use voice mail for commercial messages, IP telephony makes a more effective channel because the sender can send messages in bulk instead of dialing each number separately. Internet phones are often mapped to telephone numbers in the interests of computer-telephony integration (CTI) but each has an IP address as well. Unscrupulous marketers can use spambots to harvest VoIP addresses or may hack into a computer used to route VoIP calls. Furthermore, because calls routed over IP are much more difficult to trace, the potential for fraud is significantly greater.

"SPIT isn't a serious problem yet because VoIP telephone systems are primarily being used by businesses and enterprises, and so there hasn't been a big target audience to make it worthwhile for VoIP spammers to start sending out

VoIP spam yet," according to Pierce Reid, vice president of marketing for Qovia, a VoIP tools vendor based in Frederick, Md.

With consumer adoption of VoIP taking off — some estimates say a third of households will have IP telephony by 2008 — it's only a matter of time before the spammers see a critical mass, says Reid.

According to Qovia, SPIT is a combination of telemarketing calls and e-mail spam in which a single "caller" uses Internet technology to send thousands of voice messages simultaneously into recipients' VoIP voice mailboxes. Marketers can pro-

**"The move to VoIP phones is gaining momentum, but it is riskier than you may have imagined. Corporations and individuals embracing VoIP can realize substantial cost savings by utilizing the Internet and bypassing expensive long-distance communication providers. But what is not commonly known is that such a move can open up the floodgates for hackers to infiltrate phone conversations and steal confidential data just as if they broke into an IT system."**

gram their computers to send 1,000 voice messages a minute over Internet-telephony technology, according to one recent Qovia test. The U.S. Telecommunications Association recently described this capability as a top security challenge ahead for the telephony industry.

In an effort to prevent the spread of VoIP Spam, Qovia says it has created an application that can identify unsolicited and unwanted messages and differentiate these messages from those that recipients desire to receive. The company plans to incorporate this tool into a security module that will be available as part of its VoIP Monitoring and Management System (VMMS) later this year. The company claims to have filed a patent application on the technique.

"Fortunately, we have learned from the telemarketing industry, then the e-mail spammers, and, more recently, the instant messaging spammers," Reid added. "And, we are able to begin to address the problem before it becomes an issue."

# Honey, I Shrunk the WLAN!

*New entry-level products make wireless LANs cost-effective for SMBs.*

**B**usiness demand for wireless connectivity is growing dramatically worldwide, driven by the expanding ranks of enthusiastic mobile PC users and reinforced by business demands. Mobile PC users with wireless access to information — anywhere, anytime — are substantially more productive and efficient than their wired colleagues. Studies have also documented increased job satisfaction tied directly to the greater convenience and flexibility enabled by notebooks and wireless access

Until recently, however, much of the demand for wireless focused on large enterprise implementations and vertical markets such as manufacturing and transportation with much to gain from mobility. Branch offices and small to midsize businesses (SMBs) have been slower to adopt wireless LANs (WLANs).

That's because the total cost of ownership (TCO) calculations of SMB WLANs hadn't made sense. For one thing, wireless adds a layer of complexity to the network environment, particularly when integrated with a traditional wired LAN. As a result, SMB WLAN implementations have traditionally been limited to historic and hard-to-wire facilities and vertical applications.

On top of that, the cost of enterprise-class WLAN equipment set the bar too high for many SMBs. Smaller organizations can't get by with consumer-grade WLAN equipment — they need the same kinds of security and quality of service (QoS) features as large enterprises. However, those features account for the cost differential between consumer and enterprise solutions.

"Small to medium-sized businesses are no longer content with access points designed for small offices and home users, as they typically lack the kind of features that are critical to these businesses," said Aaron Vance, Senior Analyst at Synergy Research Group. "These enterprises are demanding the same feature set — in particular, rigorous security capabilities — that larger enterprises have always sought from wireless access points."

## Incredible Shrinking Costs

However, the cost of wireless solutions has been steadily decreasing, and a number of vendors have released entry-level WLAN solutions aimed specifically at the SMB market. These solutions give SMBs and branch offices — as well as service providers who are deploying wireless hotspots — cost-effective, enterprise-class wireless connectivity with lower TCO

and an appealing return on investment.

With the latest entry-level WLAN products, SMBs don't have to sacrifice features for cost savings. Wireless switches designed for the SMB market deliver the benefits of a switched architecture — simplicity of implementation, improved performance and centralized management — at a cost that makes sense for networks with only a few access points. Support for IEEE 802.11e for prioritized access to wireless media enables voice, data and video applications with advanced QoS and fast roaming capabilities.

Security and the challenge of integrating today's mobility solutions within existing infrastructures are among the significant issues that confront organizations considering WLAN deployments. However, today's entry-level WLAN products address these concerns with support for IEEE 802.11i with AES encryption and more advanced rogue AP and client detection

## Expanding Productivity

WLANs enable SMBs to connect mobile workers, provide information access in common work and meeting areas and to extend the company network into areas where wired connections are impractical or uneconomical. Some smaller organizations may dispense with a wired LAN entirely and deploy a WLAN as a standalone infrastructure.

All business users with wireless connectivity can easily communicate and access their information anytime, anywhere, leading to enhanced productivity and efficiency. For example, professionals can access time-sensitive, business-critical content on the go, 24 hours a day and thus make faster decisions. Virtual teams can communicate seamlessly with colleagues via face-to-face video conferencing. And account executives can improve customer service by accelerating response time and resolution.

It's not surprising that the top priority for deploying WLANs and equipping employees with mobile devices is to increase worker productivity. According to a survey of enterprise decision makers and mobile technology managers from IDC's Mobile Advisory Counsel (MAC), increased worker productivity ranked higher than any other potential strategic benefit of mobility, including reduced field service time, increased revenue and market share, and reduced costs.

## Growing Expectations

As WLANs become more main-

stream, organizations are looking beyond basic wireless access to providing wireless connectivity to back-end servers, applications and data. The true leading-edge organizations have already mobilized corporate applications such as customer relationship management, field service and sales force automation tools.

IDC survey findings also suggest a concerted push toward devices with converged features is in store for mobile enterprises. Organizations indicate plans to purchase mobile phones that are data-enabled, PDAs that are wirelessly enabled, converged devices/smartphones and the latest BlackBerry devices that can support voice telephony.

"Organizations that can effectively leverage mobility solutions to achieve their business objectives are leading the next evolutionary wave," said Dana Thorat, senior analyst of IDC's Mobile User program. "These organizations are moving toward device convergence, wireless LAN infrastructures, wireless access to back-end servers and corporate data, and

deployments beyond basic PIM and e-mail, all while instituting standards, policies and processes to minimize the security risks of these investments."

## Small Wonder

Today's business PC users are constantly in motion and continuously connected, their productivity fueled by data streams that are growing exponentially. These always-on workstyles and the rising productivity they make possible is driving the dramatic growth in business demand for wireless connectivity.

Multiple studies confirm productivity gains of up to eight hours a week when business users are equipped with mobile PCs and wireless access.

Companies of all sizes are moving aggressively to realize these advantages with new wireless infrastructure investments that enable anytime, anywhere connectivity at the personal, local and wide-area network levels.

## The Opposite End of the Spectrum: Firms Design, Test Largest WLAN

**I**ometrix and Trapeze Networks recently announced that they have designed and built the largest, most scalable and secure enterprise-class WLAN test network to date.

Dubbed "My Big Fat WLAN Test," the goal was to determine whether today's WLANs meet the stringent requirements for security, scalability and management of today's enterprises. The test was modeled on a network used in a 50-story multi-tenant commercial building.

My Big Fat WLAN Test included 10,000 roaming 802.11 clients, 20 switches and 200 multi-vendor access points. It also included a voice server and IP-PBX. The network met the performance demands of state-of-the-art wireless security measures, including IEEE 802.1X authentication and Wi-Fi Protected Access 2.0/IEEE 802.11i encryption.

The network was designed and built in a matter of days using Trapeze's RingMaster planning and management tool suite — an undertaking the company says would otherwise have required months of work.

"Many IT managers have linger-

ing concerns about deploying wireless," said Bob Mandeville, president and founder of Iometrix. "Our tests unequivocally demonstrate that WLANs scale to meet the rigorous security, scalability and manageability requirements for enterprise deployments. Trapeze has built a solid product that has proven to meet the needs of large enterprises and multi-tenant facilities."

Understanding the impact of emerging services is critical as IT managers prepare their infrastructures today. The demonstration also explored advanced services, such as voice and video over wireless as well as radio frequency location services to locate users and rogues.

"What Trapeze has achieved in this test should not be ignored," said Steve Broadhead, founder and director of Broadband-Testing. "Trapeze had the courage to take on the issue of WLAN scalability that — let's be honest here — most other WLAN vendors have shied away from. They have shown that their system works and works well," concluded Broadhead.



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# Remote Access Made Easy

## *Simplicity key benefit of SSL VPNs.*

**Y**ou can't blame IT managers for wanting to lock down access to the network, given the endless barrage of increasingly sophisticated security threats they must attempt to thwart. However, mobile users are demanding easy access to the network from anywhere — a dilemma that's spurring the dramatic growth of the SSL VPN market.

Virtual private networks (VPNs) based upon Secure Sockets Layer (SSL) technology make secure remote access easier for both end-users and network administrators. They combine SSL — the encryption and authentication technology built into every Web browser — with access control, security policy enforcement and other tools to create secure connections to the corporate network via the public Internet.

Although they are more limited than other remote access solutions, SSL VPNs come with fewer headaches. They make it feasible for organizations to say "yes" to road warriors' remote access demands without increasing security risks or IT support woes.

### Out of the Tunnel

Traditionally, companies have provided secure remote access through VPNs based upon the IP Security (IPsec) suite of protocols. IPsec VPNs establish secure "tunnels" for private communications over the public Internet, providing end-users with highly secure access to network resources as if they were physically connected to the corporate LAN.

However, IPsec VPNs require that client software be installed on the end-user's machine — software that is notoriously difficult for the IT department to manage and the end-user to operate. In addition, IPsec VPNs often require special firewall configuration to allow public IP addresses through the firewall.

With SSL VPNs, the remote user's interface is a standard Web browser. There's no learning curve because almost all users are familiar with browsers, and the IT department doesn't have to install and maintain any client software. What's more, the end-user can access the network from any Internet-connected device, including public kiosks.

### Dealing with Drawbacks

That fact points to one of the drawbacks of SSL VPNs. A public machine used to access the corporate network could harbor usernames, passwords and downloaded data long after the session has ended. The caching function of the Web browser might allow the next kiosk user to read a sensitive e-mail simply by hitting the "back" button. Forgetful users might neglect to log off, leaving an open connection to the network for the next person to come along.

SSL VPN vendors have developed techniques to eliminate these concerns — from cache "scrubbers" to automatic session timeouts — but they vary in their thoroughness. For example, not all SSL VPNs handle the caches stored by the newest search tools, such as Google Desktop Search.

Untrusted remote machines can also be the source of viruses and other malicious code. Some SSL VPNs included policy-based mechanisms to check the remote machine for up-to-date antivirus software and security patches. A public kiosk-based system might be denied access to an application because it lacks proper security measures.

### Know Your Limits

SSL VPNs don't allow the deep network access enabled by IPsec VPNs — many products only support browser-friendly applications. However, this curse can be a blessing because it enables IT managers to limit the resources an end-user can access via an SSL VPN. And many organizations have found that mobile users only need access to e-mail and a few other Web-based applications.

SSL VPNs allow IT departments to provide that level of access to road warriors without the hassle of assigning and maintaining laptops. They also make it simpler to set up secure connections with business partners, suppliers and customers because there is no need to add gear to their networks.

SSL is not expected to eliminate IPsec anytime soon. Both are effective, standards-based technologies, each with its own strengths and weaknesses. An organization's choice depends upon who will be using the VPN and what they need to access.

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# Price is Right

## *Tax breaks make technology more affordable than ever for SMBs.*

Small and mid-sized businesses (SMBs) in the U.S. gained significant tax benefits with the passage of the "American Jobs Creation Act of 2004" in October. One of the major breaks for SMBs is a two-year extension for deducting the cost of technology and other equipment purchases.

Two years ago, the Jobs and Growth Tax Relief Reconciliation Act of 2003 had quadrupled write-off limits from \$25,000 to \$100,000 per year for office equipment, including hardware and off-the-shelf software purchases. Those deductions were set to expire at the end of 2005, but were extended to the end of 2007 under Section 179 of the new Act, which was signed into law by President Bush on Oct. 22.

"Perhaps the most critical part of the Act was Section 179, which retained the provision that SMBs can write off \$100,000 in new equipment purchases," said Russell Morgan, president of the Information Technology Solution Providers Alliance (ITSPA), a national, non-profit

alliance that helps SMBs understand how technology and local technology providers can help them succeed.

"This means that SMBs will still be

**Two years ago, Congress raised the threshold for section 179 depreciation expensing from \$25,000 to \$100,000. The new law extends the increased expense ceiling through 2007.**

able to deduct up to \$100,000 toward the cost of new technologies and other office equipment. Small businesses that take advantage of this tax break — especially those that deduct their technology purchases in a single year — will realize enormous savings."

This limit is adjusted each year for inflation. The adjusted amount for 2004 is \$102,000. This means small-business owners can take an instant deduction totaling up to \$102,000 for the cost of business property such as office equipment, computers, software, office furniture, etc. as a deduction against their net income. It is a "use it or lose it" deduc-

tion, however, and any unused amount cannot be carried forward to future years.

The substantial write-offs for technology purchases, combined with dropping

prices of PCs, software, printers and servers, represent a rare opportunity for small businesses, Morgan said.

"Buying new technology now gives SMBs a real advantage by providing them with similar reach and capabilities as larger companies," he said.

Many small businesses also will benefit from the law's reduced tax rate for domestic manufacturing and the broader definition of "manufacturing." For companies that qualify as manufacturers, the tax rate drops from a top rate of 35 percent to 32 percent. That 3 percent reduction will grow to 9 percent by 2010.

The great thing about this new deduc-

tion is that companies don't have to be a traditional manufacturer to take advantage of it. Under Congress's broader definition, businesses qualifying for the new deduction now include software, film and video companies, many service providers and more.

Another provision of the bill allows some SMBs to avoid paying corporate tax by organizing as "subchapter S" corporations. According to the new tax legislation, the definition of "small" now includes companies with as many as 100 different shareholders. In certain cases, family members from as many as six generations are considered "one" shareholder for tax purposes, effectively shielding family income and inheritances from taxation at the corporate level.

"ITSPA is very pleased with this bill because it encourages small business spending, which is at the heart of America's economic engine and results in the speeding up of our nation's economic recovery," said Morgan.



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# VoIP: Host or Buy?

*Hosted solutions eliminate upfront costs but may not be the best long term.*

Internet-based telephony clearly is here to stay. The ability to have voice and data residing on a single network has dramatically changed both voice and data communications, offering a variety of cost and productivity benefits for businesses of all sizes.

As with any major technology initiative, however, implementing a converged network to enable Voice over IP (VoIP) involves some infrastructure costs and requires staff or business partners who have the requisite skill sets. Recently, a variety of vendors have begun offering hosted voice services, claiming to provide a smoother migration path with decreased up-front expenditures.

While hosted IP voice services might be right for some, organizations should be aware of the potential pitfalls.

A relatively new business model for telephony services called IP Centrex is designed to provide hosted services that are delivered to customers on a subscription basis. Like traditional Centrex telephone solutions in which the equipment providing call control and service logic functions is owned and operated by the service provider, IP Centrex frees the customer from the costs and responsibilities of major equipment ownership.

## What to Consider

IP Centrex is offered by some of the biggest players in the telecom services marketplace. Qwest Communications recently rolled out IP Centrex Prime, a hosted service for enterprises with multiple locations. That followed the company's

earlier launch of OneFlex, a hosted VoIP offering for small and midsize businesses (SMBs). OneFlex provides local, long-distance and high-speed Internet access using VoIP phones, and it enables users to administer their own functions, including setting up conference calls and voice mail and adding users.

SBC Communications' PremierSERV Hosted IP Communication Service allows midsize and large businesses to manage their customized features online, including find-me/follow-me capabilities. Users must have SBC's dedicated Internet access with a frame relay connection. Like MCI's Advantage IP service, PremierSERV delivers calls both over pure IP networks and over the PSTN (Public Switched Telephone Network), but it is not available everywhere nationwide.

As with any market in its infancy, there are also a large number of smaller providers and startups offering hosted voice services. Organizations considering a hosted service should carefully examine the capabilities of potential providers. Many do not offer true business-grade services, such as broadband VoIP or VoIP over IP-VPN. In addition, many providers rely on the local telephone loop to connect to the customer: if the loop goes down, service goes down with it.

According to a recent report by Research And Markets, an international technology research firm, consumers face confusing choices when assessing the merits of telephony service providers. The report notes that despite the relatively small size of the industry today, organizations assessing different IP Centrex services will find themselves confronted with a wide array of service level agreements.

Price can be another major concern. While a hosted service may save money on the front end, the ongoing costs can eventually become burdensome. As with traditional Centrex communication solutions, IP Centrex providers bill on a contracted monthly rate for basic service and offer a variety of additional services that are billed on a per-user, per-application basis. However, the Research And Markets study concludes there is presently very little consistency in the way carriers set the prices for these services.

## Pay Now or Pay Later

Many organizations determine that,

in the long run, it is less expensive to buy IP PBX equipment and maintain it at their site — particularly if they plan to keep the system for several years. An IP PBX offers investment protection because the money going into the system results in ownership, whereas IP Centrex users are essentially leasing the service. In addition, it is typically less expensive to add new users to

**Gartner predicts that IP PBX sales and hosted voice services will experience significant growth through 2007.**

an IP PBX than with IP Centrex because all the data and infrastructure is already built into the system.

Owning the system creates other advantages, including the ability to customize and upgrade systems and migrate to more advanced products in the future. Ownership also creates the ability to add the type of features users are accustomed to from legacy TDM systems. Typical IP PBX systems offer many more features than IP Centrex systems and can include such items as database integration and screen pops.

Security is another major consideration. More and more viruses are being aimed at voice systems, and organizations that own their own IP PBX are not dependent upon a service provider to establish the proper level of security.

Gartner, a leading industry analyst firm based in Stamford, Conn., predicts that both IP PBX sales and hosted voice services will experience significant growth through 2007. Gartner says business lines supplied as part of local VoIP carrier services — which includes IP Centrex — will grow at an 83 percent compound annual growth rate (CAGR) in the U.S. The company also expects 34 percent CAGR of pure IP PBX line shipments over the same time frame.

Each approach has its advantages. IP Centrex might be most appropriate for organizations that just want basic calling service, are concerned about up-front costs and lack the staff or bandwidth to implement an IP PBX. However, an organization that requires special services or customization and wants the ability to accommodate future growth probably will be better served by owning and maintaining its own system.

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UltraTech Resources 01/05

## Put on Your Thinking Cap...

Researchers with the New York Department of Health and the State University of New York in Albany recently tested a "thinking cap" that enabled four subjects to control a computer using their thoughts.

The four volunteers faced a computer screen while a program translated brain signals into cursor movements. With practice, all four subjects were able to control the cursor.

Past experiments involving a primate subject required that electrodes be implanted in the monkey's brain. In this experiment, 64 electrodes in the cap recorded brain waves through the subjects' scalps.

"The results show that people can learn to use scalp-recorded electroencephalogram rhythms to control rapid and accurate movement of a cursor in two dimensions," the researchers wrote in the Proceedings of the National Academy of Sciences.

## Brrrr! I Can't Type...

Chilly workers make more errors and are less productive, according to a study led by Alan Hedge, professor of design and environmental analysis and director of Cornell University's Human Factors and Ergonomics Laboratory.

In the month-long study, nine workstations were equipped with sensors that sampled air temperature every 15 minutes. The researchers recorded the amount of time employees keyboarded and the amount of time they spent making error corrections. Hedge then used new software to correlate temperature with productivity.

When the office temperature increased from 68 degrees to 77 degrees, typing errors fell by 44 percent and typing output jumped 150 percent.

"The results of our study suggest raising the temperature to a more comfortable thermal zone saves employers about \$2 per worker, per hour," Hedge said.

## Google Checks Out Library Books...

Google is working with the libraries of Harvard, Stanford, the University of Michigan and the University of Oxford, as well as The New York Public Library, to digitally scan books from their collections and make them searchable.

"Even before we started Google, we dreamed of making the incredible breadth of information that librarians so lovingly organize searchable online," said Google co-founder Larry Page. "Our work with libraries further enhances the existing Google Print program, which enables users to find matches within the full text of books."

Google search results include links to the titles of any books relevant to the query. Clicking on a title delivers a Google Print page where users can browse the full text of public domain works and brief excerpts and/or bibliographic data of copyrighted material.

## Men Outspend Women Online...

Who says men don't like shopping? Just give them an Internet connection, and suddenly they become virtual shopaholics.

According to the third annual America Online survey of more than 6,200 shoppers who research or make purchases online, men are shopping online more than women. And not just by a hair: The AOL "Online Shopping Cities" survey suggests men spent up to 15 percent more online this holiday season than women — \$326 for men vs. \$284 for women.

These findings may come as something of a surprise to women. Ninety percent of the married women questioned think they do more online shopping than anyone in their households, and value bargain-hunting more than their male counterparts. Only 74 percent of the married men questioned said they do the most online shopping.

## 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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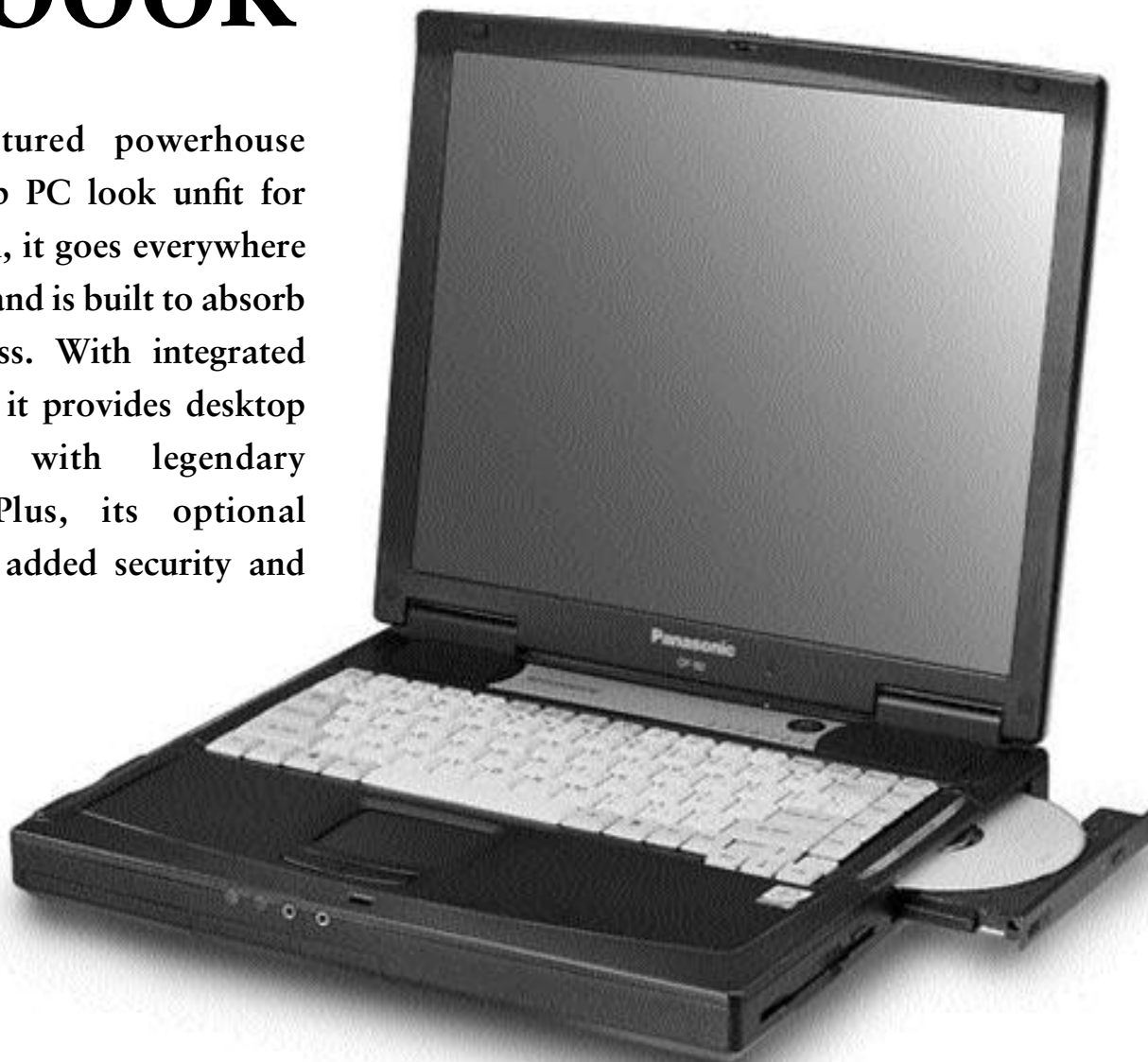
  
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