FEDS SEEK IT HELP ON NET SECURITY

Users fear privacy loss, government regulation

BY PATRICK THIBODEAU
Federal officials are trying to create an information security partnership with key private companies for sharing electronic attack information and best practices. Security managers see benefits but also worry that government cooperation may have unwanted consequences.

With so much of the nation's vital services — from telecommunications to energy — in private hands, government officials say they can't improve national security without private cooperation. They also warn that cyberattacks on private companies could cripple part of the nation's infrastructure. The move is part of a plan President Clinton unveiled in 1998 to make infrastructure protection a high priority.

U.S. Department of Commerce officials held a closed-door meeting in New York earlier this month with officials from about 75 companies, representing transportation, finance, energy and telecommunications, to persuade them to work with the government.

The government said it will also help companies by offering incentives to students to pursue careers in technical areas as well as funding for security-related research and development projects. Many Security, page 77

IT CAN REDUCE MEDICAL ERRORS

Push follows U.S. report on fatal drug mistakes

BY JULEKHA DASH
A federal effort to wring medical errors out of the U.S. health care system may speed up some slow-moving information technology initiatives that could prevent dangerous drug mix-ups.

On Dec. 6, President Clinton ordered federal agencies that finance or provide health care to take steps to reduce medical errors. In his briefing, Clinton mentioned that technology could be part of the solution.

The pronouncement came shortly after a report from the Institute of Medicine — a research arm of the prestigious National Academy of Sciences in Washington — revealed that 44,000 to 98,000 Americans die each year from preventable errors, such as prescription mistakes.

Though Clinton's statement was directed at the government-financed segment of health care, it will likely spur action throughout the industry, said Arnold Milstein, a consultant at New York-based William M. Mercer Inc.

For instance, Milstein heads a task force that is urging hospitals to reduce medical errors. In his briefing, Clinton
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CAN I HELP YOU?
Lands' End pursues customer service relentlessly, with exclusive tech licensing deals and a humane management approach that makes staff and customers happy. Page 38

Y2K - FORGET ANYTHING?
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Shippers Try Software To Tally Foreign Tariffs

BY CRAIG SYEDMAN

The race to deliver the ability to calculate the full cost of e-commerce transactions to foreign buyers is heating up as the big package carriers pair up with rival vendors of international logistics software.

But the technology still needs to be proven in real-world settings before it can be put to broad use by online retailers and other companies doing business on the Web.

"Quite frankly, there are still a number of unknowns," said Michael Comstock, senior vice president of e-commerce and planning at DHL Airways Inc. in Redwood City, Calif. "We really need to test this."

DHL Airways last week said it plans to launch several pilot projects early next year, using a landed-cost calculation engine developed by New York-based Syntra Technologies Inc.

Later this month, sources said, Atlanta-based United Parcel Service of America Inc. is expected to make a similar teaming announcement with NextLinx Corp., in Silver Spring, Md. And Memphis-based FDX Corp. is quietly working the same turf with Vastera Inc. in Dulles, Va., the sources added.

What's pushing the shipping companies to act is a burning need on the part of online retailers to be able to automatically tell overseas customers the so-called landed cost — what a product will really cost after duties, tariffs and other fees are taken into account.

"The endgame here is to be able to guarantee [the final cost]," Comstock said. That could open up international markets to online retailers that currently don't want to risk surprising overseas buyers with big bills they refuse to pay.

Healthy Discounts, a small retailer of nutritional supplements that launched a Web site last spring, quickly stopped taking overseas orders because trying to manually calculate landed costs was such a headache.

"I don't want to turn business away, but I knew we had to do it right or no one would come back," said Mariano Farrar, the owner of Healthy Discounts in Austin, Texas. And the stakes are high: Farrar said purchases by foreign distributors could eventually exceed domestic sales to consumers.

Healthy Discounts plans to be one of Syntra's first users.

The landed-cost issue first emerged into the public eye last summer (Page One, July 19). But the software is still "in the birthing stage," said John Fontanella, an analyst at AMR Research Inc. in Boston. The big question is whether vendors are feeding accurate duty and tariff data into their calculation engines, he added.

UPS, FedEx, USPS Geared Up for Net Surge

BY LINDA ROSENCRANCE

The 1998 holiday season was barely over when United Parcel Service of America Inc. announced planning for this season's surge in online and catalog shopping. Preparations at Federal Express Corp. in Memphis, Tenn., included making sure its online shopping application was easier to use.

Even the U.S. Postal Service kicked into high gear planning for November, launching its Electronic Merchandise Return Service for returning Web-based purchases.

The estimates by now are familiar. This year, the number of online gift buyers will triple to 23 million from 7.5 million last year, according to a survey of 12,000 consumers conducted by the Boston Consulting Group in Toronto. These shoppers will spend $9.5 billion, according to a study by Rochester, N.Y.-based Harris Interactive Inc.

So it follows that the explosion of e-commerce has forced shipping and delivery firms to invest heavily in technology infrastructure to take advantage of the surge. "In fiscal year 1999, FedEx spent $1.9 billion on technology, while Microsoft spent a total of $3 billion. The people who say FedEx is as much a technology company as a transportation company aren't too far off," said Donald Broughton, a transportation analyst at A.G. Edwards & Sons Inc. in St. Louis.

In January, the first thing UPS did was review its logistics systems, looking at last year's performance and developing computer models for air and ground operating plans to handle this year's load. On Friday, UPS expected to deliver nearly 18 million air and ground packages globally, 5.5 million more than its average daily volume, according to UPS spokeswoman Joan Schonhuber.

In June, UPS launched a package-tracking system that uses handheld computers containing an internal radio and allows for two-way communication (see chart). The system lets UPS drivers relay information to a centralized database within one second of taking a signature or order.

UPS said it implemented the new system in response to pressure from customers for immediate information about packages — and after investing $1.2 billion last year on systems to let customers track parcels and calculate shipping rates.

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Divided E-Sales Tax Panel Lacks Data

Businesses unlikely to get guidance on Net tax issue from congressional commission

BY PATRICK THIBODEAU
SAN FRANCISCO

The congressional commission that's charged with solving the Internet tax puzzle argued long and hard last week over whether companies that make it easy for customers to shop online should collect taxes.

But in the end, the 19 members of the Advisory Commission on Electronic Commerce said mostly relied on gut feelings and rhetorical flourish to argue their cases because they lacked hard data about the impact of Internet taxes on businesses and governments. The panel remains deeply divided.

The problem, said commission member John Sidgmore, vice chairman of MCI WorldCom Inc., is that e-commerce is still in its infancy. He said freeing Internet merchants from tax collection obligations will hurt Main Street companies, but definitive conclusions are still out of reach.

"Why wouldn't it be smarter to give it a three-year or four-year break before we conclude for sure that it should never be taxed or that it should be taxed?" Sidgmore said.

The commission may indeed punt and ask Congress to extend the current moratorium on new Internet taxes — in stead of making a specific recommendation on e-commerce taxes.

The Internet Tax Freedom Act, approved last year, set a three-year moratorium on new Internet taxes.

The commission will hold its final meeting in March in Dallas and give Congress its recommendations in April.

For businesses, the lack of consensus means continued uncertainty about how to design systems to deal with taxes (see related article below).

Business users should build flexibility into their systems because this is going to be an evolving debate," said commission member David Pottruck, president and co-CEO of Charles Schwab & Co. in San Francisco. "No one knows where this debate will end."

Without hard facts, the debate is turning in circles.

Commission Chairman James Gilmore, the governor of Virginia, pointed out repeatedly that sales tax collections are rising in states despite online sales. He said South Dakota Gov. William Janklow, who was participating in the meeting as a panelist, whether sales tax revenues "are going down as a result of e-commerce."

"Sales tax collections are up 6% in South Dakota, Janklow replied. "The question is, would they have gone up 9% if they didn't have the money from e-commerce?" he said.

So-called brick-and-mortar companies assailed plans to limit tax collection obligations for Internet sellers.

"The U.S. government shouldn't be in the business of picking tax winners and losers," said David Bullington, vice president of Wal-Mart Stores Inc. in Bentonville, Ark., which also sells goods on the Internet and pays sales taxes in every state that collects them.

"This sends a message that the discriminatory tax policies are acceptable — they're not," Bullington said.

But he also argued that the current system is too complicated. Compliance with a hodgepodge of state laws hurts smaller businesses, he said.

Oracle Pushes Customers to Buy Online

BY ROBIN ROBINSON

Oracle Corp. last week said it is lowering the price of its database, streamlining its discounting and moving purchases to its Web site to reduce the cost of servicing client accounts and, ultimately, to increase the market for databases.

Oracle CEO Larry Ellison said 98% of Oracle's revenue has been inking deals that were negotiated and moving purchases to its Web site to reduce the cost of servicing client accounts and, ultimately, to increase the market for databases.

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BRIEFS

SAP Socks Oracle Databases Again

SAP AG took another swipe at Orac- le Corp.'s databases by announc- ing that Microsoft Corp.'s SQL Serv- er 7.0 is now its primary develop- ment database for Windows NT and Windows 2000.

Two weeks ago, SAP said IBM's DB2 was replacing Oracle as its preferred database for key Unix and Linux systems. But the deals don't mean SAP is reducing its support for Oracle databases.

PGP Can Be Exported

Santa Clara, Calif.-based Network Associates Inc. said it has been granted a license by the U.S. gov- ernment to export its full-strength PGP encryption software to all countries without restriction. The decision ends a decades-long ban on the export of strong encryption products.

Export Rules Delayed

The Clinton administration has de- cided to wait a month before release- ing the final version of revised U.S. export controls on all strong en- cryption products. The White House postponed the deadline to Jan. 15 to allow for more talks with affected industries.

NCR Expands Internet Services, Outsourcing

NCR Corp., in Dayton, Ohio, will up- grade Internet banking services for East Fort Lauderdale, Fla.-based BankAtlantic. NCR also announced that it will set up an outsourcing unit that will offer customer relation- ship management, data ware- houing and e-commerce systems.

Railroads Halt for Y2K

Two freight railroads and some Am- track routes will temporarily suspend operations on New Year's Eve as a precaution against any year 2000- related problems. Spokesmen at the Union Pacific Corp. and the Mor- falk Southern Railway Co. last week said the railroads will test switches and other equipment while the trains are stopped.

EXPORATIONS OF DIGITAL CERTIFICATES TROUBLESOME

User confusion seen as biggest problem; browser updates needed to avoid warnings

BY ANN HARRISON

E-COMMERCE SITES that use digital certifi- cates to provide encryption and reas- sur users that the site is authentic are being warned to upgrade any server digital certificates that are set to expire Jan. 1.

The root certificates for AT&T Corp., Needham, Mass.-based GTE CyberTrust Solutions Inc. and Mountain View, Calif.-based VeriSign Inc., which have been used to sign e-commerce site certificates for the past five years, will expire New Year's Day. A Web site cer- tificate identifies itself to the user's browser, and a root cer- tificate is used by the user's browser to validate the integri- ty of the Web site certificate, guaranteeing that both parties are who they say they are.

Vendors of expiring certifi- cates have installed new root certificates and alerted com- merce sites, but there could still be issues that cause trouble for information technology teams and unnerve customers, said Carl D. Howe, research di- rector at Forrester Research Inc. in Cambridge, Mass.

Continued Warnings

According to Howe, thou- sands of sites must still replace their root certificates. And even if they do, visitors with older Netscape Communica- tions Corp. browsers — those no longer supported and which don't recog- nize Entrust certificates.

struct their users to upgrade their browsers, according to vice president Anil Pereira. Meanwhile, the e-commerce sites should delete specified root certificates from certifi- cate authorities, back up their keys and digital certificates and test their systems with VeriSign's free testing services.

 Howe added that companies can also purchase site certifi- cates that expire in 2010 and 2020 from other certificate au- thorities, including Entrust Technologies Inc. in Plano, Texas, Equifax Inc. in Atlanta and Thawte Consulting in Durbanville, South Africa.

Richard Pendergast, director of Travelocity Systems at Sabre Group Inc.'s Travelocity.com in Fort Worth, Texas, said his company is using the Entrust root certificates to make sure users of Netscape browsers don't see expiration messages. Travelocity is also using new root certificates from VeriSign to update Microsoft Internet Explorer browser Versions 3.0 and 3.02, which don't recog- nize Entrust certificates.

Travelocity took both of those steps because "the cus- tomer isn't always going to un- derstand that this problem isn't a Y2K problem or a Web- site problem but a browser problem" said Pendergast, ex- plaining that Travelocity's goals are to offer uninterrupt- ed service and "not to cause visitors any grief."
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- Bob Lesher and Charlie Buse, Information Technology, Exel Logistics

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Wireless App Protocol Builds Momentum

BY DOMINIQUE DECKMYN

The past few weeks have seen a flurry of new products and services for wireless phones based on the Wireless Application Protocol (WAP). But analysts and users say enterprise adoption is still a while off.

Last week alone, TD Waterhouse Group Inc. in New York said it would offer stock trading from WAP-enabled phones; Harris Bankcorp Inc. in Chicago announced market trials of wireless banking, including access to account balances and fund transfers; Swissair AG in Zurich said it would let its passengers check in wirelessly; and Comtex News Network Inc. in Alexandria, Va., joined the ranks of vendors offering personalized news feeds.

In addition, the first enterprise services are appearing: InfoWave Software Inc. in Burnaby, British Columbia, said it would offer WAP access to Microsoft Exchange servers; Maconomy Corp. in Copenhagen announced a WAP front end to its time- and expense-report software; and middleware vendor Iona Technologies Inc. in Dublin said it would build WAP support into its iPortal Server so wireless users can access corporate portals.

WAP services on the Internet will grow from a few hundred today to thousands within the next six months, said David Hayden, an analyst at research firm Mobile Insights Inc. in Mountain View, Calif.

"Everybody's been waiting on the sidelines to see whether this would take off. But now we've seen Microsoft join the fray, and that has been a wake-up call," said Hayden. Earlier this month, Microsoft Corp. announced its Mobile Explorer software, which supports WAP.

Hayden predicted that the next three months will bring more enterprise-ready services such as e-mail, contact synchronization and scheduling. But enterprises may be slow on the uptake.

"I'm sure [WAP is] going to be hot, but not right now," said Alex Hu, a senior technology officer at The Chase Manhattan Corp. in New York. Hu said the company is trying to figure out how to leverage the Palm beyond its use as a personal information manager.

WAP phones aren't yet widely deployed in the U.S. "Right now, the enterprise is focusing on integrating the PalmPilot. Smart phones in the enterprise are years off," Hayden said.

Some analysts are even more skeptical about WAP. Using the protocol to access corporate networks "doesn't make any sense at all," said Elliott Hamilton, senior vice president at market research firm Strategis Group Inc. in Washington. Enterprises will wait until high-bandwidth wireless Internet access becomes available in about two years, Hamilton said. WAP owes its success to its ability to work well on low-bandwidth connections.
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- Peter Nikonowitsch, Engineering Manager, Hitachi Semiconductor

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Spun-off Sabre to Sell Software to AMR Rivals

Competitors will gain access to pricing software, outsourcing opportunities

BY STACY COLLETT

Airlines will soon be able to tap into Sabre Holdings Corp.'s management and pricing software, which was once under the tech control of American Airlines.

Fort Worth, Texas-based parent AMR Corp. said last week it will spin off its 83% ownership stake in the reservation services unit by the first quarter of next year.

When the deal is final, Sabre will become a fully independent company free to sell its reservation software and services to American's competitors without restrictions.

AMR Chairman Donald J. Carty said the time is right for Sabre to pursue new business without AMR's backing. Others said the spin-off frees Sabre from potential conflicts of interest.

"One of the problems we faced in the past [with other airlines and hotels] is they'd say, 'Because of your relationship with American Airlines, is our information secure? Can you really form some different kinds of relationships and do... technology transfers?' And although it is absolutely secure... you still have that perception," I believe [the spin-off] will help that," said James Peuga, senior vice president of worldwide marketing at Sabre.

"Sabre's technology has generally been cutting-edge, so the fact that the best is available from Sabre could be a big factor," said Michael Roach, president of Roberts, Roach & Associates Inc., an aviation consultancy in Hayward, Calif.

Sabre will also aggressively market its outsourcing services to airlines that were once concerned about conflicts of interests. More than 80% of the airline industry's information technology functions are handled in-house, said newly appointed Sabre President and CEO William J. Hannigan.

Sabre hasn't won a significant outsourcing contract since January 1998, when US Airways Group Inc. in Arlington, Va., signed a 25-year, $6 billion deal to outsource its entire IT infrastructure.

Last week, Sabre lost its bid to outsource Chicago-based United Airlines Inc.'s Internet, sales support and hosting and development services to United's longtime travel-distribution partner, Galileo International Inc. in Rosemont, Ill.

Hannigan said he plans to increase outsourcing revenue by at least 15% each quarter.

In addition, Sabre will handle IT operations for American through 2008 and help it establish a decision-support center, with American hiring up to 25 members of Sabre's IT staff.

No IT jobs will be lost in the spin-off, Carty said.

ADP Bulks Up to Handle Online Trading

Upgrade lets it process trades in real time

BY THOMAS HOFFMAN

While retail stock brokerages back in the online trading spotlight, back-office software vendors such as ADP Brokerage Services Group often do the behind-the-scenes work to process their trades fast and without a hitch.

But that requires a heavy investment in technology. So ADP this month completed the first phase of a multimillion-dollar upgrade to its order-processing system, Computerworld has learned.

According to analysts, it's a multimillion-dollar upgrade to an IBM Sysplex hardware architecture and a rules-based software engine, which is expected to help ADP handle a growing influx of online stock trades. Orders that originate over the Internet have grown more than 300% over the past 12 months.

Out of the nearly $2 billion Wall Street firms spent on global processing systems this year, roughly 70% went to external vendors such as ADP, which is the market leader with about 300 customers, according to TowerGroup, a financial services consultancy in Needham, Mass.

Competitors include the Pershing division of Donaldson, Lufkin & Jenrette, as well as other brokerages, analysts said.

ADP Brokerage Services, the technology upgrade is expected to help bring in new clients and more business from existing clients, said John Donkersloot, chief technology officer. The Jersey City, N.J., business is a division of the giant service bureau Automatic Data Processing Inc.

Under the project, launched 18 months ago, ADP replaced a mix of IBM OS/390 mainframes and Digital Equipment Corp. PDP-11 and Alpha NT servers with a more powerful and scalable IBM Sysplex clustered processing system.

The core components of the new order management system include a rules engine and a dynamic message formatter from New Era of Networks Inc. in Englewood, Colo., which combine with IBM DB2 database to keep both a transient and permanent record of each transaction.

Prior to the upgrade, it was difficult for ADP to handle its volumes of more than 2 billion transactions per day, Donkersloot said. In order to route all of those transactions efficiently, ADP would often have to create a second partition within a processor, which was a very "labor-intensive process," he said.

With the added software and hardware capacity, "we get immediate scalability and a much more reliable processing environment," ADP customers will continue to route their stock trades and orders to the company's internal systems and other private communications links, Donkersloot said.

IBM, Others Join E-Venture Fund Rush

HP, Sun, consultants offer cash, financing

BY JAIRKUMAR VIJAYAN

The rush by technology firms to finance e-commerce ventures is gaining momentum.

IBM last week announced an alliance with Ernst & Young LLP under which IBM's Global Financing group will provide financing for e-commerce projects by Ernst & Young clients.

Ernst & Young's customers are expected to use nearly $500 million in IBM funding during the next year, said Sam Khan, an IBM vice president.

In a similar move, Andersen Consulting said it's forming a venture capital firm, called Andersen Consulting Ventures, that will invest $1 billion over the next five years in e-commerce businesses. Andersen will spend $500 million of its own money; the rest will come from venture capital firms.

As part of its financing arrangements, Andersen's new unit will in some cases also get into equity arrangements with dot-com start-ups.

A close observer, Cambridge Technology Partners, announced plans to set up a fund to help dot-com start-ups. IBM, Ernst & Young, Andersen and Cambridge Technology join a growing list of companies trying to underwrite the demand for capital that is being created by dot-com start-ups and e-commerce projects, said Gopi Bala, an analyst at The Yankee Group in Boston.

Growth Trend

"Companies with ready financing are looking to invest in new fashion in the Internet economy regardless of their core businesses," Bala said. "Look for the trend to grow as corporations start getting into e-commerce projects that have been put on the back burner by Y2K work, Bala said.

Hewlett-Packard Co. has been one of the most aggressive technology vendors in funding and financing e-commerce ventures. It has set aside $1 billion for that purpose and has been busily signing up partners. HP, for instance, inked a five-year deal with Colorado Springs-based USA.Net. The agreement calls for HP to provide $5 million worth of hardware for an equity stake and a share of USA.Net's future revenue.

Rival Sun Microsystems Inc. has been busy, too. The company has a similar financing program for dot-com start-ups. But unlike HP, Sun doesn't plan to get into any equity partnerships with its customers.

"The largest system vendors are trying to give added value" by extending e-commerce-related financing options to customers, said Joyce Becknell, an analyst at Aberdeen Group in Rosemont, Ill.
It’s e-business
or out of business.

65 of the Fortune 100
run Oracle for e-business.
**BRIEFS**

**Fiber for BellSouth**

Marconi Communications has announced that BellSouth Corp. next year will install Marconi’s Asynchronous Transfer Mode-based DISC MX high-speed fiber-optic technology for voice, video and data. The installation will sever the parts of BellSouth’s network that aren’t served by the 280,000 fiber-optic lines BellSouth installed in the Atlanta and southern Florida regions earlier this year.

**Shiloh’s New Name**

Microsoft Corp. has christened the next release of its SQL database server, formerly code-named Shiloh, SQL Server 2000. For-
Confidence

Intermedia's Internet Backbone: Rated #1

www.intermedia.com

#1 Rated Internet Backbone - Boardwatch Magazine, 1999
#1 Rated Managed Security - Network Computing Magazine, 1998
#1 Rated Customer Service - InternetChoice, Inc. Survey 1998 and 1999

Now that's confidence.
Reorg Aims to Put SAP Closer to Users

Focus will be on more individual attention

BY CRAIG STEDMAN

SAP AG's U.S. subsidiary plans to kick off the new year with two big changes that will impact users: a sales force overhaul and the long-promised rollout of new software packaging and pricing. The two moves are key pieces of SAP's effort to extend its reach beyond the back-office stronghold of R/3 into newer applications such as sales and service — and closer to the customer relationship management.

For example, the sales reorganization is aimed at making sure SAP salespeople pay attention to users not only when they're getting ready to buy more software. Users and analysts said that's a change the German vendor has to make to stay in the good graces of R/3 customers who may eventually add more of its applications.

Until now, SAP's rush to sell R/3 to new users meant its salespeople had not had much time to spend with the customers that got them where they are, said Robert Rubin, CIO at Elf Atochem North America Inc., a chemicals maker in Philadelphia. The lack of attention was becoming a concern to Rubin because Elf Atochem may have at least $2.5 billion, Larsen said. Salespeople also will no longer be assigned to work with users in different parts of the U.S. and Canada.

Poor sales teams will be responsible for all users in specific industries and geographic areas, which should free them up to spend more time with individual users, Rubin said.

Developing tighter relationships with users also might help SAP head off the problem installations that have plagued companies such as Hershey Foods Corp. in recent months, said Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Berkeley, Calif.

New software packaging and pricing is also due to take effect next month after more than a year of development (News, July 26). Rubin said the new approach — which combines R/3 and SAP's other applications into bundles designed for different end users in a company — looks to be more flexible than SAP's current pricing scheme.  

Guidelines Update MIS Degree Curriculum

Standard adds business, project management

BY JULIEKHA DASH

A four-year effort to modernize the curriculum for getting a master's degree in information systems — and to make it more relevant to business needs — is almost finished.

The model curriculum is likely to gain final approval from the New York-based Association for Computing Machinery (ACM) this week, task force members said.

New requirements include courses in project management, technology and business, as well as general business skills.

The guidelines have already received endorsement from:

JUST THE FACTS

IT Manager's Curriculum

An example of a proposed MSIS 2000 course guideline:

Title: Managing projects

Description: Managing projects rated a top priority within an organization. Priorities would be assigned, and project deadlines set.

Objectives: Develop detailed project plans, develop project schedules, develop project budget, evaluate project resources, allocate and coordinate resources, and serve as liaison to management.

Netscape E-Mail Passwords Vulnerable

BY ANN HARRISON

A flaw discovered in the system used to encrypt passwords for Netscape's e-mail service could permit businesses that use older versions of the Netscape Navigator browser, which is vulnerable to password theft, the company that found the flaw said last week.

The version 4.7 of Navigator has plugged the security hole that permitted the theft, the company that found it said last week.

The flaw was discovered by an engineer at Reliable Software Technologies Inc. in Newtown Square, Pa. The reorganization will be possible after more than a year of development (News, July 26). Rubin said the new approach — which combines R/3 and SAP's other applications into bundles designed for different end users in a company — looks to be more flexible than SAP's current pricing scheme.
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Microsoft

Windows 2000

The internet is changing the way every business works, every day. Which is why we created Microsoft® Windows® 2000, a family of server and desktop operating systems built on NT technology. It's the operating system built for businesses of all sizes, with the most comprehensive set of web services, and the reliability that today's digital economy demands. Start evaluating Windows 2000 today. Go to www.microsoft.com/windows2000/

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- Supports the highest level of Windows scalability with up to 32-way SMP and up to 64 GB RAM.
Big Merger Year
Leaves IT Out

Driven by business goals, mergers often leave IT to pick up pieces, analysts say

BY JULIA KING

As the chart below shows, big companies in the telecommunications, utilities and oil industries got even bigger in 1999. Yet it's doubtful that any of the firms involved in the top dozen mergers will operate information technology any more efficiently or cost-effectively — at least not for a few years.

Even worse is that some of the new giants will likely fall behind in all-important electronic-business initiatives as they focus on melding disparate technology architectures and organizations.

On the IT front, analysts said, companies have learned few, if any, lessons from big companies that have merged before them. For example, they continue to issue multi-million-dollar savings projections based on scant pre-merger research and minimize the negative impact of cultural clashes on a combined company's bottom line.

A case in point is British oil giant BP Amoco PLC's $34 billion merger with Atlantic Richfield Co. (Arco). BP Amoco operates a largely outsourced SAP AG R/3 software environment. Los Angeles-based Arco, on the other hand, operates mostly proprietary mainframe-based systems.

BP Amoco is counting on saving $1 billion by eliminating overlapping operations and integrating systems at Arco and Amoco, which it acquired less than a year before the Arco merger announcement in April.

A High Price to Pay

But the cost of integrating three different systems into one could end up costing 10 times more than the annual savings it would yield, according to Syd Hutchinson, a senior consultant at Compass AmeriCa Inc., an IT performance consultancy in Boston, Va.

"What I've seen with big mergers is that IT doesn't seem to be considered as anything other than an opportunity to achieve economies of scale," even though that's a shortsighted view, said Bob Gold, another Compass analyst.

But that lesson never seems to take because "the people who arrange mergers are very often not the ones who manage the postmerger organizations," Gold said. "There's so much movement in IT that I don't see a learning process going on."

Instead, analysts agreed that what often happens is IT becomes more costly, at least in the years immediately following the merger.

"You've got incompatible ERP systems, incompatible technology architectures and a huge investment ahead in integrating them, which is going to dilute much of the value," that was assumed with these mergers," said Michael Keating, an analyst who specializes in electronic-business practices at Arthur D. Little Inc. in Cambridge, Mass.

Moreover, the time and expense of integrating existing systems "may, in fact, retard" some of the new giants' e-commerce efforts, Keating said.

Virtually all large companies continue "to do very little due diligence" on the IT front prior to a merger agreement, according to Fred Magee, an independent IT strategy and organizational consultant in Boston.

"A rush to find a competitive advantage — and make moves before rivals do — has driven mergers in the late 1990s," Magee said. "When you couple that with the fact that IT consistently has been ignored or pales in importance compared to marketing concerns or the financial impact, there's still just not a great deal of understanding on the part of business leaders about what the IT issues are in a merger."

1999's Biggest Mergers

<table>
<thead>
<tr>
<th>ACQUIRING COMPANY</th>
<th>ACQUIRING COMPANY</th>
<th>DATE MERGER ANNOUNCED</th>
<th>MERGER VALUE</th>
<th>IMPACT ON IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sprint Corp.</td>
<td>MCI WorldCom Inc.</td>
<td>Washington</td>
<td>Oct. 5</td>
<td>$17.3 billion</td>
</tr>
<tr>
<td>Warner-Lambert Co.</td>
<td>American Home Products Corp.</td>
<td>Madison, N.J.</td>
<td>Nov. 4</td>
<td>$76 billion</td>
</tr>
<tr>
<td>Air Touch Communications Inc.</td>
<td>Vodafone Group PLC</td>
<td>London</td>
<td>Jan. 18</td>
<td>$65.9 billion</td>
</tr>
<tr>
<td>Media One Group Inc.</td>
<td>AT&amp;T Corp.</td>
<td>April 22</td>
<td>$63.1 billion</td>
<td>Cable network upgrades needed to provide high-speed Internet services will cost billions of dollars and take several years, according to analysts.</td>
</tr>
<tr>
<td>US West Inc.</td>
<td>Qwest Communications International Inc.</td>
<td>Denver</td>
<td>June 14</td>
<td>$48.4 billion</td>
</tr>
<tr>
<td>CBS Corp.</td>
<td>Vacom Inc.</td>
<td>New York</td>
<td>Sept. 7</td>
<td>$40.8 billion</td>
</tr>
<tr>
<td>AT&amp;T Corp.</td>
<td>Cable Network Partners Inc.</td>
<td>Atlanta</td>
<td>June 29</td>
<td>$38.5 billion</td>
</tr>
<tr>
<td>Clear Channel Communications San Antonio</td>
<td>Clear Channel Communications San Antonio</td>
<td>Oct. 4</td>
<td>$21.8 billion</td>
<td>Faces a huge challenge in developing and implementing an Internet strategy for the combined company's more than 800 radio stations.</td>
</tr>
<tr>
<td>Lucent Technologies Inc.</td>
<td>Lucent Technologies Inc.</td>
<td>Murray Hill, N.J.</td>
<td>Jan. 13</td>
<td>$21 billion</td>
</tr>
</tbody>
</table>

SOURCE: THOMSON REUTERS, Accenture, Securities Data, MergersDirect, Computerworld Online and First Report, Company Web sites, Annual Reports and Company Spokesmen
Report: Global Y2K Problems Will Have Limited Impact

Some see UN-sponsored study as overly optimistic

BY THOMAS HOFFMAN

A new report is cautiously optimistic about how the world will handle the year 2000 date change, predicting that many errors will occur but will have only a limited impact on national infrastructure services such as energy, telecommunications and transportation.

But considering how many nations were lagging with their Y2K projects just a few months ago, skeptics called the new report by the United Nations-sponsored International Y2K Cooperation Center (IY2KCC) a leap of faith.

“It has taken five to six years for the U.S. to get ready,” said Kazim Isfahani, a year 2000 analyst at Cambridge, Mass.-based Giga Information Group Inc. Now countries such as Italy and Spain—which experts characterized as seriously behind in their work just six months ago—“are suddenly ready? That’s ridiculous,” he said.

The report, released last week, said governments and businesses around the world will suffer only limited damages resulting from Y2K-related snafus. The report cites factors such as a generally accelerated international response to Y2K over the past several months and the fact that the infrastructures for most developing countries don’t rely on computer automation.

The report drew some conclusions that are similar to those in other global Y2K-readiness reports, including an August study issued by Gartner Inc. in Stamford, Conn. For instance, like Gartner Group, the IY2KCC report labeled health care as a high-risk area, in part because medical facilities in the U.S. and abroad have been late in responding to the year 2000 problem.

Gartner ranked Russia as the country facing the highest Y2K-related risks, but the IY2KCC report didn’t rank Russia at all because that country didn’t provide any public information about its status.

Gartner used additional methods of assessing Y2K-related risks on a country-by-country level, including each nation’s reliance upon information technology and communications, as well as trade dependencies as a percentage of gross domestic product.

New Viruses Act Like Y2K Glitches

BY ANN HARRISON

A growing collection of viruses, worms and Trojan horse programs are exploiting the year 2000 date change, further bedeviling information technology managers who already are on alert for Y2K software glitches.

Some threats, such as the recent Balakonia virus, attempt to present themselves as Y2K fixes. Others, including the recently discovered W32/Mypics computer worm, are set to activate Jan. 1 and are disguised as Y2K glitches.

The worm overwrites checksum data in the host computer’s CMOS memory, which will seem like a Y2K error in the computer’s BIOS.

Other Y2K-related viruses, worms and Trojan horses include Troj.Polyglot (also known as Y2K Count), Worm.FiX2001, W97M.Chantal.A and W97M.MMKV.

Proper Precautions

Antivirus software vendors recommend that companies deploy the latest virus definitions and engines on gateways, file servers and desktop systems. They suggest using Y2K auditing sessions to make sure definitions are up-to-date and advise e-mailing alerts to employees about Y2K hoaxes and safe software practices.

One IT manager at an electronics firm, who asked not to be identified, said his company detected a W32/Mypics infection in a remote office and discovered four servers that weren’t cleaning the virus from the network with antivirus software.

The firm’s engineers wanted to try to fix the server problem, but the manager said it was more important to download another antivirus update and quickly block the malicious code than to figure out why the servers were malfunctioning.

“The key to fighting viruses is doing it quickly. If it takes two days, it’s too late,” he said.

Because jittery users are likely to assume that every system crash around the new year is caused by the year 2000 bug, Symantec Corp., in Cupertino, Calif., advises companies to set up Y2K phone or e-mail hot lines to streamline the submission of suspect files and reports.

VIRUS NAME

W32/Mypics

Payload: Changes user’s home page on Internet Explorer to site containing adult content. Attempts to reformat local hard drives and erase all data.

Method of propagation: Received as an e-mail attachment disguised as a picture. Sends itself to up to 50 people in the infected user’s Microsoft Outlook address book.

Characteristics: Arrives in an e-mail with no subject line. The body of the message reads, “Here’s some pictures for you!” The message contains a “PicOfYou.exe” attachment.
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Handheld Software Cheered

Joint product will help firms manage devices

BY DOMINIQUE DECKMYN

ANALYSTS AND USERS welcome the plans of Puma Technology Inc. in San Jose and Sterling Commerce Inc. in Dublin, Ohio, to provide software that will help companies manage handheld devices.

Puma provides synchronization tools for Palm Computing Inc.'s Palm and handhelds based on Microsoft Corp.'s Windows CE. The firm's Intellisync Anywhere software will be combined with Sterling's Connect:Manage, which manages mobile PCs and handhelds.

The combined product, Enterprise Intellisync, will ship in the first quarter of 2000 and is priced at about $50 per seat. It will include centrally configured synchronization of handheld devices, software deployment and diagnostics. "One of our big concerns is the cost of managing these devices," said David Gruver, a technical director at SBC Communications Inc. in San Ramon, Calif., who is faced with a rapidly growing base of about 2,000 handhelds.

Centralized management of handheld devices isn't such a priority when they're being used mainly as personal information managers, said Gruver. "But if we start to deliver more content to these devices, then [management] becomes more critical." The company now requires personnel to use Palm devices with personal, desktop-based synchronization software from Puma.

"It's a good statement of direction," said Ken Dulaney, an analyst at Gartner Group Inc. in San Jose. Dulaney said it is unclear whether Puma and Sterling can merge their respective platforms.

Hidden Costs

The handheld devices that have crept into corporate America pose a management problem, according to a recent study:

- The total annual cost of owning and supporting a handheld computer is about $2,700.
- 40% of that cost is for time spent synchronizing the device.

Windows Devices Get Full-Size Apps

BY DOMINIQUE DECKMYN

Citrix Systems Inc. is squeezing full-size Windows applications onto palm-size PCs running Windows CE.

Wireless Portal

Zap Business Communication Systems Inc. in San Jose says it's the first firm to open its platform to wireless phones. Zap released an update of its uCOne corporate portal, which adds support for the Wireless Application Protocol and for Palm Computing's Palm VII. uCOne includes custom news feeds and discussion groups. Pricing starts at $5,000 for a 50-user license.

Joshua Walker, an analyst at Forrester Research Inc. in Cambridge, Mass., called the idea of a wireless portal premature, because few firms are far enough along in their portal plans to extend them to wireless devices. "It's still more practical to take [individual] applications wireless," Walker said.

Vendors extending internet applications to wireless devices include AvantGo Inc. in San Mateo, Calif., which launched a small-business version of its AvantGo Enterprise Publisher, and Microsoft Corp.'s Small Business Server. The new AvantGo Enterprise Publisher is priced at $75 per user. - Dominique Deckmyn

The Fort Lauderdale, Fla., company has released new client software based on its Independent Computing Architecture (ICA). It will allow palm-size Windows applications onto palm-size PCs running Windows CE. The firm's Intellisync Anywhere software will be combined with Citrix's MetaFrame full-screen Windows software. Citrix said the software will run on any Windows CE palm-size PC or handheld PC, regardless of processor.

Restricted View

The ICA client will display only part of a full-screen Windows application at any time, so users will have to scroll through the screen to see the rest. "It's like looking through a keyhole," said Greg Blatnik, managing director at Zona Research Inc. in Cambridge, Mass., called the idea of a wireless portal premature, because few firms are far enough along in their portal plans to extend them to wireless devices. "It's still more practical to take [individual] applications wireless," Walker said.

Vendors extending internet applications to wireless devices include AvantGo Inc. in San Mateo, Calif., which launched a small-business version of its AvantGo Enterprise Publisher, and Microsoft Corp.'s Small Business Server. The new AvantGo Enterprise Publisher is priced at $75 per user. - Dominique Deckmyn

Microsoft SQL Server 7.0 now holds the SAP retail benchmark world record with 3,165,000 sales line items per hour.

Just a reminder

the next time you're thinking of a new line-of-business solution.

Microsoft SQL Server 7.0 now holds the SAP retail benchmark world record with 3,165,000 sales line items per hour.
SAN Data Sharing Closer for Tivoli Users

Tivoli parent IBM buys storage unit of Mercury Computer Systems for $23.5M

BY SAMI LAIS

Tivoli Systems Inc.'s storage software who were promised more extensive data sharing capabilities by 2001 will get an early delivery on that promise. Tivoli parent IBM announced last week that it's buying Mercury Computer Systems Inc.'s Shared Storage Business Unit for $23.5 million. This same unit's SANergy software, which allows data sharing across multiple platforms within a storage area network (SAN). SANergy was pretty much the last SAN file-system product to market on the Web, said Robert Gray, a SAN analyst at International Data Corp. in Framingham, Mass. In May, Hewlett-Packard Co. bought Transoft Networks Inc. in Santa Barbara, Calif., and Advanced Digital Information Corp. in Redmond, Wash., bought MountainGate Imaging Systems Inc. in Reno, Nev., in September.

A Base to Build On

IBM's purchase makes it more competitive in the SAN market and provides "a base on which IBM can continue development," Gray said. Austin, Texas-based Tivoli is touting the capability it will gain in the deal for use in data-intensive electronic business applications. Chelmsford, Mass.-based Mercury had been on the verge of releasing disk-sharing features for SANergy, said Tivoli storage strategist Troy Pladson. Those features will be released next year under the Tivoli brand, he said.

Candle Sets Sights on Web

BY SAMI LAIS

Candle Corp.'s announcements this month of new divisions are part of a reorganization and sharpening of focus on managing the enterprise for the Web. The surprise might be that it took Santa Monica, Calif.-based Candle so long. Since he founded Candle in 1976, Chairman and CEO Aubrey Chernick has moved the company along a narrow and measured path. "Before [Chernick] makes a move, he thinks it through to make sure his technology can support what the business wants to do," said Richard Ptak, an analyst at Hurwitz Group Inc. in Framingham, Mass. A middleware maker, Candle has software tools for performance measurement, network and systems administration and, most recently, Web site management and performance monitoring.

The company competes with niche vendors and, for some products, with software giants Computer Associates International Inc. in Islandia, N.Y., BMC Software Inc. in Houston and IBM. For the past 18 to 24 months, Candle has been its own guinea pig for its "more holistic view" of Web and system management, said a Candle spokesman. As part of the reorganization, the company created an E-Business Computing Group that will devote itself to business-to-business e-commerce. The newly realigned Enterprise Computing Group will continue development. Disk-sharing features for SANergy, said Tivoli storage strategist Troy Pladson. Those features will be released next year under the Tivoli brand, he said.

Portal’s Next For Sybase

BY ROBIN ROBINSON

Reorganizing database vendor Sybase Inc. continues its focus on the Web with its upcoming enterprise portal architecture, OpenDoor. Enterprise portals — this year's buzzword — are personalized views into multiple, back-end data sources. "It's an intelligent direction for Sybase to go in, given they've run into rough waters in their database sector," said Dwight Davis, an analyst at Summit Strategies Inc., which is based in Kirkland, Wash. "Sybase has always had good technology, but competitors — Oracle, IBM and Microsoft — have marginalized them as a vendor on the ropes in the enterprise database sector," Davis said. For the most recent quarter, Sybase posted income of $16 million, up from $2.2 million a year ago. Its revenue has hovered on the upside of $200 million each quarter for the past two years while it focused on recovering its profits. The company posted losses and laid people off in 1997 and 1998. The goal of OpenDoor is to unify the mix of disparate databases that companies tend to collect, either by design or through business acquisitions, said Bob Breton, senior director of product management in Sybase's enterprise division. "We're trying to create a very open platform, connecting to IBM or Oracle, and from the Web," he said. Davis said Sybase is jumping into a crowded portal market, but it has experience with corporate users and their need for around-the-clock uptime. Another analyst sees Sybase as the only database vendor offering a portal able to run on any of the major databases. "Sybase is approaching from more of a database-agnostic perspective," said Phil Costa, an analyst at Giga Information Group Inc. in Cambridge, Mass.
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End of (Y2K) days

So here it comes: the final countdown. The last 12 days till Y2K. Never in the history of information technology has one programming misstep cost so much and involved so many — or generated so much ink and attention.

Estimates of the worldwide cost to fix the Y2K bug range from a relatively modest $300 billion to more than $1 trillion. The U.S. Department of Commerce says America alone spent at least $100 billion on Y2K projects during the past few years, or roughly $365 per man, woman and child.

In one survey, Gartner Group found that larger companies earmarked at least 44% of their IT budgets for Y2K this year, with the average corporate bill running around $6.6 million for date-conversion efforts.

Oddly enough, this turned out to be a blessing disguised as a curse. In the roiling wake of the Y2K crisis, the high-tech staffing shortage and the rapid rise of e-commerce, the connections forged between IT and the business side have never been stronger. Dealing with Y2K has forever changed the way senior management views the strategic role of technology.

So here it comes, the long-awaited alignment of business and IT.

We've always felt a strong kinship with the IT folks working on Y2K projects. In 1984, Computerworld published the first story ever about it, and nine years later in these pages, consultant Peter de Jager's "Doomsday 2000" article (Sept. 6, 1993) issued the first call to arms for the IT community.

Then, in early 1998, we began an in-depth series called the Y2K Chronicles, which tracked six user companies through every phase of their Y2K projects. The penultimate chapter of that series is on this week's front page, with a postscript to follow in early January.

And for the tens of thousands of IT professionals on duty New Year's Eve, Computerworld will be there with you, once again. Starting Dec. 27, our Web site (www.computerworld.com) will feature a special "Y2K Watch." We'll supply everything from breaking news and international reports from many of the 55 Computerworlds around the world, to user forums, resource links, Y2K stats and tidbits — even a lighthearted take on it all from cartoonist John Klossner.

So here it comes, the end of Y2K days. We'll see you on the other side.

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WAP is the wave of the Web's future

Sure, your company is on the Web, but is it WAPed? ABC News is. So are Yahoo and Bloomberg.

These companies are early movers in what will soon be a stampede of Web content providers wanting to make sure their information remains intelligible when squeezed onto the small screens of mobile phones, personal digital assistants and other wireless devices.

The great news for digital economy strategists is that almost all of the world's major players in the wireless market have agreed on an open standard for configuring and transmitting information. The set of technical specifications, known as the Wireless Application Protocol, or WAP, guides the wireless-phone manufacturers, network operators, content creators and application developers.

The result is that the Internet's interoperability standards we expect on our desktop computers are available on our wireless devices. A mini-Web page looks the same on a phone in Paris or Melbourne as it does in New York.

Surely companies may use this alleged uncertainty as a reason to delay generating WAP content. That's not the right decision. WAP will prevail. The Internet has shown that vendor-neutral standards for communication protocols are the future.

If your Web site continues to presume the consumer is sitting at a desktop PC, with a quick connection and large screen, you're missing out on what will soon be the fastest-growing segment of the market.

Handheld devices will eclipse PCs as the dominant Internet access devices. The world's largest mobile phone maker, Finland's Nokia, expects more than 1 billion mobile phones to be in use by the end of 2002. By 2003, more than 600 million phones will access the Internet, compared with only 50 million PCs.

Which is why Amazon.com just announced a partnership with Sprint to make a mini-Amazon Web site available on Sprint PCS phones. "We want shopping to be the easiest thing our customers do this holiday season," says Jeff Bezos, Amazon.com's founder and CEO. Making books,
Ten key IT challenges for the next 20 years

As has often been noted, one of the stranger things about the fast-approaching millennium is our almost total inability to see or talk past it. Way back in the 1960s, people were wondering what life in the year 2000 would be like. Yet, as the decades rolled by, our societal horizon somehow hardly budged, and now the whole Y2K issue seems to have shrunk much of our vision down to just a few short weeks. Amazingly, we still don't have a way to even pronounce the coming decade of the '00s.

That's at least one reason to look forward to 1/1/00. It will finally force us to face the future that's rapidly racing toward us. Toward that end, here's my list of what I think will be 10 of the most decisive IT industry challenges of the next 10 to 20 years. Consider them long-term issues worth monitoring.

Putting the physical world online. The early years of the Web have been dominated by people, screens and keyboards, but the next great wave will involve cars, appliances, houses, cameras, sensors, plants, genes, the human body and most of the rest of the nondigital world. Indeed, the integration of the physical world with our increasingly ubiquitous network infrastructures could easily lead to even greater societal changes than those we are experiencing today.

National infrastructures. Developed and developing countries all around the world are now essentially in a race to build advanced, high-bandwidth telecommunications infrastructures. Which nation will get there first? How much will it matter? What would happen if the U.S. wound up trailing badly? One thing is for sure: Some countries are moving much faster than others.

Globalization. Since the end of the Cold War, the world has been rushing toward ever-higher levels of national convergence, with capital markets, business regulation, trade policies and the like becoming increasingly similar. This homogenization is particularly important to the expansion of the Internet. Despite the recent anti-World Trade Organization protests in Seattle, the current faith in global markets is unlikely to unravel unless the world suffers a prolonged economic downturn.

Societal equity. Although the Internet has clearly helped accelerate the growth of the U.S. economy, there is little doubt that it has also widened America's already world-leading income disparities. If this trend isn't reversed, or at least stemmed, some sort of backlash is all but inevitable. Unfortunately, given the winner-take-all nature of many technology businesses, further widening seems almost certain.

Unemployment. As the U.S. economy becomes increasingly dependent on electronic commerce, the number of people in the U.S. who are not engaged in such work will increase. In fact, the total number of people not employed may well double by the end of the decade.

Telecommunications. The rapid growth of the telecommunications industry has led to a reduction in the number of telephone lines. Yet, despite this reduction, the number of telephone calls continues to increase.

Globalization. Since the end of the Cold War, the world has been rushing toward ever-higher levels of national convergence, with capital markets, business regulation, trade policies and the like becoming increasingly similar. This homogenization is particularly important to the expansion of the Internet. Despite the recent anti-World Trade Organization protests in Seattle, the current faith in global markets is unlikely to unravel unless the world suffers a prolonged economic downturn.

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Everybody doing business directly—To me that's the power of the Internet.

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The more things change in IT...

OW, MY LAST COLUMN of the millennium! Believe it or not, I have been an analyst for 2.5% of that 1,000-year span.

During my little wedge of the millennium, I have discovered that there are some time-honored constants about the information technology profession — old chestnuts that I wrote about 25 years ago that I’m still writing about today. I suspect they’ll still be true in Y3K. Here’s a sample:

IT professionals can never have enough presentation skills or powers of persuasion. Selling and internal public relations don’t seem to come easily to most IT professionals, yet they’re the top success factors for career advancement.

They were the most important skills 25 years ago when I surveyed MIS managers about successful distributed-processing rollouts, and they were still on top last year in an informal poll of CIOs at a conference.

In the electronic-business millennium, those skills will be as important as ever. There will be room in the industry for the programmer-recluse, but in some technical specialty or off in a corner debugging Java scripts, not on the corporate ladder.

Making an IT organization “service-oriented” will always be a struggle. Most IT professionals seem to like the work itself — the puzzle-solving aspect of working with complex software systems — but not necessarily the customers.

Those who like constant interpersonal interactions — such as salespeople, account reps and marketing types — would probably consider life as a programmer akin to solitary confinement.

Building an outward-facing organization from a collection of inward-facing individuals is no easy task. Companies need to understand this and give their CIOs the tools that can help.

The IT shop will always be somewhat of a black hole. Work will go into queues and never come out, deadlines will slip, and the work of an IT professional will be mysterious to outsiders.

Some of the reason for this relates to the point that programmers aren’t born communicators, but more so to the fact that non-IT professionals never seem to understand the complexity of the systems that are now so “easy to use.” That lack of understanding leads to unrealistic expectations and overloaded IT departments.

Systems designers and end users will always live on different planets. This is one of those immutable laws of nature.

By the time any one individual has the knowledge and skills to write a complex software system, he — or the organization — will no longer be capable of understanding how little end users really know, or want to know, about the underlying technology.

This phenomenon affects other engineering disciplines as well, as witnessed by the number of features you don’t use on your VCR and your cell phone.

We will never have enough memory or processing power. From back when a megabyte of IBM mainframe memory cost hundreds of thousands of dollars, IT managers and those funding them have always underestimated the speed with which memory and processing power get used up.

In fact, I have never met an IT professional who admitted to overbuying memory, storage or processing power. “Capacity planning” should be renamed “shortage management.”

But one thing has changed, and that is the regard in which the profession is held. Businesses and society see the fruits of IT professionals’ labor every day now. Words like technocrat are out; professional is in. So we’ve made progress since my first column. I expect even more in the next 25 years or, for that matter, the next 1,000.

STEFEN COBB

Don’t fall victim to year 2000 false alarms

FORTUNATELY, there’s still time to protect against a major problem that IT managers will face on Jan. 1: false alarms. The following scenario isn’t hard to imagine, particularly if you’ve been involved in system security, where distinguishing false alarms from genuine security breaches is a big part of the job:

One of your night-shift operators is waiting for a backup to complete, so he starts browsing through the server farm. Some unusual files on an e-commerce Web server catch his eye. He alerts a colleague, but she can’t explain the files either. She starts checking the logs and sees traffic that she’s never seen before on the network.

They decide to page the system manager. He rushes in, by which time the night shift has found several more anomalies that can’t be accounted for, although it immediately occurs to the system manager that this could explain some mysterious recent server crashes. It’s clearly time to act. A general alert is sounded: There may be hackers in the system.

Fast-forward five days to the final diagnosis: There were no hackers in the system. The strange files were left over from testing. Nobody had noticed the files until they were questioned by a bored operator with time on his hands. The unusual traffic was legitimate, but not observed before because the current configuration was only a few weeks old and still somewhat unstable.

No big deal? Perhaps, except for $100,000 in consultants’ fees and unbudgeted overtime, plus the painful meeting with the CEO to explain how taking the servers down for a six-hour emergency rebuild, during which an estimated $200,000 in electronic business was lost to the competition, wasn’t really necessary.

Clearly, a false alarm like this, which is based on an actual incident witnessed earlier this year, has the potential to cost your organization a lot of money. What you need to think about right now is the potential for people who are scrutinizing your systems to generate false alarms. If you’re responsible for Y2K readiness, a panic attack could damage your credibility much more than a genuine problem, where there might be a chance to gain kudos for your handling of the crisis.

Fortunately, you still have some time to institute the single most important Y2K-crisis prevention strategy: Know your systems! Unless you and your staff know what the system looks like on a good day (or night), you will have a hard time telling “strange” from normal. Now is the time to make sure your network diagrams are accurate, your log analysis is up-to-date and your people know what legitimate traffic looks like — not just on an average weekday, but also on weekends, month-ends, quarter- and year-ends and any other periodic cycle.

Several other factors may be on your side. You may have frozen systems, which will make it easier to learn and keep track of what “normal” looks like. You may have booked extra staff to watch over systems during late December and early January. That’s wise, but it’s a potential problem if these people aren’t intimately familiar with the systems they’re watching.

In the incident alluded to earlier, having a whole gaggle of people speculate about a system was found to be an expensive impediment to a speedy, accurate diagnosis.

It’s better to go for quality of coverage, not quantity. Make sure that the people who put the system together are either there, within easy reach or at least identified and documented. New Year’s Day 2000 isn’t going to be a good time to ask “Who was that guy who patched this server?” Remember, the goal is to be able to rely on the answer you get when you or someone on your staff asks: “Does this look right to you?”

The More Things Change in IT...
Y2K CONFIDENCE
Nearly all of the IT managers contacted for Computerworld's quarterly Y2K confidence survey said their systems will be ready to handle the date change. And there was a big increase in confidence that their customers and suppliers will also be ready. Many are predicting that any problems that arise will be minor ones. »36

SERVICE FOCUS
Lands' End sells more apparel online than any other online retailer. How? Good customer service. By leveraging its existing top-notch customer service and using new online services, Lands' End is moving customers to the Web. It's a move that could eventually cut out its heftiest expense: the $201 million spent annually in catalog production and mailing costs. »38

TESTING INTO JANUARY
Not all Y2K problems will surface on Jan. 1. It may take a few weeks for some of them to crop up, says Ed Yourdon. He advises avoiding trouble by keeping in touch with suppliers, customers and business partners to see if they're having problems. And, continue testing after Jan. 1. »39

Y2K CHRONICLES
The six companies Computerworld has followed through two years of Y2K remediation say their systems are ready. But that hasn't stopped them from coming up with and putting into place contingency plans to handle everything from a bank run to a riot. »42

Y2K CHECKLIST
Rather than sweating the details when it comes to the final hour before Y2K, make a checklist to keep things on track. Backup communication plans, an up-to-date phone list, a last-minute check of call-in capabilities and a plan for implementing manual processes can help ward off disaster. »46

TCO OPTIONS
Though using a total cost of ownership (TCO) analysis model promises to lower costs and increase the benefits of IT, 78% of all IT administrators say they don't track TCO, according to a study by Forrester Research. To gain companywide acceptance and compliance, buy-in from a top-level executive is vital. See QuickStudy. »52

MATCHING WORDS
Joe Auer says he's seen companies spend thousands of dollars in court arguing over the meaning of individual words in a contract. In his opinion, a good contract for both parties is a document that's so clear, a disinterested third party of average intelligence could read it and, without coaching, completely understand it. »53

THE NEGLECTED WORKFORCE
DARRELL BEGAY (pictured above) is part of a movement to bring technology to American Indians. Despite a 4% U.S. unemployment rate, many of the estimated 2.4 million American Indians have no work at all. Meanwhile, IT managers are hiring increasing numbers of foreign workers under H-1B visas. New educational initiatives hope to bring technology and training to reservations.
What is Windows 2000 Advantage?
Windows 2000 Advantage is the partnership among Microsoft, Compaq and Computerworld Enterprise Business Solutions to inform IT leaders about Windows NT and Windows 2000 technology by providing timely, useful information — in print and online — for planning and deploying Windows NT and Windows 2000 with Compaq services and solutions.

Online This Week
Microsoft ratchets up security features with Windows 2000

Closer Look: In the increasingly important area of computer security, Windows 2000 offers something to just about everyone in the enterprise. Hard disk encryption — a big boon for laptop users — and smart-card support are just two of the reasons Windows 2000 is more secure than Windows NT.

Industry Insights: Making Unix and NT work together

It's been said repeatedly that making Unix and Windows NT work together is nearly impossible, that these two server operating environments just can't interoperate harmoniously. "Hogwash," says our columnist Dan Kusnetzky. These two seemingly disparate software environments can be exploited simultaneously in many ways.

Microsoft consultant stresses Windows 2000 lab work

Take it from a consultant who has been working on enterprise Windows 2000 implementations for the better part of two years: The benefits are bountiful, but prior to implementing it in a production environment, it is necessary to test the system thoroughly in a lab environment, followed by a pilot project.

QuickPoll
Will the new remote monitoring and access features of Windows 2000 be valuable to your company?


Windows 2000 IT training: No pain, no gain

By Steve Alexander
Training Windows 2000 users is a daunting task. Active Directory is a powerful, but unfamiliar technology. There are new and improved security features. And deploying applications using Windows 2000 Server requires new skills. In essence, IT trainers have to teach an entirely new way of looking at networks.

Active Directory is probably the biggest challenge because it requires network administrators — many of whom aren't used to working with directories — to make the biggest changes in their workstyles. This key piece of Windows 2000 comprises a directory service that enables distributed security and administration.

"Active Directory is the central piece in Windows 2000," says Dawn Smith, practice manager in charge of Windows 2000 training at Information Management Group Inc., a third-party training firm based in Chicago. "While there is a security accounts manager in Windows NT 4.0, Active Directory is 1,000 times more powerful."

Kevin Murray agrees. According to him Windows 2000 is 80% to 90% different from Windows NT 4.0, and a large part of that difference is in Active Directory. Murray is a North Carolina-based product manager for Microsoft training at Global Knowledge Network Inc., a third-party training firm based in Burlington, Mass.

Sergio Pineda, Microsoft's lead product manager for the company's business and enterprise division training group, sees two key audiences for training. There are those who don't know the details of Windows NT and those who are experienced in Windows NT but need to learn how Windows 2000 affects network planning issues. For the latter, key teaching issues include Active Directory, security, deploying applications on the desktop, managing users and setting up Web services, he says.

Who will need to learn about Active Directory? It depends on the networking decisions a company makes.

"Active Directory is a great way for IT administrators to manage users, resources and data, improve security and extend interoperability across the entire network," Pineda says. "In some cases Active Directory will get deployed right away, and in other instances it won't get deployed immediately. For example, a customer may integrate Windows 2000 Server into an existing network to set up Web services or file and print services. But to reap the full benefits of Windows 2000 customers will need to get educated on how to deploy Active Directory."

To read the full text of this story, visit www.Windows2000Advantage.com.
Q&A

Compaq exec talks about Win 2000 — from a user perspective

Tony Redmond, Compaq’s director of applied Microsoft technology group, has been deeply involved with Windows 2000 training for internal Compaq consultants. His “Dream Team” of consultants recently presided over the Windows 2000 Academy in San Diego, where technical representatives from 100 of Compaq’s largest customers gathered for an intensive, week-long Windows 2000 training course. Windows 2000 Advantage’s Stefanie McCann talked with Redmond about the challenges faced by companies implementing Windows 2000.

Q: How much Windows 2000 knowledge do customers have right now?

Redmond: When customers start their deployment they’re going to start off at base zero in terms of knowledge. If you were going to go find knowledge, where would you go? You would go to the people who have the knowledge. We have the knowledge because of Compaq’s own implementation process and because of the relationship we have with Microsoft.

Q: How long do you think it will take users to deploy Windows 2000?

Redmond: It depends on their knowledge. Compaq could deploy today, but does everyone have the knowledge that Compaq has? No, they don’t. So they have to go through knowledge acquisition. We have a lot of sources. So that’s what has helped us to move much further along the line.

Q: How long do you think customers are going to wait before deploying Windows 2000?

Redmond: We’re running it — it works, but knowledge is the key. Clearly, if you don’t have any knowledge about it and you look at Windows 2000, you’re going to say, “Wow! There’s so much technology shift here, I can’t deal with it. I’d better wait.” From that perspective, it’s good advice. From our perspective, because we have the knowledge, we’d do it tomorrow. I think that about 20% of our customers here at the Windows 2000 Academy are going to be ready to rock and roll very early in 2000. There are probably another 40% who are going to wait until the end of 2000. And there are others who are going to wait even longer because they don’t have the knowledge or they have other pressing application needs.

To read the full text of this interview, visit www.Windows2000Advantage.com.

“I think that about 20% of our customers here at the Windows 2000 Academy are going to be ready to rock and roll very early in 2000.”

— Tony Redmond, Compaq’s director of applied Microsoft technology group

www.Windows2000Advantage.com
Y2K Survey Reveals Growing Confidence in IT Readiness

IT managers highly confident of success, especially among suppliers and customers

BY RICK SAIA

After several years of alarms, warnings, prophecies and urg­ings, information technology managers appear to have one final message in the remaining days before 2000: Bring on Y2K.

Nearly all IT managers contacted this month for Comput­erworld's quarterly Y2K confidence survey said their firms' information systems will be ready to handle the date change come Jan. 1. Estima­tions of their own readiness hit an all-time high of 4.8 out of a possible 5. But more significant was a huge rise in confidence among these IT managers that their customers and suppliers will make it also.

Asked to rate their confidence in their business partners' compliance on a scale of 1 (not at all confident) to 5 (extremely confident), the mean answer moved up from about 3.95 in a September survey to about 4.06 this month.

Supply-chain confidence has increased steadily since Com­puterworld conducted its first Y2K confidence survey in Sep­tember 1998. "My people here aren't worried," said Steven Greenwood, MIS director at Newpro Inc., a Woburn, Mass.-based seller of home windows. Greenwood said he has been assured that his company's supplier of raw materials — a foreign firm — will be year 2000 compliant.

Such news is music to the ears of Peter de Jager, the Y2K expert credited with having sounded the call on the Y2K problem with his 1991 Comput­erworld column "Doomsdag." "I honestly believe there is reason to be more confident than we were before," de Jager said. "A lot of the ranting and raving by myself and many others [was] because we weren't doing anything."

But apparently, a lot of work has been taking place since the first confidence survey in 1998.

- In October 1998, less than 8% of firms surveyed said their sys­tems were fully compliant.
- Today, that number is around 60%.
- Another 37% said 90% to 99% of their systems are ready.

The trend isn't driven just by the need to deliver prod­uct. Garden.com, which hired staff to write how-to garden­ing stories for its site, is now publishing a magazine. On paper. Delivered by the U.S. Postal Service. Talk about a legacy medium.

And Charles Schwab, whose online customers account for 60% of its trades, has doubled the number of its brick-and-mortar locations to make it easier to get advice in person.

The dot-coms are going off-line because that's where the money is, and they're going to compete even more directly with the brick-and­-mortar market.

"The rosiest pro­jections are that only 10% of the toy market will be on­line in seven years," said Toysmart.com CEO David Lord. "It seems difficult to imagine that you can give up 90% of that market if you're in for the long term."

Eventually, brick-and-click companies will have to meet in the middle, using business models that leverage the in­frast­ructure of the real world with the convenience of the Web. Some, like Garden.com, may focus on catalogs and online sales. Others, like Amazon, will build up substantial brick-and-mortar infrastructures.

But the really interesting stories will be the ones written by tradi­tional players who may not have weighed in yet. Look at the Borders online bookstore, which fell so far behind Amazon.com and Barnesandnoble.com that it could barely keep them in sight. Now it's tape signing books by authors like J.K. Rowling to run online for readers who couldn't get to the store. That pulls in the masses of her hect­ing fans and lets their parents check out the author and her books at the same time.

Another prediction: The brick-and-mortars will get their online acts together this year and push back all the leaders among the dot-coms.

"The companies that will be successful are the ones that can effectively mix multiple media — stores, cata­logs and the Web," predicts Cathleen Benko at Deloit­te Consulting, the e-commerce arm of Deloit­te & Touche. She calls the e-commerce competition a game of chess in which only the first few moves have been made.

But later in the game, it will be much harder to tell if the winners were born of bricks or clicks.

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<th>Year</th>
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Keeping Reps Happy, Helpful

Customer service workers who support Lands' End's online shoppers typically respond to customer e-mails within three hours. Not that anyone's counting. Unlike customer service reps at other electronics retailers, employees at Lands' End aren't evaluated on how many calls or chat messages they can handle in an hour or how quickly they complete calls.

Also unique is the company's strict policy forbidding its service reps from trying to upsell customers. Retailers typically try to pitch a customer a shirt to go with the tie he just ordered.

Lands' End's customer service employees also receive two to three hours of training on all new products and computer system changes each month. Online representatives can enroll in grammar and spelling workshops to brush up on basic skills for text-based chat sessions.

All of these policies are unusual from a customer service standpoint, said Pete McFarlan, a customer support expert and chairman of Help Desk International, an Atlanta-based support organization. What's far more typical is for customer service agents' performance to be judged on a whole slew of problems, including how long it takes them to complete calls or how many e-mails they can respond to in an hour.

But in time, said McFarlan, "We'll see the rest of the industry moving toward what Lands' End is doing."

"In terms of the shopping experience, they've done the most of anyone to make it easier to shop," said David Marshak, an analyst at Boston-based Patricia Seybold Group.

BY JULIA KING

Service Needs Drive Tech Decisions at Lands' End

Report: Ineffective help features cause retailers to lose millions in online sales

BY JULIA KING

DOUGIEVILLE, WIS

It's just after 10 on a Thursday morning six weeks before Christmas, and this is James C.'s second phone call to Lands' End Inc. in less than 12 hours.

He's already ordered a coal-gray blazer and slacks for his wife. Now he wants a skirt from a different page. But will it match? Will she like it? Must he pay a second shipping charge?

Nancy Mortimer, a 15-year customer service veteran, puts James on hold. She dials up a Lands' End "specialty shopper," who lays out the garments side by side in a room that contains every stitch of clothing Lands' End sells.

No match, the specialist concludes. Nancy puts in a second call to her supervisor, who agrees to scrap the shipping charges. Ninety-six seconds later, Mortimer is back on the phone with James, who opts for a different skirt and thanks her four times for her help.

Lands' End has discovered that simply isn't the case, but it isn't worrying about it. Instead, the king of cotton turtlenecks, Polartec parkas and other apparel is leveraging its already well-known customer service online as its chief means of retaining customers to the Internet. That would cut right to the heart of its heftiest expenses: the annual production and mailing of more than 250 million catalogs, which now accounts for 48% ($201 million) of its annual operating costs.

Examples of the company's online customer service features include one-click sizing tips and quick-time video demonstrations of how to take accurate measurements. Another example is its exclusive Shop With a Friend feature, which lets two friends or family members simultaneously view the same Web pages and have an on-screen chat about what they're viewing.

Lands' End information technology employees worked with WebLine to enhance the technology in exchange for all-important holiday selling season, said Bass.

Not only do all of these features improve customer service by helping shoppers order exactly what they want, they should also help reduce merchandise returns, said David Marshak, an analyst at Patricia Seybold Group in Boston.

In contrast, most other electronic retailers continue to focus on glitzy site designs. They might want to review their business plans. Business losses lost $1.6 billion in online sales last year specifically because of a lack of customer service support, according to Datamonitor, a market analysis firm in New York. This year, customer service-related losses are expected to double to $3.2 billion because online customers who might otherwise make a purchase have no way to get answers to their questions online.

However, two weeks ago, Lands' End surprised analysts by announcing an 18% drop in preholiday sales. The company blamed the slowdown on fewer catalog mailings and warm November weather, among other things. Analysts also cited merchandising problems, noting that Lands' End needs to update and expand its line of products if it is to capture a significant share of the ever-growing population of younger, hipper buyers.

Still, when it comes to online shopping and customer service, "Lands' End is the leader. They set the bar for others," said Marshak.

On November 23, Lands' End surprised analysts by announcing a 15% drop in preholiday sales. The company blamed the slowdown on fewer catalog mailings and warm November weather, among other things. Analysts also cited merchandising problems, noting that Lands' End needs to update and expand its line of products if it is to capture a significant share of the ever-growing population of younger, hipper buyers.

Still, when it comes to online shopping and customer service, "Lands' End is the leader. They set the bar for others," said Marshak.

From 1997 to 1998, Lands' End's online sales jumped from $28 million to $61 million. By mid-November this year, Lands' End had sold more than $150 million worth of apparel online, more than anyone else in cyberspace, analysts said.

Its innovative online customer service features also are helping Lands' End reach a new set of consumers. Prior to
WORKSTYLES
What It's Like to Work at . . .
Starbucks

Interviewee: Kimberlee Sherman, director of production, process services
Company: Starbucks Corp.
Main location: Seattle, near the company's headquarters.

What bonuses do performance-oriented, spot-bonus tools and AS/400 training: Unix, life cycle methodology, database query services.

What is the IT budget last year? We didn't track it at all. We consider it an important consideration because we do have our IT costs.

What are the stores to track receipt? Then we conduct our IT expenditures. We have our IT costs.

What are the stores to track receipt? We have our IT costs.

What is the Java Gym, a full-service gym with aerobics, kickboxing and yoga classes and a masseuse once per week? We have our IT costs.

Where the office gossips: Outside cubicles, in the common areas, the kitchen, wherever. We have our IT costs.

Do you carry beepers and cell phones? Yes. We have our IT costs.

How does IT contribute to the Starbucks store jargon in IT? Yes. We have our IT costs.

Do you use the Starbucks store jargon in IT? Yes. We have our IT costs.

Post-Y2K proactive

For better or worse, many Y2K managers are now saying, "Remediation is done, testing is finished, contingency plans are approved, command centers are staffed and SWAT teams are ready to pounce on any problems. There's nothing left to do but sit back and wait, right?" For some organizations, this will be a practical approach: There will be more than enough trouble to keep everyone busy when Jan. 1 arrives. Meanwhile, those organizations that haven't finished their Y2K repairs have little alternative but to wait and see what breaks; the politically acceptable description is "fix on failure."

But what about the organizations that have done good jobs of repairing their systems and working closely with their suppliers? What about the organizations that find everything is quiet when the clock strikes midnight on New Year's Eve?

The answer is to take a proactive stance and use every call, quiet moment to test for problems before they become crises. Just because nothing goes wrong Jan. 1 doesn't necessarily mean you've eliminated every bug from your internal systems. Indeed, it may simply mean that you've been lucky so far. But once you're operating in a "true" post-Y2K environment (as opposed to the time-machine testing done prior to Dec. 31), you can rerun your systems tests and possibly expose some bugs that were left behind.

Similarly, if you've done all your Y2K testing without "aging" or rolling forward the date fields in your databases (because it was too expensive and time-consuming to mine anyway), you may simply mean that you've been lucky so far. But once you're operating in a "true" post-Y2K environment, you may mean you've eliminated every bug from your internal systems.

Beyond this, build a proactive network of employees, customers and observers in key geographic areas where your company does business to provide the earliest possible warning of so-called "unknown unknown" problems — problems whose existence wasn't even on your Y2K radar screen and whose status couldn't have been determined anyway.

This is particularly important for multinationals. We'll be grateful if things work smoothly in our own country, but what if Y2K problems lead to unrest in Brazil, South Africa, Indonesia or the Middle East? In countries where the press is highly regulated, it could be difficult to get an accurate picture of what's going on just by watching CNN. If you've got employees, factories or other assets exposed to danger, a speedy response will be crucial.

Bottom line: If nothing goes wrong on New Year's Eve, we can all breathe a sigh of relief. But only a single sigh. Our work will have just begun, and we should continue testing for at least the first few months of 2000.
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They’ve spent years of effort and millions of dollars. They know their systems are set, but they have plans in place in case of a bank run, an executive heart attack or a riot. With the new century in sight, the six companies Computerworld has followed in this occasional series are treating the final countdown to Y2K like any routine day.
When 'Done' Means 'Not Yet'

BY GARY H. ANTHES

"WERE DONE," said Tony Del Duca, vice president of enterprise supply-chain systems at Nabisco Inc. Still, he acknowledged that the definition of done has shifted as the company has moved through its year 2000 project.

"I thought that contingency plans would be the end, but then there were rollover plans after that, and then you’re setting up a command post," he said. "It always appears there is one more task you are still doing."

Or undoing. The $8 billion snack-food giant, which had a $42 million Y2K budget, had planned to use cell phones if ordinary communications were knocked out. But the remnants of Hurricane Floyd moved through New Jersey in September and flooded a major cell phone center, knocking out service to Nabisco’s headquarters in Parsippany. New plan: satellite phones.

Despite last-minute headaches, there has been a silver lining in the grueling three-year Y2K project for Del Duca and his two principle Y2K deputies — all recently received promotions.

Tim Bilali was bumped up from senior manager to director. He headed year 2000 work for manufacturing systems under Del Duca but now has responsibility for Y2K projects for all Nabisco systems worldwide. "I viewed the [earlier] job as a good opportunity to gain visibility, and I view this job as a reward," he said.

Bilali said the hardest part has been unifying and integrating the activities of information technology, business units and external parties. "There was minimal involvement on the business side until recently," he said. "The prevailing thought was, 'It's an IT problem, and they will resolve it.'"

The solution proved simple. "We said to the businesspeople, 'If this IT system isn't there, how are you going to run the business?' That forced them to think about it, and they are on board now," Bilali said.

Asked what would happen if the satellite phones failed, Bilali said, "We can pack up and go home. You can only plan so much."

Using Y2K Experience

Barbara Calhoun was promoted from Y2K project manager for manufacturing systems to manager of a new Program Management Office, which encompasses all of IT at Nabisco. Her job: to bring the methodologies, standards and project management techniques she developed for year 2000 in manufacturing to IT areas across the company.

"I want the [office] to be a home base for project managers at Nabisco, where they can share information about how they do things," she said.

Another goal is to use the office as a way to get business managers to appreciate the work IT does and ensure that it's meeting their needs, Calhoun added.

Asked about Y2K fatigue, Calhoun said it doesn't exist at Nabisco. "The more it's in the news, the more it's like, 'Wow, we are really working on something important.'" But after a moment's thought, Calhoun acknowledged there might be just a little fatigue with the punishing documentation workload imposed by IT and Nabisco's legal staff requirements. "Nabisco auditors are actually reading it," she said.

The more it's in the news, the more it's like, 'Wow, we are really working on something important.'

BARBARA CALHOUN, MANAGER, PROGRAM MANAGEMENT OFFICE, NABISCO

UNION PACIFIC CORP.

Making Jan. 1 A Routine Day

BY JULIA KING

DON'T LOOK for special customer call-in numbers, Y2K duty officers or other visible signs of minimal-in-a-millennium special measures at Omaha-based railroad giant Union Pacific Corp. (UP) this New Year's Eve.

But make no mistake: That doesn't mean they aren't being taken.

"We don't want to give people special phone numbers," said Tim Brechbill, the $9 billion rail company's year 2000 project manager. To avoid creating even a whiff of panic, "we're not asking anybody to do something special," he said.

But behind the scenes, UP has gone to great lengths to ensure it's business as usual in the crucial hours before and after midnight Dec. 31.

UP will be staffing a Y2K command center at each of its three data centers plus a central operations command center at its Harriman Dispatch Center in Omaha. From 11 p.m. CST on Dec. 31 until the wee morning hours of Jan. 1, designated employees from the railroad's various units across 23 states will stand in to fill in the blanks on prescribed status reports — all part of the railroad's behind-the-scenes Y2K rollover operations. The railroad has a $46 million Y2K budget.

"The scripts go through all of the [railroad's] processes," said Jerry Lucas, who heads the executive oversight committee for Y2K issues. For example, transportation control will report on the status of specific activities, such as calling in train crews and locomotive functions, he said.

"There's a very detailed game plan from 11 p.m. through the first three hours after midnight. We have the scripts down to the minute of who reports in when and with what exact information," Lucas said. For an as-yet-undetermined amount of time just after midnight, all traffic and operations will also be halted.

"For some period of time, the trains will not be running. This is a decision we're still trying to finalize," Lucas said. "But we are going to do certain testing after midnight before anything moves."

The good news is that throughout the rollover reporting and testing period, Brechbill is anticipating low volumes of traffic. Historically, UP does only about 40% of its normal daily business on New Year's Eve. Although the railroad anticipated otherwise, this year should be no different, according to information UP sought from its largest customers.

"What we found pretty much across the board is that people are doing business as usual," Brechbill said.

"We didn't see any auto manufacturers or other big customers stockpiling [supplies], which we had anticipated could be one of our biggest problems — bigger than Y2K," he said.

Brechbill already has his next assignment. He'll be leading another project that cuts across multiple departments, designing and implementing a customer relationship management (CRM) system scheduled for funding next year.

"I don't think of [the new role] as a reward," he said. "But I think one of the reasons I was chosen is that on Y2K, I had to work with a lot of different people in a lot of different departments."

On the CRM project, he said, "a lot of the people will be the same ones I dealt with on Y2K."
The Date Change

BY THOMAS HOFFMAN

Vaulting Past
The Date Change

BY THOMAS HOFFMAN

In fact, since March, CIBC has whittled its core Y2K team down from 35 people to 20. And the bank wouldn't even be carrying that many people into the transition weekend if it wasn't for its need to update Canadian and international regulators, such as the U.S. Federal Reserve System, about its status.

Therefore that end, CIBC will dissolve its Y2K program office after Jan. 1, said Burns. If any Y2K-related issues arise after that date, managers who head particular business units or geographic regions will deal with them, he said.

That's not to say the bank will stop updating its customers and investors about its Y2K status over the weekend.

In addition to having some of the Y2K team members update the company's Web site (www.cibc.com), call center agents will be prepared to answer customers' questions about the bank's rollover status.

Once the Y2K program office has been dissolved, said Burns, the other team members "will move back into other project work."

They won't be idle very long — the bank is restructuring under chairman and CEO John Hunkin, who took over the top post June 3. "So that will lead to other projects," said Burns.

For now, Y2K team members are catching a breather. Like other companies, CIBC has stopped employees from taking vacations over the holiday period, and senior executives are being asked to stay within an hour's drive of their offices.

If little — or nothing — happens over New Year's weekend, employees will probably wonder why so many people were asked to be on standby, said Burns. "But in the end, hopefully, they'll realize that it's a customer service issue."

Ready for Worst, Expecting Little

BY JULIA KUNG

AY CIVATTE is an engineer by training who has been in the electric utility business for 30 years. He has designed power plants, run them plus managed the IT group at one of the two mid-Atlantic electric utilities that merged two years ago to become Conectiv.

"That's a unique set of experience that makes him absolutely the right choice for Y2K duty officer," said Moira Donoghue, corporate secretary at the $2 billion electric company, which has spent some $15 million preparing for the 2000 date rollover.

As Y2K duty officer, Civatte is in charge of directing the action set forth in the company's detailed Y2K rollover and contingency plans, which cover equipment, services and more than 1 million customers in Conectiv's five-state coverage area.

He expects to be planted in Conectiv's Y2K war room in Newark, Del., from the morning of Dec. 31 until Jan. 4, maybe even Jan. 5.

What he doesn't expect — thanks to years of strategizing and practice run-throughs — are big surprises. After two industrywide Y2K drills, plus a companywide drill on Oct. 28, "we've done a thorough job in identifying any issues, and from a systems standpoint, we haven't had any eleventh-hour surprises," Civatte said.

But the Oct. 28 drill, which put employees through prescribed paces for 50 kinds of possible emergencies — including a revolt by citizens who storm a Conectiv office building — did turn up a few minor glitches that have been remedied. One example: Some employees didn't know exactly how to use their backup mobile telephones and the company's 800-MHz radio system for voice communications. They have received additional training.

Customers' once-keen interest in Y2K also has dramatically subsided. The company's customer service center, which added employees to field calls during last month's televised Y2K: The Movie, received a half-dozen calls.

"Panic has subsided considerably over the past six months," said Mary Rucci, Conectiv's public relations manager, whose team has addressed groups about Y2K issues. "When we first went out, we were addressing functions with 200 and 300 people in attendance. Among the discussion topics were survivalist tactics because, then, there was so much fear and panic. Now, we might get six people.

John Burns, Conectiv's 2000 project manager for the past three years, has also assumed a new role — manager of IT infrastructure development — although he will remain closely involved with what began as a computer systems project "that people weren't exactly stepping up to the plate to do" back in 1997. The new job is a natural follow-up to his cross-functional work on Y2K and all the practice he has had working as something of an evangelist for IT in general.

"At the beginning [of the Y2K project], I had to try and convince folks that infrastructure is everyone's concern, that it's not just an IT thing," Arena said.

"A lot of people still take infrastructure for granted," Arena said. "They take for granted that they turn their computer on and it'll all be there. But technology can become like a drug addiction, and you're not real careful, you can become technology-broke. I'll need to do a better job of communicat-

CHRIS ARENA, Conectiv's year 2000 manager

In 2000, Conectiv expects to be able to make it across a third year without a hitch. It is the most confident it has been about Y2K over the past three years, has also as-

MOREONLINE

For the past two years, Computerworld periodically checked in with six companies — including Merrill Lynch and Nabisco — as they tackled and solved their Y2K problems. Check out the Year 2000 Chronicles at www.computerworld.com/y2kwatch

- Chapter 7 (today)
- Chapter 6 (July 19, 1999)
- Chapter 5 (Feb. 8, 1999)
- Chapter 4 (Oct. 12, 1998)
- Chapter 3 (June 22, 1998)
- Chapter 2 (March 9, 1998)
- Chapter 1 (Jan. 12, 1998)

The battle for business support, IT staff.

Expecting Little, Ready for Worst.
Watching Y2K Unfold, One Market at a Time

BY THOMAS HOFFMAN
NEW YORK

Forget about the ball dropping in Times Square on New Year's Eve. For Edward Goldberg and other members of Merrill Lynch & Co.'s year 2000 team, the real action begins on Dec. 31 at 6 a.m. EST.

That's when the first of Merrill Lynch's offices around the world — in this case, Auckland, New Zealand — will greet the new year. Goldberg and his crew will be anxiously monitoring the results from the company's primary command center on New York's lower West Side.

How Auckland deals with the date change won't necessarily make or break the world's biggest brokerage. But it could be a harbinger of things to come.

"I would take this as a terrible defeat if we didn't succeed [with our Y2K preparations]," said Goldberg, executive vice president of the company's operations services group. "Like most of the 40-person Y2K team that will be on the first 12-hour shift in Merrill Lynch's New York command center, Goldberg, a 38-year company veteran, will have a cot set up so he can catch a few winks between milestones.

"My wife asked me if we were going to the club" to ring in the new year, chuckled Goldberg. Instead, he'll break from the company's command center for a few hours on New Year's Eve to join his wife and some friends for dinner in the city before returning to the command center before midnight.

Other Big Dates

"Though midnight in New York will be a critical time for Merrill Lynch, Jan. 3 and 4 are equally important," said Jim Murtha, senior director of mandated initiatives at the firm. That's because Merrill Lynch and other big brokerages will be executing their first market transactions and nightly batch-processing runs on those dates.

Murtha and other senior managers — including Merrill Lynch Chairman David Komansky — will be carrying binders that contain key event time lines. For example, Komansky will know that the first stock exchange to open in the new year won't be in Tokyo, New York or London, but in Cairo (Jan. 2 at 2 a.m. EST).

"David and I are joined at the hip," said Goldberg. "We'll let him sleep some and touch base with him with [periodic] health checks. I'll call him [after midnight] to wish him a happy New Year and tell him where we're at.

Dress Rehearsal

In early November, Merrill Lynch, with a $2.5 million year 2000 project budget, held a Y2K dress rehearsal that included 96 different scenarios. For example, at one point during the drill, Murtha pretended to experience chest pains. That led him and Goldberg to discover that a handful of the firm's 80 command center employees in New York have CPR training.

Merrill Lynch began paring down its core Y2K team from 180 people in July after it had completed its remediation efforts. Some staffers have been filtered back into different parts of the organization such as capital markets and equity trading, while others have been assigned to work on major upcoming projects such as Wall Street's plan to price stocks in decimals rather than fractions, which is slated to begin in mid-2000, Murtha said.

Like other companies, Merrill Lynch can't completely shield its Y2K team from experiencing millennium burnout. However, said Goldberg, knowing that the company's upper echelon holds weekly Y2K meetings "keeps people on their toes."

The brokerage also can't guarantee that it can thwart any acts of cyberterrorism that might occur through early January, but such an event is unlikely, said Murtha. "This will be the hardest time to get a virus in play," with so many technical experts on hand monitoring systems, said Murtha.

Security

Plus, information technology professionals, including consultants, have to go through intensive security checks to work for Wall Street firms like Merrill Lynch. And given the amount of testing and retesting Merrill Lynch has conducted on its software code, the chances of cyber sabotage are pretty slim, said Goldberg.

"This is not the kind of shop where someone can walk in and change [software code]," he added.

"I don't want to be partying on New Year's Eve, but I'm not going to be sweating it," said Cherise Vaughn, who ran the communications and customer service end of Bard's project from her small consulting company, C-Coe PeopleTech, in Charleston, S.C. "My people know more about Bard than some of their own employees."

"This is the most impressive team effort I've ever been involved in," Maszczak said of his outsourced operations, which involved fewer than a dozen IT specialists and programmers over the past two years.

As he was dealing with the Y2K project, several of his IT managers stepped into leadership roles in Bard's technical infrastructure group — about 70 nationwide. They learned "a tremendous amount about our business," Maszczak said. "Every one of those people is 10 times the manager and IT person they were at the beginning of all this."

In the course of the project, Vaughn dealt with people at Bard installations in Germany, Australia, Canada and France. She answered thousands of queries about the Y2K status of products, tracked information and lost all fear of the legal profession.

"Used to be people would mention they were going to call their lawyer, and I'd freak out. That doesn't faze me a bit now," she said, laughing.

The next challenge will be expanding her computer training firm into — what else? — Web site development work.

The personal aftermath of working on Y2K is something of an open question for Maszczak. "I think Y2K gets under your skin. Going back to normal day-to-day isn't going to cut it," he said.

"What I really like to do is deal with problems, and Y2K project work gives you those kinds of skills."
A YEAR-END CHECKLIST

Got cell phones? Pencils? Know the whereabouts of your staff? Use our Y2K checklist to help you make sure you have the information and resources you need. Don't sweat the details. Write them down and check them off.

Communications and People

☐ COMMUNICATIONS BULLET-PROOFED. Loss of communications would be a bigger issue than loss of electricity, so we're really banging on those plans," says Steve Jost, Y2K manager at Deere & Co., the Moline, Ill.-based manufacturer of heavy machinery. That means having phones, cell phones, pagers and even radios ready.

☐ CALL LISTS UPDATED. "All companies have turnover, and in the IT arena it's significant," says Chas Snyder, Y2K project manager at Levi Strauss & Co., in San Francisco. Are you sure the people on your Y2K call lists are still at the company? "The lists change a lot, and we have to make sure that list is accurate and has everybody we need," he says.

☐ PHONE TRAFFIC STRATEGY. To minimize phone traffic jams, designate certain phone lines for incoming calls only and others for outgoing calls only, says Paul Kirvan, a senior consultant at Telcordia Technologies Inc., a telecommunications company in Morris-town, N.J.

☐ CALL-IN CAPABILITY. Double-check your hot lines, call centers and other important phone numbers to be sure they work, says Irene Dec, vice president for information services and Y2K manager at Prudential Insurance Company of America in Newark, N.J. And see that the numbers have been disseminated to those who will need them.

☐ CALL-IN INFORMATION. Make sure your call handlers have up-to-date information to answer customer questions, Dec says. And make sure any prerecorded statements are current and correct.

☐ MEDIA INQUIRIES. "We know that new organizations are going to be calling us to see what happened," says Deborah Stagg, Y2K project manager at San Diego Data Processing Corp., which handles information technology for the city of San Diego. Each manager on Stagg's team will keep track of any problems, determine whether they're Y2K-related and pass the information along to a designated media contact person.

☐ VENDOR COMMUNICATIONS. "Vendors keep surprising us with Y2K patches," says Snyder. "You have to be on guard for last-minute fixes." Keep in touch with your vendor representative, and check the vendor's Web site as well.

Logistics

☐ COMMAND CENTER. Does your command center have everything it needs: tables and chairs, a television and/or radio, phone lines and phones, a dedicated conference phone, cell phones from various carriers (in case some go down), pagers, fax machines, networked PCs, printers, message boards with pushpins or markers, flashlights, batteries, a phone log book, lists of contact numbers, Y2K contingency plan documentation, pads, pens, pencils, food, drinks and cots?

☐ CONTINGENCIES FOR CONTINGENCIES. "When you make contingency plans, it's very tempting and easy to concentrate on the big events," Jost says. "You may have grandiose plans in place, but how are you going to read contingency plans in the dark?" Did you check to make sure the flashlights really are stored in that supply closet? How about batteries? And how will you find the keys to that closet if the office is dark? Is there a supply of toner for the copy machine? Is there a supply of carbon paper in case the copy machine goes down?

☐ MANUAL PROCESSES. Sure, the contingency plans are in place, says Stagg, but how about the manual forms and the pencils, pens and erasers to fill them out? Make sure each department is set up and ready to roll.

☐ WORKER WHEREABOUTS. You've got phone numbers, says Dec, but do you actually know which buildings people will be working in, when they'll be there and what their roles are?

☐ ON-CALL LOCATIONS. "If your program is running at 1 a.m., we need to know where you're going to be," Stagg says. "And we'll be adding detail till the bitter end."

Timing

☐ ROLLOVER SCRIPT. There should be a minute-by-minute plan for each Y2K activity, from backups and system shutdowns to restarts and process checks. That will help you stay focused if things begin to go awry. "The whole weekend, from Thursday through Monday, is very detailed," says Snyder. "And we'll be adding detail till the bitter end."

☐ WORKLOAD ADJUSTMENTS. If you plan to run batch jobs earlier than usual, remember that you'll have to move back the rest of the schedule to open up a time slot, says Dec. And if Y2K test runs eat into the normal batch schedule moving forward, you'll have to adjust that also.
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Despite a 4% U.S. unemployment rate, most American Indians can’t get work. Meanwhile, IT managers hire increasing numbers of foreign workers under H-1B visas. New initiatives hope to change that picture by bringing technology and training to the reservations.

By Bronwyn Fryer

Despite a 4% U.S. unemployment rate, most American Indians can’t get work. Meanwhile, IT managers hire increasing numbers of foreign workers under H-1B visas. New initiatives hope to change that picture by bringing technology and training to the reservations.

By Bronwyn Fryer
sues, young people with access to computers and an interest in technology can enjoy stunning success. Example: 25-year-old Darrell Begay, who grew up on a Navajo reservation in New Mexico and spent his youth herding cattle. Begay had never touched a computer until he went to a tribal college. "That's when I took my first computer class, and I've never looked back," he says.

Begay was able to come up with the $2,700 he needed to enroll in the Summer Institute in Computer Science (SICS) at the University of California at Irvine. Today, he's among the 50% of program participants to pursue a degree in computer science. A senior, he's now a C++ wizard, and he's working at a start-up called NexTake Corp. in Newport Beach, Calif.

**Role Model**

"My family is ecstatic that I'm a productive member of society, and that I'm a model for my nephews and nieces," he says. "I only wish I'd learned about computers at their age."

American Indians who haven't grown up on reservations feel they have less difficulty getting an education and acclimating to the broader business culture of the U.S., says Dan Wall, a Potawatomi tribe member who works as a software process-improvement manager at Stamford, Conn.-based Xerox Corp. Wall grew up in New York state and has visited the tribe's reservation in Oklahoma only once. This distancing has played a part in his attitude, he says: "I've always felt that the opportunity is there for anyone with the education and the skills."

Mark Hunter, a 26-year-old Choctaw tribe member who grew up in San Antonio and is now working as an electronic business specialist at IBM in Dallas, says he's had a similar experience. A keen interest in engineering and good grades in school helped Hunter graduate from Dartmouth College, where he was part of a small group of American Indian students.

Today, Hunter is helping IBM "expand the pond for qualified Native Americans with the right skills," he says. IBM sponsors high school students with internships, scholarships and tutoring and support programs like SICS.

Did You Know . . . ?

- There are approximately 2.4 million American Indians in the U.S. - almost 1% of the population (U.S. Census Bureau, June 1999).
- There are 556 federally recognized tribes (U.S. Bureau of Indian Affairs, December 1998).
- There are 34 AMERICAN Indian reservations. The smallest is the Likely Rancheria in California, with less than two acres. The largest is Navajo, with about 16 million acres in Arizona, Utah and New Mexico. There are also tribes without land, such as the Ponca in Nebraska and the Lytton Rancheria in California.
- Twenty-two percent of the American Indian population lives on reservations and trust lands.
- The smallest tribe, the Augustine Band of Mission Indians in California, has a population of one. The largest tribe, the Cherokee, has a population of approximately 308,000.
- Thirty-four percent of American Indians over the age of 25 didn't graduate from high school.
- Nine percent of American Indians have a bachelor's degree or higher; 3% have graduate or professional degrees.
- One-third of American Indian households live below the poverty level (Census Bureau, 1995).
- Only 39% of rural households in American Indian communities have telephones, compared with 94% for non-Indian rural communities (U.S. Environmental Protection Agency assessment of technology infrastructure in American Indian communities, June 1999).
- Of rural American Indian households, 22% have cable television and 9% have PCs. Of those with PCs, only 9% have Internet access (EPA, 1994).
- In rural areas, 12% of American Indian households lack electricity and 23% lack gas (EPA, 1994).

Fryer is a freelance writer in Santa Cruz, Calif.

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YOU CALL THIS WORK?

MONTHS BEFORE MOST OF US SEE THE LATEST TECHNOLOGY, DR. BUTLER GETS A PEEK AT THE REALLY INTERESTING STUFF.

For example, her team's initial XML research yielded an intelligent agent that collects relevant information across multiple sources then synthesizes, categorizes and disseminates it based on a user's specified interests. "Our Next Generation Enterprise and Business Intelligence & Knowledge Management labs are collaborating now to evaluate emerging non-numeric mining tools," she proudly reports. "We'll be releasing the results soon."

And where does Dr. Butler gain her understanding of emerging technologies? From her peers, at conferences, from the Web and from Computerworld, The Newspaper for IT Leaders.
Total Cost of Ownership

DEFINITION

Total cost of ownership (TCO) is a model developed by Gartner Group to analyze the direct and indirect costs of owning and using hardware and software. Managers of enterprise systems use various versions of TCO to lower costs while increasing the benefits of information technology deployments.

A Total Cost of Ownership Example

International Data Corp. (IDC) in Framingham, Mass., used TCO to determine costs and benefits experienced by medium-size to large commercial organizations developing Lotus Domino applications. According to IDC, Lotus notes servers were more cost-effective than parallel Windows CE and Palm OS handheld computers.

A database application that was running Lotus Notes on Windows CE operated smoothly, averaging 24.9 hours of uptime per week, compared to 21.4 hours on the PC platform. Time spent using Lotus Notes was less on the Linux platform than on the PC platform, which is more efficient. The PC platform also had lower maintenance costs, which were $52.00 per week on the PC platform compared to $40.00 per week on the Linux platform.

The study also found that the cost of hardware and software was lower on the Linux platform than on the PC platform. The cost of hardware and software was $2.00 lower per week on the Linux platform than on the PC platform. The cost of software costs was $5.50 lower per week on the Linux platform than on the PC platform.

The overall cost of ownership was $10.50 lower per week on the Linux platform than on the PC platform. The study also found that the cost of software costs was $5.50 lower per week on the Linux platform than on the PC platform.

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TCO Comparison

<table>
<thead>
<tr>
<th>Category</th>
<th>PC LAN in (S/YEAR/USER)</th>
<th>AS/400 in (S/YEAR/USER)</th>
<th>AS/400 (S/YEAR/DIFFERENCE)</th>
<th>AS/400 (S/YEAR/DIFFERENCE)</th>
<th>PC LAN in (S/YEAR/USER)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>13</td>
<td>2</td>
<td>-65</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Software</td>
<td>22</td>
<td>23</td>
<td>5</td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>Operations staff</td>
<td>70</td>
<td>114</td>
<td>39</td>
<td>67</td>
<td>82</td>
</tr>
<tr>
<td>Total</td>
<td>105</td>
<td>139</td>
<td>25</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Delmonte, president of JDA Professional Services Inc. in Houston, an IT staffing firm, is a consultant on a project that also performs cost-benefit consulting.

"For a lot of companies today, the only way to stay competitive is to keep taking advantage of the same technology that their competitors are using," Delmonte says. "Instead of consolidating directories for multiple applications, that's needed in consistent sign-on is a change in password assignments. Rathje estimates that the university helped desk could save about $790,000 annually through consistent sign-on.

Between Departments

Other obstacles to TCO are interdepartmental in nature. John Malloy, a systems programmer at Partners Health Care System Inc. in Boston, says that in not-for-profit settings like universities, researchers often obtain computer equipment through grants. IT staffers are sometimes unwilling to count this equipment as assets if the non-IT department isn't managing it, according to Malloy, and therefore can't give a true TCO calculation for the organization.

For-profit companies can also experience interdepartmental stress. "Without TCO, a lot of assets get hidden by being expensed through the departments," Delmonte says. To circumvent this problem, Delmonte advises consolidating the acquisition of assets within a centralized purchasing department.

Indirect Costs

TCO also shines a light on indirect IT costs such as support, training, and retooling. Companies can use asset management tools to find exactly what hardware and software are out there in the installed base. According to Delmonte, organizations can save money in the long run by moving users from their existing hardware and software to standard configurations.

It's less expensive for companies to provide company-wide training sessions on a single operating environment than to let each department provide its own training. In addition, support and maintenance are simplified if the help desk doesn't need to keep on top of so many products, Delmonte says.

To get company-wide acceptance and compliance, TCO typically requires the backing of top-level executives such as the chief financial officer, chief operating officer or COO, experts say. Otherwise, some departments might drag their feet in participating.

"TCO can be very revealing. It might show that certain departments are too autonomous or that the IT department is being poorly managed," Kirwin says. But TCO appeals to many top-level executives as a way of reining in IT costs, Delmonte says.

By Jacquelein Emigh

Emigh is a freelance writer in Boston.
No substitute for contract clarity

S

O WHAT Is good enough? Clarity, and nothing less. I really hit some
supplier hot buttons with the Sept. 27 column “Are ‘Best Efforts’
Good Enough?” (You can check out that column at: www.
dobetterdeals.com/computerworld.) One of the printable responses
came from Keith Winn, a vice president at a supplier. He notes:

“As a VP of technology and
director of product develop-
ment, I was trained through
the years by legal counsel to
regard best efforts as a legal
term that required that all fea-
sible efforts, up to and includ-
ing losing money, be applied
to the tasks addressed in a
best-efforts clause. We were
advised to substitute ‘com-
mercially reasonable efforts’
for ‘best efforts.’

“From this school of
thought, a best-efforts clause
is a very strong obligation on
the vendor — one that in soft-
ware development would re-
quire the vendor to hire addi-
tional people to finish a job on
time, even if it meant the ven-
dor lost money in doing so.

Have you heard of this reason-
ing? Is it outdated? I am cer-
tainly not an attorney and
would be interested in your
experience with this.”

Keith, I’ve been testifying as
an expert witness on contracts
and negotiations for more
than 20 years in state and fed-
eral courts. One thing I’ve
learned is that in an IT deal,
neither customer nor supplier
should leave the issue of com-
pliance for lawyers or juries
to define for them.

What happens in court is
the judge gets 12 laypeople off
the streets from widely varied
backgrounds (who normally
have little business or IT ex-
perience), and they decide
what the supplier and cus-
tomer meant by the words in
their contract — all of them.

What’s more, as a rule of
thumb, you’ll pay lawyers
about $50,000 per word to try
to tell the jury what some of
those words really mean.

You’re charged for the
lawyers’ time (and their clocks
run really fast), expert witness
fees, court reporters, travel
and lodging expenses, prepara-
tion, assistants, faxes, phone
calls, word processing, free
lunches and so on.

After 35 years total in this
business, I’m absolutely con-
vinced what a good contract
for both parties is: a document
that’s so clear a disinterested
third party of average intelli-
gence can read it and — with-
out coaching — completely
understand what the deal is.

We should strive diligently
to make both parties’ contract
compliance easily deter-
minable by the parties. (What
a concept.)

Both customer and sup-
plier should iden-
tify things like
specific results to be
accomplished, a
measurable level
of effort, state-
ments of work (a
detailed list of
supplier ‘to-do’s’),

or any other way
to objectively
prove obligations
have been fulfilled.

So, Keith, when
there’s a lot
of painstakingly clear
documentation of
both parties’ spec-
cific rights and
obligations, the likelihood of a
dispute even occurring is re-
duced dramatically. That’s
my experience, and thanks
for asking. I love to get on
my soapbox.

Outsourcing Stories

I’d like to feature some good
commentary about deserving
outsourcing suppliers. Do you
have a genuine, real compre-

hensive outsourcing success?
I’m somewhat skeptical in
general, so...

Have you heard of this customer out there who have been
“outsourced” for a few years
and still believe the
outsourcers are true “part-
ners”?

How about: Do
you feel like you
gave the keys to the
company store
over to the outsourcers
and now you’re trying to
maximize their profits
at your expense?

How about: Those of you
who used one of the
big-deal, big-name
outsourcing

lawyers or consul-
ting firms (or both)
to help do
the deal — did
they get you for big, big bucks
and do a deal that didn’t work
right when the ink was dry?

Is there a major outsourcing
customer out there who’s willing
to truthfully say: “Boy, this
is great! We’re so happy we did
this?” I’d love to hear about it.

E-mail me and we’ll discuss
your success stories — or
painful learning experiences
for everyone’s benefit.

Thanks.

JOE AUER/DRIVING THE DEAL

BRIEFS

Funding Raised

E-Steel Corp., a New York-based
ecommerce-to-business marketplace
for the $700 billion global steel industry, recently
raised an additional $66 million in its third
round of financing. Backers include Goldman, Sachs & Co. in New York,
General Electric Capital Corp. in Stamford, Conn., and Da Pont Co. in
Wilmington, Del.

Online Billing

Southern California Edison (SCE) is
working with Netscheck, based in Santa Barbara, Calif., to develop
an electronic billing and payment service. The service is intended to
enable SCE customers to view and
pay their power bills over the Inter-
et. San Francisco-based SCE plans
to make the service available to res-
idential and commercial customers
sometime next year.

Health Care Industry

Santa Barbara, Calif.-based Tenet
Healthcare Corp. and Mountain
View, Calif.-based Chemdex Corp.
formed a new business-to-business
e-commerce company that will pro-
vide supply-chain services — pro-
curing supplies and managing vendor
contracts — to the health care indus-
yr. RM Global Services in Tampa,
Fla., will provide e-commerce and
integration services to the new com-
pany’s customers and suppliers.

Net Brokerages Gain

Full-service brokerage firms saw
their average per-customer profits
drop by 9% this year, while
online brokerages and other self-

service brokerages experienced a
29% gain in per-customer profits,
according to a report issued by
Andersen Consulting in New York.

The study, which measures per-
customer profits and costs between
mortgage companies and other
financial services players, found
that full-service brokerages had the
highest costs per customer, at
$934, while the average online or
self-service broker spent just
$348 to support each customer.

Online Store

Millipore Corp., in Bedford, Mass.,
launched a new online catalog and
stores using e-commerce technology
from Burlington, Mass.-based
Open Market Inc. The company’s new
business-to-business Web site,
www.millipore.com, includes
detailed information about 7,000 of
Millipore’s scientific and technical
products, plus online ordering and
payment capabilities.

Intelligroup Spin-off

Intelligroup, based in Jersey City,
N.J., will spin off its SeraNova Internet
services unit into a separate com-
pany focused on developing busi-
ness-to-business portals. The spin-
off is expected to be completed
by March, the company said. Raj
Komen, co-founder of Intelligroup,
will be SeraNova’s CEO.

Andersen Expansion

Andersen Consulting is expanded
its Internet businesses.

The Palo Alto, Calif.-based firm will be
headed by Andersen managing part-
ner Jackson Wilson.

Outsourcing Deal

Inacom Corp. has announced a five-
year outsourcing contract with
Memphis-based Federal Express
Corp. to build, configure and deliver
FedEx PowerShip customer auto-
mated device systems to FedEx
accounts.

Omaha-based Inacom will
acquire and configure FedEx PowerShip
components to automate shipping,
tracking and invoicing.

Village Adds Services

New York-based Village Inc.,
an online network for women, has se-
lected Atlanta-based VerticalOne
Corp. to provide a one-stop person-
account aggregation service to its
approximately 7,1 million visitors.

The service is intended to help
visitors manage their financial and personal infor-
mation with a single point of access to
reward programs, communications,
investments, credit-card and bank statement and other bills or
personal accounts.

The service will be available free
of charge to visitors of Village.com,
beginning next month.

BUSINESS ADVICE
IBM WebSphere® Application Server integrates with back-end systems and scales to support high transaction demands on applications. It also speeds development with powerful tools – that support high demands on you. See how at www.ibm.com/software/soul/websphere

IBM, Websphere, the e-business logo and Software is the soul of e-business are trademarks of International Business Machines Corporation ©1999 IBM Corp. All rights reserved.
CLOGGING THE NETWORKS WITH HOLIDAY CHEER

The holiday season may be a time of good cheer, but for e-mail administrators, it's also a time for e-mail viruses and all those network-congesting electronic Christmas cards, multimedia Hanukkah greetings and New Year's GIF images. The proper policies and filtering tools can smooth out holiday mail headaches. » 56

BIZTALKING

Microsoft wants badly to use its BizTalk specification for interoperability with rival platforms. But while customers are interested in what BizTalk could bring to the interoperability table, they'll remain cautious until problems such as Microsoft's ongoing antitrust woes and the lack of an XML-compatible BizTalk server are resolved. » 56

HOT START-UPS: WHERE ARE THEY NOW?

Thirty-three companies have been profiled in our weekly Emerging Companies section since it began last April. Some of those companies have shot up the stock charts, while others haven’t done as well. In this year-end roundup, we'll examine a few of the most active. » 58

QUICKSTUDY

Web personalization technology is sizzling hot for corporate Web sites around the world. Knowing what your customers are likely to want ahead of time lets you tailor their Web experience precisely and possibly boost sales. But companies must balance the information they receive against customers’ needs for privacy. It’s not always easy. » 60

FLASHBACK: END OF AN ERA

After documenting five decades of technology, we’re finally up to date. The people who helped make the past 50 years happen pick their favorite moments. » 66

4 E-SHOPPING DAYS LEFT — WHEW!

This is it. Christmas. It’s been a year since e-commerce retailers wrestled the last holiday order into gift wrap and shut the door on what was, for some, a morass of crashed servers, dropped connections, partner failures and distribution errors. Now, after 11 months of planning, upgrading, repartnering and praying, the holiday sales riot is in full uproar. 62
Delphi Predicts Jump in Portal Spending

The size of the market for software used to create corporate portals will grow to $740 million in 2001, compared with $178 million at the end of this year, according to Delphi Group Inc. in Boston. The consulting and research group included in its definition of the market the software used to provide the architecture for portal projects in some 55% of organizations surveyed all of its major users, including CSX Transportation, including Norfolk, Va.-based Norfolk Southern Railway Co. and Jacksonville, Fla.-based CSX Transportation, including a marketplace bulletin board and a conference and presentation center.

Ipswitch Updates Windows Mail Server

Ipswitch Inc. in Lexington, Mass., has released Imap Server 6.0 for Windows NT. The updated version contains support for Secure Sockets Layer encryption to protect passwords and content for Web messaging. The product also offers password-protected IMAP server control, remote administration, dual-lingual capabilities and support for authenticated Post Office Protocol. Pricing starts at $995 for 250 users.

Microsoft Finalizes BizTalk XML Standard

But lack of server has hampered users

BY DAVID GREINSTEIN

Microsoft Corp. earlier this month settled on the 1.0 version of the BizTalk.org specification for Extensible Markup Language (XML), but businesses lack the server that will make it work. "If the government succeeds in toppling Microsoft's monopoly, they said, the company will need XML to make its products open to rivals. "If they are forced to compete in an open world, you can be sure they will compete," he said.

Top E-Mail Attachment Clogs Of December '99

<table>
<thead>
<tr>
<th>FILE NAME</th>
<th>SIZE (BYTES)</th>
<th>CONTENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elfbow.exe</td>
<td>1,325K</td>
<td>Santa bows, and his elves serve as pins</td>
</tr>
<tr>
<td>Snowcraft.exe and snowball.exe</td>
<td>2,808K</td>
<td>Two teams of kids have a snowball fight</td>
</tr>
<tr>
<td>Frogplump.exe</td>
<td>1,400K</td>
<td>Catapult a frog to a lily pad or it gets eaten by an alligator or piranha</td>
</tr>
<tr>
<td>Tree.exe</td>
<td>2,388K</td>
<td>Decorate tree with ornaments, lights and presents</td>
</tr>
<tr>
<td>Xmas.exe</td>
<td>1,11K</td>
<td>Christmas trees, wreaths and presents, with Madonna's &quot;Holiday&quot; playing in background</td>
</tr>
<tr>
<td>Workshop.exe</td>
<td>2,532K</td>
<td>Elves in Santa's workshop assemble toys under the whip</td>
</tr>
<tr>
<td>Redneck.exe</td>
<td>1,094K</td>
<td>&quot;Twas the Night Before Christmas,&quot; with mentions of trailers and gun racks</td>
</tr>
</tbody>
</table>

Some users create the vacation rule improperly," Peterman said. "They set it to reply to every incoming message. If they reply to a list of 30 people, and if one or a couple of those people also have a vacation rule in place, it turns into spam.

BY LEE COPLAND

IT'S THAT TIME of year. Once again, holiday greetings start arriving by e-mail. And once again, a slew of cute attachments threatens to clog and bring down mail servers.

Many corporations face an annual attachment deluge during this season in the form of graphics interchange format (GIF), executable (exe) and MPEG files. While users enjoy listening to one-eyed aliens singing Aretha Franklin tunes and watching Santa bowl with elf pins, these attachments may slow network responsiveness and carry viruses.

Although one large attachment won't cause network delays, "the problem is one person gets some little, cute executable and then forwards it on to 20 of their friends," said Neil Horan, MIS manager at accounting firm Two Degrees LLC in Seattle. "Ninety-nine percent of the time, (playing with the attachment) just eats into their work time, but the bigger concern is that it has a malicious virus on its back."

Two Degrees routes all of its Internet mail through Allegro Inc.'s MailZone, which filters out unwanted attachments, viruses and spam. Dayton, Ohio-based Allegro is offering free e-mail filtering until mid-January. Pricing for the service usually starts at $1 per mailbox per month.

Richard Bliss, vice president of marketing at Allegro, said opened attachments with strong sexual connotations, such as the anatomically correct snow people that appeared last winter, could present a legal liability issue.

"Companies need to ask themselves: 'Do we have a legitimate business reason to have an e-mail executable attachment or MP3 file?'" he said. "If they don't have a strong justification, then they have to go. If you educate your workforce, the problem goes away in a hurry."

To lock the problem of overly zealous holiday e-xmas and GIF-giving, analyst David Cearley at Meta Group Inc. in Stamford, Conn., suggests companies set policies before they install filtering technology. "It's hard to tell what the attachments are, and some things are going to squeeze by," Corinne Peterman, senior network analyst at Georgetown University in Washington, said auto-response loops wreak the most havoc over the holidays. Many vacationing students, faculty and staff set their GroupWise e-mail accounts to automatically return a message stating that they are on break.
Your e-commerce site is succeeding beyond all expectations.

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E-commerce sales are soaring. The sales ramp is faster than anticipated and shows no sign of slowing. Unfortunately, the same can't be said of your site's performance. VERITAS Database Edition™ for Oracle® improves the performance, availability and scalability of your most demanding Oracle-based e-commerce applications by providing higher levels of storage throughput and accessibility. For more information about Database Edition for Oracle call 1-800-729-7894, ext. 84318 or visit www.veritas.com. With storage solutions from VERITAS, there's always room for the next customer.
Emerging Companies Roundup

We check in to see how our first year’s EC picks have fared

SINCE OUR FIRST LOOK AT AN emerging company in April, Computerworld has chosen 13 worthy of attention from information technology managers. A lot has happened since we began: many of the companies in our weekly profile were also a part of our special Top 100 Emerging Companies 2000 supplement last month.

Six are now publicly traded on U.S. stock exchanges; Preview Systems’ initial public offering (IPO) earlier this month has since more than tripled its opening price. Two of our companies have been acquired. And — oops — a couple have fallen on hard times.

Here’s a look at what’s happened to some of our most active Emerging Companies to date:

**F5 Networks Inc.**

**www.f5.com**

**Trading symbol:** FFIV

**Profiled:** Oct. 25

**Business:** Web server load balancing

**Chances:**

Jeff Hussey, F5 Networks’ CEO

F5 Networks’ Big IP and 3DNS family of Web server load-balancing software was designed to keep critical Web sites up through the heaviest traffic. That’s why we thought it ironic that Encyclopedia Britannica.com, F5’s poster child for load-balancing success, died under heavy traffic about the same time that F5’s great balancing act earned it a place as a Computerworld Emerging Company.

About 20 times the normal user volume responded to the company’s new free access policy and flooded Britannica.com before backup servers could be wheeled into place. Administrators were forced to shut down the site.

“There’s a lesson there,” says Doug Shuck, Britannica’s executive director of online sales. “Exceptional load-balancing capabilities don’t matter if you don’t have enough servers.” F5 wasn’t the problem,” he insists. “If the underlying software architecture had scaled the way I wanted it to and we had enough machines to handle the load, we would have been fine.”

Britannica.com has since added 64 new Web servers and 12 dedicated database/search servers, and F5 has accepted the increased capacity smoothly, with no further mishaps. That’s been about the only misstep for F5, which also made it to our Top 100 Emerging Companies for 2000 list. The company has added some impressive new partners, including portal builder Avantail Corp and 3Com Corp. And it shipped global/SITE Controller, a content replication and distribution system, last October to good reviews.

F5’s customer roster continues to grow; Hewlett-Packard Co’s new photo to View site, Cartogra.com, Bass Hotels, Intuit Corp. and the investment site MotleyFool.com now use F5 equipment. Company stock has gone from $34.88 per share on IPO day in June to about $210 per share.

**BIZRATE’S HENRI ASSELY and Farhad Mohit

BizRate Inc.**

**www.bizrate.com**

**Profiled:** May 10

**Business:** E-commerce site rating service

**Chances:**

BizRate relies on results from surveys customers take when they buy a product; if electronic retailers refuse to participate, the company offers a much less effective independent review of the site. Since our profile, the company has gained support from giants like CDNOW.com, which improve its chances. BizRate has added a click-through discount service and comparison-shopping systems, and the company has partnerships with reviews vetted by Consumer Reports that should attract new shoppers. BizRate certainly attracted new investors; it closed a second venture capital round of $20 million late last summer.

**BUT ...** Major electronic retailers such as Amazon.com Inc., Barnesandnoble.com LLC, Dell Computer Corp. and The Gap Inc. still aren’t playing the BizRate game, which makes the service much less useful. And while the company’s fledging electronic marketplace service analysis is beginning to be a hit with corporations, ratings veterans like Nielsen Media Research and newcomers like BuyerTouch Inc. crowd the field with great offerings.

— Cynthia Morgan

**Bowstreet Software**

**www.bowstreet.com**

**Profiled:** June 28

**Business:** XML-based data management systems

**Chances:**

Bowstreet brought out its Web Automation Factory environment last month with Microsoft-style hoopla, but this quarter-million dollar tool kit may really deserve that much. The XML-based system lets IT managers build business-to-business commerce sites and content classification systems relatively quickly, using a Bowstreet-inspired directory classification system. The IT Crowd picked it up.

**Brocade Communications Systems Inc.**

**www.brocade.com**

**Trading symbol:** BRCD

**Profiled:** Sept. 13

**Business:** Fibre Channel switches for storage-area networks (SAN)

**Chances:**

The storage business, especially Fibre Channel SAN technology, couldn’t be hotter. Brocade just had a 2-for-1 stock split and is still climbing the charts with a good quarterly report. The company has broadened its supplier base with three new manufacturers, EMC Corp., Clariion, NEC Corp. and Silicon Graphics Inc., and added a longtime Ancor customer, Hitachi Data Systems, to its ranks. Brocade is adding entry-level SANs to its mix. The company introduced SilkWorm 20x0 switches as an alternative to managed hubs.
BUT... The rising popularity of Fibre Channel and better interoperability will continue to weaken Brocade's overwhelming market dominance. Brocade remains a strong player—but attention-worthy competitors abound. Intel just invested $44.8 million in rival Ancor Communications Inc. for development of a new line of InfiniBand server clustering switches that will pair well with its Fibre Channel offerings. — Cynthia Morgan

Cha Technologies
www.1clickcharge.com
Trading Symbol: CMGI
Profiled: July 26
Business: Electronic payments systems
Chances: #
Cha Technologies, acquired by Internet megasolidator CMGI Inc. in September, which quickly moved to incorporate Cha's 1ClickCharge into the payment systems of its many subsidiaries and partner companies. CMGI has also given Cha a strong kick in the business development ring in a hot new partnership negotiation.

BUT... Though everybody agrees that micropayments are the future for small Web-based transactions, the entire genre continues to struggle with customer acceptance. Pioneer First Virtual Holdings and Digicash Inc. are gone, and MasterCard Mendex is struggling. (To learn more, see "Big Business: Electronic payments systems"

DataSage, an electronic-marketing analysis vendor, has grown enormously. The company posted a 1,000% growth rate in its last quarter sales. A key deal with Web commerce developer OpenMarket Inc. to add its NetCus-形容 does more business among major net-work service providers than rival Narus Inc.

BUT... Narus shares many XACCCT partnerships and has one that XACCCT doesn't: a close alliance with Sun Microsystems Inc. and Nenscape Communications Corp. Plus, the August debut of HP's Smart Internet Usage Version 2.0 proved that HP could pack a powerful punch in IP usage management.

— Cynthia Morgan

LOADING...
Web Personalization

Types of Web Personalization Approaches

<table>
<thead>
<tr>
<th>Types</th>
<th>WHAT IT DOES</th>
<th>VENDORS/EXAMPLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cookies</td>
<td>A tag on the Web browser identifies the user to the Web site.</td>
<td>Yahoo Inc.'s My Yahoo pages</td>
</tr>
<tr>
<td>Check-box personalization</td>
<td>User checks interests on a checklist so the site can present the proper information. This is a user-controlled process.</td>
<td>Site-specific</td>
</tr>
<tr>
<td>Collaborative-filtering software</td>
<td>Tracks user behavior and compares it with that of others who have visited the site.</td>
<td>Net Perceptions Inc.</td>
</tr>
<tr>
<td>Rule-based systems</td>
<td>Use business rules to deliver certain types of information based on a user's profile, dividing users into segments based on these rules.</td>
<td>Broadvision Inc.</td>
</tr>
</tbody>
</table>

DEFINITION:
Web personalization involves tailoring Web content directly to a specific user. This can be accomplished by having the user provide information to the Web site directly, or through tracking of the user's behavior on the site. The software on the site then can modify the content to the user's needs.

Corporate information technology professionals may find that Web personalization cuts the time it takes to purchase IT equipment because vendors' Web sites may already be tailored to their needs, says Laurie Windham, CEO of Cognitive Inc., a consultancy in San Francisco. "Customers can order whenever they want, and they have more control over how the relationship with their vendor works," she says.

Locke and Windham say they expect to see more advanced technology like neural networks helping e-commerce sites learn even more about their customers' behaviors. And sites are creating whole new ways for users to share and gain information, says Locke. Amazon.com, for example, offers "purchase circles" where users with similar tastes can hook up and discuss books and music they like.

Think privacy concerns will be a problem very long because companies that abuse user information won't see long-term success — word travels fast on the Internet about these types of practices. "The larger issue is, what will convince people to put up with and voluntarily engage in Web personalization is going to be the value they receive back for the information they provide," Locke says.

In the future, observers like Locke and Windham say they expect to see more advanced technology like neural networks helping e-commerce sites learn even more about their customers' behaviors.

Web Resources
The following Web sites provide additional resources for further review of a Web personalization technology:

Accelerating 1 To 1 (http://www.accelerating.com): This site includes articles on Web personalization issues like privacy and offers reviews of Web personalization software.

Personalize.com (http://www.personalize.com): A Web site chock-full of articles and opinions on the various types of Web personalization approaches and the issues facing the use of the technology.


The Unofficial Cookie FAQ (http://cookiecentral.com/faq/). A good resource for learning more about Internet cookies, what they do and how they do it.

— Tim Ouellette

Web Resources

Are there technologies or issues you would like to learn about in QuickStudy? Please send your ideas to quickstudy@computerworld.com.
Kevin Paugh sets lofty goals. Besides seeking a more efficient IT infrastructure framework, he resolved that Advantage Sales and Marketing would provide the best customer service in the food brokerage industry, manage information access effectively and securely, and ultimately realize profound competitive advantage. DataChannel’s XML-based Enterprise Information Portal helped him meet, and exceed, those goals. And thanks to the functionality that only XML and the experts at DataChannel can provide, Advantage Sales and Marketing didn’t have to redesign their IT infrastructure to do it. "It’s all about getting the right information to the right person at the right time. That’s our key competitive advantage. That’s what we gained by working with DataChannel."

"When clients from around the globe can access a personalized, secure, e-business interface with the right information they need to be successful, that’s a competitive advantage."

Visit www.datachannel.com or call 1-888-503-8786 for more details.
We go on-site to find out how well online retailers learned from last year's mistakes
By Mathew Schwartz

This year, his company is checking credit asynchronously.

In Tulsa, Okla., at BuyItNow.com LLC, an online retailer with 14 online stores selling everything from jewelry to electronics, Vice President of Organizational Development John Meek has a wish: to find an Internet service provider that can give his firm better service and strengthen the network his call center people rely on to input orders. Just northwest, at online toy retailer KBkids.com in Denver, founder and CEO Srikant Srinivasam got his present early this year: easier distribution. Previously, the company was a virtual store — it carried no inventory and used five different distribution sites to ship orders. "We found that when push comes to shove and you're looking at really high volumes, you don't have the same level of control over distribution," Srinivasam says. In May, the company outsourced fulfillment to Weehawken, N.J.-based Hanover Direct Inc. and finally had its two enterprise resource planning (ERP) systems integrated by September.

This holiday season, Computerworld examined the scaling efforts of these three popular online retailers — SmarterKids.com, BuyItNow.com and KBkids.com — to see how they have planned infrastructure changes to meet an onslaught of online holiday buying. At stake? The potential for incredible revenue, balanced by the imminent threat of systems failure, resulting in incredible loss of revenue.

During this holiday season, Jupiter Communications Inc. in New York forecasts that U.S. consumers will spend $6 billion online, making an average of 38,000 transactions per day at top sites in November and December, up from 20,000 per day last year. But the National Retail Federation has found that only 25.4% of unique users who surf a retail site ever buy something from it, which means 64.6% of site resources used
**TECHNOLOGY**

**MISSED CONNECTIONS**

Computerworld writer Mathew Schwartz spent 24 hours in the Tulsa, Okla., offices of electronic retailer BuyItNow.com LLC.

**Wednesday, Dec. 1**

Riding south on State Highway 169, I crest a hill — a small one; this is prairie country — and turn off into a small shopping plaza. Next to Johnny’s Deli, a small collection of signs includes the name BuyItNow.com.

3:16 P.M. I shake hands with Randy Jo Wilcox, co-founder, president, chief operating officer and an enthusiastic, energetic and technologically savvy presence. When she founded the company, she coded Web pages and wrote SQL queries. Today’s her birthday, and the office is filled with cards. “It’s good to be Queen,” one reads.

3:30 P.M. I meet John Meek, vice president of organizational development. Meek is in charge of the integrated voice response (IVR) system. Like many online retailers, BuyItNow.com has a toll-free number and a staff of “e-reps” to answer questions and take orders. Unlike older IVR systems, Meek says, his can be reprogrammed in about four hours.

4 P.M. Radio shrink Dr. Laura Schlessinger has promised to plug BuyItNow.com’s toy drive that night on The Tonight Show with Jay Leno, so right traffic is liable to be heavy. Meek begins to reprogram the IVR to cope.

**Thursday, Dec. 2**

6 P.M. BuyItNow.com’s chairman of the board needs a product for DJ Rick Dees at KRES-FM in Los Angeles. On Thursday, Dees will plug the product on the “Dees Deal of the Day” segment of his show. Wilcox lines up a diamond-stud-earring supplier in 30 minutes.

7:30 P.M. The Internet connection dies. Leno pulls in 13.9 million viewers on a Wednesday night, and it shows. After Schlessinger’s plug, the phones light up.

11:30 P.M. Leno pulls in 13.9 million viewers on a Wednesday night, and it shows. After Schlessinger’s plug, the phones light up.

**Friday, Dec. 3**

Cable & Wireless PLC and co-located at PSINet Inc. by a PSINet subsidiary, Rocky Mountain Internet in Denver. So information systems director Mark Koopmans and his team scream all the way to the top, to ioNet’s CIO. Koopmans threatens to sue. A meeting with the ioNet CEO is scheduled.

12:30 A.M. Wilcox updates the site to include information for the Rick Dees earrings. Site indexing is done off-line until the Internet connection resumes.

7:45 P.M. What’s needed now are warm bodies to man the phones and process orders. Wilcox dashes through the 30,000-sq.-ft. office. “Calling all e-reps!” she yells. Former e-reps now working in IT or operations are recalled.

8:30 P.M. Still no Internet service. Wilcox goes home and logs in through her home EarthLink Network Inc. account, using her laptop’s modem. She’ll keep in touch with IT via cell phone for the rest of the night.

9:45 P.M. It pays to monitor: IT determines that a faulty router brought down the Internet connection. But that touches off a frustrating round of back-passing; the router is co-owned by Cable & Wireless PLC and co-located at PSINet Inc. by a PSINet subsidiary, Rocky Mountain Internet in Denver. So information systems director Mark Koopmans and his team scream all the way to the top, to ioNet’s CIO. Koopmans threatens to sue. A meeting with the ioNet CEO is scheduled.

11:30 P.M. Leno pulls in 13.9 million viewers on a Wednesday night, and it shows. After Schlessinger’s plug, the phones light up.

**CW on-site**

**Thursday, Dec. 2**

12:30 A.M. Wilcox updates the site to include information for the Rick Dees earrings. Site indexing is through for the day — it automatically kicked in at midnight — so an IT person will have to update the index manually. The first few don’t answer their company-provided cell phones. Wilcox fumes; they’re supposed to be available 24 hours per day. “Pick up or you won’t have a job tomorrow!” she jokes on their voice mail. Someone finally answers.

3:30 A.M. The e-reps go home three hours later than usual, but they’ve caught up on their personal purchases.

**Friday, Dec. 3**

4:05 P.M. Toy donation instructions are confusing customers, so operations manager Melissa Meek and dataphysician director Teresa Miles huddle in Miles’ office to fix the situation. “I don’t think they meant to send DVDs to the kids,” Miles says. Problem solved, but customers must now log out to get a discount on personal purchases.

4:35 P.M. The faulty router has finally been fixed. While network degradation persists, at least the staff can use their computers.

8 P.M. I head to the airport. BuyItNow.com’s executives are finally heading home.

-Mathew Schwartz
Surviving E-Christmas

Continued from page 63

Site Server Commerce Edition. But because of scalability concerns and a burgeoning data load, Secor is considering a switch to Dracoi. KBkids.com also went more out of the box. The company uses Sun 4500 and 6500 enterprise systems, along with Oracle8i and 6500 enterprise system from Delray Beach, Fla.-based Smith-Gardner & Associates Inc. It's an unconventional choice; the tool is mostly used by large catalog retail companies.

"What attracted us to the system was the fact that it could handle large volumes [and] had very good customer service applications built in, as well as the financials to keep track of where the money was going," says Srinivasan. He also hired a Smith-Gardner programer who had maintained the system in a 200,000-orders-per-day environment.

Analyze This

Taking into account last year's mistakes, retailers this year started preparing early to make sure their sites could scale to meet the holiday shopping fever. As Jupiter analyst David Schatsky noted, risk management dictated that all infrastructure enhancements had to be done by November to reduce the time to market and by looking at those and setting up alarms with their service, I'll know where we're having problems.

RICH SECOR, VICE PRESIDENT AND CIO, SMARTERKIDS.COM INC.

Site Scalability in 7 Steps

With so many variables, how do you know when to upgrade your servers, routers or processors? Faced with this daunting task, Smartekids.com CIO Rich Secor developed a formula for knowing which systems to upgrade at the Web site, and when. Though he wouldn't give us trade secrets, he did reduce his secret formula into some general steps that any scalability-seeking Web site company can follow:

1. Take a revenue forecast for the Web site and break it down into different performance periods.
2. Predict future dollars per order by projecting from historical dollars per orders.
3. Determine projected site visitors per performance period by dividing each period's financial forecast by projected dollars per order.
4. Next, predict peak activity in much shorter-term periods. Analyze many order rates over very short-term intervals and derive a statistical bias to apply to projected site visitors.
5. Obtain page loads per visit, bytes transferred per visit and other Web site statistics from a good site analysis tool. Use these criteria to refine your scaling model.
6. Calculate the size of network you need by dividing each period's financial forecast by projected dollars per order. Web site from different global locations. "I can see every 15 minutes what our page load times are around the world, and by looking at those and setting up alarms with their service, I'll know where we're having problems."

SITE SURVEILLANCE is also useful for detecting whether someone has broken into the site or if some element of a Web page won't load. For that, SmarterKids.com uses e-Monitor from RSW Software Inc. in Boston and Enterprise Monitor from MediaHouse Software Inc. in Hull, Quebec. Both pieces of software continuously monitor the Web address and notify the company if anything has been changed or won't load.

To ease content distribution, Smartekids.com also opted for content distribution services from Akamai Technologies Inc. in Cambridge, Mass. Akamai caches Web pages in its global servers to speed down load of graphics-intensive sites. Though only half-done with the implementation, SmarterKids.com tests show that consumer download times for its site have been reduced by up to 50%.

All the monitoring in the world won't help if an earthquake eats your data center, so all three companies co-locate their data servers. The thinking behind co-location is simple: Besides more effectively load-balancing your network, if the server in San Francisco goes down, the one in Washington can cover.

The Fulfillment Nightmare

Don't forget distribution: According to Stamford, Conn.-based Gartner Group Inc. and Cambridge, Mass.-based Forrester Research Inc., it's the single biggest point of failure in e-commerce. The best-scaling Web sites in the world are useless if they run out of inventory or if their goods can't get delivered. BuyItNow.com carries virtually no
IT PAYS TO BE PREPARED

Editor Cynthia Morgan finds that at SmarterKids.com, redundant redundancies mean a good night's sleep.

DEC 3

No pillow talk last night for CIO Richard Secor and his SmartercKids.com Internet engineers. They sleep with Motorola 1000 radio/mobile phones by their pillows. Despite record traffic, however, the phone's been quiet.

In a world where paranoia is part of the job description, Secor says the idea's planted in the brains of several thousand mischief-makers. Secor wants to slam the door on that particular party trick.

10:15 A.M. CIO David Blohm gets a status report from his operations vice president, Mark DeChambeau. So far the company's distribution system hasn't fallen over, but Blohm insists Albert Noyes, senior vice president for sales and marketing, to assemble a plan to help pack and ship. "Tell them," he adds quietly, "it's not an option."

10:50 A.M. Kristen Noyes and borrow his computer to order Christmas gifts from the SmarterKids.com Web site. It offers free shipping but then tries to charge me for it. "Wait a minute," orders Noyes, who calls the sales people. "The checkout screen's not defaulting to free shipping," he complains, and is assured it will be fixed. 'I'll be on the floor and promises me he'll be ready for Lunch No. 5 by close of business. He's jubilant the team has just about nailed a spontaneous-reset problem with some of the commerce servers."

The ever-present phone beeps. Down at co-located Exodus Communications, Grady has found a problem. "I'm going to have a little talk with the WebLine people," he radiates, "I've just finished with the server and it's wide open." Grady's just discovered that the Cisco Systems Inc. Web Line chat server, which will let customers reach customer service while online, might permit outsiders access to server files. "Shut it down and come on in," Secor declares.

2 P.M. Grady arrives, and the two head off for a meeting with the Oracle Corp. sales rep. I ask Grady what has become my signature question: "What's your worst nightmare?" "I don't have nightmares," he promptly responds. "That's Rick's job. He eyes the still-laden table. "Are those goos?" Secor sighs and hands him Lunch No. 3.

3:05 P.M. Shifts are changing at J.L. Hammert's warehouse, which has become a sort of home away from home for DeChambeau. I tell him I placed an order this morning. "It'll be on the floor by about 7 p.m. tonight," he promises.

5 P.M. The relationship with Hammert is a unique one; it's far closer than most third-party fulfillment arrangements I've seen with electronic retailers. Rich Holder, Hammert's president, says the SmarterKids partnership has worked out well. "They've taught us a lot about how to think like an Internet company. And we've taught them a lot about dealing with your suppliers and building a stable distribution system."

5:15 P.M. Paper order forms shoot from a massive IBM AS/400 setup crammed into Hammert's tiny information technology department. They've filled two carts with 18-inch stacks so far, the evening shift will work till midnight to get those orders on the truck. My order is one of them.

9:15 P.M. Back at home, I test the site again by placing another Christmas gift order for SmarterKids merchandise. This time, the order screen defaults to the correct shipping price. I don't see a ZIP code locator, but I suspect it will soon.
The Best in Ti

BY MARY BRANDEL

Throughout the year, Flashback has taken a look at the most important events in 50 years of computing. Now that we've reached the last year of the millennium, it's impossible to say what the next generation will see as the biggest events of 1999. Instead of venturing a guess, we asked some of the participants in the past 50 years in computing what they think.

Robert Metcalfe, who defined the general principles of Ethernet and founded 3Com Corp. in Santa Clara, Calif., said: "The FCC, especially Chairman William Kennard, stood up to the telephone local exchange carrier monopolies—members of the U.S. Telephone Association. He wouldn't let them tie AT&T's hands in deploying cable modems to compete with them. "He ruled that the telcos have to offer 'line sharing,' so that Internet access providers can work around the old local exchange monopoly. "As the deployment proceeds over the next 10 years, reaching most of America's 100 million subscriber lines, thereby accelerating the deployment of digital subscriber lines, thereby accelerating the deployment of high-speed, always-on residential Internet access. "As the deployment proceeds over the next 10 years, reaching most of America's 100 million subscriber lines, the industry will have to do quite a lot different. New kinds of computers will emerge, like Dell's new Web computer. "New operating systems will also arrive—not personal ones like Windows 2000, but network operating systems. We will also see new applications that exploit high-speed and/or always-on capabilities." Gordon Bell, inventor of Digital Equipment Corp.'s VAX machine and currently senior researcher at Microsoft Corp., said: "It's not so much the dawn of the post-PC era—because PCs are not going away. We are really entering the PC-plus era. "Over the next three to five years we will see Internet appliances become mainstream products."

Waldy Mougaard, the author of Opening Digital Markets and a consultant and lecturer on the impact of electronic markets on business:

"1999 will be known as the year that business-to-business applications on the World Wide Web showed real signs of staying power. Its largest segment—electronic procurement—allowed companies such as Ariba, Commerce One, PurchasePro, Chemdex, Part-Miner and HealthTyp to shine. "Most of these companies approach their solutions as e-hosted applications on the Web. The long-term impact is that hosted applications or 'rent-an-app' will relieve IT departments from the burden of applications development."

Tom Van Wech, a junior member of the team that created the Compatible Time-Sharing System, the first demonstration of computer time-sharing, in 1965: "1999 will be remembered as the year when the Internet finally happened for nonenthusiasts. Having an [email] address became unremarkable, URLs appeared on TV ads, billboards and print advertising, and millions bought things online. A second gold rush developed around electronic commerce, and millions were paid for domain names."

Barry L. Bayus, professor of marketing, Kenan-Flagler Business School, University of North Carolina at Chapel Hill: "The most profound event in 1999 was the official recognition by the U.S. Patent Office that business models [and software] can be protected via a patent. The two key decisions around the Priceline.com and Amazon.com patents. "The implication for the future is that companies are now actively trying to own a piece of the general Internet real estate. Historical analogies with the radio industry [and the war among competitors over rights and ownership of the airwaves] suggest that a lot of energy and money will be poured into fierce patent battles in the courts over interpretation of the patents, ownership rights and ultimate control. In the radio industry, dominoic and international governments had to eventually mediate and set the rules."

Brandel is a frequent contributor to Computerworld. Contact her at marybrandel@norfolk-county.com.
The Electronic Apple

New York is embracing e-commerce with a passion. Start-ups are taking over Manhattan, and IT professionals stand to reap huge rewards

By Christine Willard

Mayor Rudolph Giuliani's administration supports these new ventures with programs that have already pumped millions of dollars into attracting and supporting high-tech businesses. For example, Digital NYC: Wired to the World is a city-sponsored program that provides matching funds for marketing opportunities—jobs and start-ups—in high-tech districts.

New York is embracing e-commerce and online trading. "The Electronic Apple" is a city-sponsored program that provides matching funds for marketing opportunities—jobs and start-ups—in high-tech districts.

Start-ups are causing a brain drain from larger corporations quickly outgrowing their physical surroundings and staff capabilities. "It's like a different company," says Kendra Brandrup, an IT recruiter at the Federal Reserve. "You're spoiled for choice," Keogan says. It's the brainchild of Oprah Winfrey and Geraldine Laybourne, Nickelodeon Network Inc.'s genius, among others.

Stiff Competition

Robin Wynn, assistant vice president for technology and staffing manager at The Chase Manhattan Corp., slots in the new competitive marketplace. "That's what makes New York a good place to work," Wynn says. Competition for IT professionals keeps salaries and benefits great—but competition among candidates for desirable jobs brings her strong applicants.

Looking for skills to fuel e-commerce and Internet solutions, Wynn is facing stiff competition for professionals with Java, Visual Basic, Sybase, Oracle, Unix and C++ skills; programmer/analysts who have experience in the full project life cycle; and developers and systems administrators.

Chase Manhattan is willing to be flexible about work hours and allowing employees to work from home, but the banker's bottomed-down view won't change in the near future. That's the niche the Federal Reserve Bank recruits against in the New York market.

"It's a lifestyle decision," says Robin Wynn, director of corporate communications at Register.com. "It's creative and entrepreneurial. Everybody who works here just loves it."

That's the kind of cachet that fuels the competition to be cool enough to attract bright IT professionals to jobs in New York. And media companies have it. Oxygen Media Inc. in New York, an interactive women's Internet site, with a cable television channel starting in February, is "spoiled for choice," Keogan says. It's the brainchild of Oprah Winfrey and Geraldine Laybourne, Nickelodeon Network Inc.'s genius, among others.

Crowded conditions. What more could a New Yorker want? Well, they're just part of the offerings at new companies quickly outgrowing their physical surroundings and staff capabilities. "It's starting to look like a cramped newsroom in here," Keogan says wryly.

Willard is a freelance writer in Los Osos, Calif.

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SOURCE: COMPUTERWORLD'S 1999 ANNUAL SALARY SURVEY. PUBLISHED IN SEPTEMBER.

New York, New York. It's the mecca for business, the magnet for creativity. Anywhere else is just a place.

That's not just based on New Yorkers' famed ethnocentrism—current hiring projections indicate this vortex will continue to swirl. The city has even ousted California's Silicon Valley in Internet-related initial public offerings (IPO).

New-media and financial companies are especially hot for information technology professionals. The move to e-commerce and online trading requires more developers and systems talent, says Cliff Kahan, a director at the New York office of recruiting firm Pencom Systems Inc. Major banks and brokerages are offering help services for online activity.

In the new-media markets, a variety of segments are appearing, including content-driven Web sites, large firms with digital presences and small start-ups with unique business models. All of this translates to opportunities, especially for those who thrive in an intense work culture. "Make sure your skills allow for mobility" if you want to work in this market, Kahan advises.

Companies such as Register.com, the largest independent domain registrar on the Internet, attract high-energy talent with the excitement of creating a new business and the dream of cashing in big on stock options after an anticipated IPO.

"It's like a different company every two months," says Shonna Keogan, director of corporate communications at Register.com. "It's creative and entrepreneurial. Everybody who works here just loves it."

That's the kind of cachet that fuels the competition to be cool enough to attract bright IT professionals to jobs in New York. And media companies have it. Oxygen Media Inc. in New York, an interactive women's Internet site, with a cable television channel starting in February, is "spoiled for choice," Keogan says. It's the brainchild of Oprah Winfrey and Geraldine Laybourne, Nickelodeon Network Inc.'s genius, among others.

Long hours. Intense work. What more could a New Yorker want? Well, they're just part of the offerings at new companies quickly outgrowing their physical surroundings and staff capabilities. "It's starting to look like a cramped newsroom in here," Keogan says wryly.

Willard is a freelance writer in Los Osos, Calif.
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VA Linux IPO
Leads to Craze

BY KATHLEEN GHLSON

VA LINUX SYSTEMS Inc.'s stock debut followed the spiky pattern of other Linux offerings, though even downward spikes indicate that there's considerable investor interest in Linux.

The company's stock gained 700% in its first day of trading. But its ride—like other Linux initial public offerings (IPO)—came back to reality days later.

The wild run was partly due to the hype surrounding Linux and the relatively small number of shares available to trade, according to Irv DeGraw, senior research director at WorldFinanceNet.com in Sarasota, Fla.

The company's stock opened its first day of trading Dec. 9 at $30 and closed at $320. The price subsequently stabilized at around $180 last week.

Contenders

Other Linux players include the largest distributor of the operating system, Red Hat Inc. [Nasdaq:RHAT] in Raleigh, N.C., and Andover.Net Inc. [Nasdaq:ANDN] in Acton, Mass., which develops Web sites for the Linux and open-source software development communities.

Red Hat debuted in August at $54.50 and was at about $250 last week. Andover.Net also launched an IPO Dec. 9, opening at $77.50.

Jeff Hirschkorn, an analyst at New York-based IPO.com Inc., says Red Hat and other Linux-related stocks are all going through a tumultuous trading period now, but the overall market for Linux stocks is strong, he added.

In the long term, however, these companies may get squeezed out by the giant vendors such as Dell Computer Corp. [Nasdaq:DELL] that offer Linux on their own servers, says DeGraw.
Continued from page 1

Medical Errors

pitals to adopt a computer sys-
tem that would flag errors in
prescribing medication. The

Continued from page 1

Security

companies are expected to par-
ticipate, but some are express-
ing reservations.

"It's kind of a dicey issue, be-
cause there is a real lack of trust between industry and the
government," said Rick Holmes,
director of security and quality assurance at Union Pacific
Corp. in Omaha.

For instance, Holmes said, if
government research leads to a
new encryption algorithm with
a key-recovery mechanism, the
government may have access
to that mechanism, but "do we
know whether it does or not?"

Holmes also said there was
"a veiled threat through this
[meeting] about regulation" if
companies don't move to vol-
untarily improve security.

Publicly, government offi-
cials aren't saying that, and
ter the meeting, Commerce
Secretary William Daley is-
sued a statement saying that
the federal government "can-
not mandate a solution" to the
private sector.

But Holmes and others at the
meeting said the partnership
could play an important role.

"We have a need to act to-
gether to protect something
that we all use but that none of
us control on our own," said
Bruce Bonsall, director of in-
formation security at Massa-
chusetts Mutual Life Insurance
Co., an 8,000-employee firm in
Springfield, Mass.

Bonsall said he applauded
the effort, adding that govern-
ment and private industry need
a means to disseminate
threat information and share
best-protection practices. "For
the most part, corporate Amer-
ica just sits back, and we wait for
alerts to come down," he said.

The government could cor-
task force includes 32 of the
country's largest employers,
such as General Motors Corp.
in Detroit.

"What the [academy] has
done is make the problem
more visible to hospitals and
health insurance plans. The
probability of hospitals saying
to us, 'We think this is a won-
derful idea' has gone up be-
cause it's been brought out of the
bag," Milstein said.

Historically, when large em-
ployers have asked for quality
improvements, it's been "hard
to get hospitals to move," he
said.

Tom Smith, administrative
director for pharmacy and on-
cology at Moore Regional Hos-
pital in Pinehurst, N.C., said
he hopes drug manufacturers
will soon adopt a standard bar
code on their drug labels.

"I think with the national
initiative, the [Food and Drug
Administration] is going to
mandate that [all] drugs will
have to conform to a universal
bar code," Smith said. "Until
that happens, [drug manufac-
turers] won't do it."

Unlike the retail industry,
drug manufacturers have sev-
eral bar-code formats, which
have impeded providers' ef-
forts to implement handheld
device technology that could
scan and track which care giver admin-
isters a particular drug.

Capturing this information
electronically, rather than writ-
ing it on paper and later enter-
ing it into a clinical informa-
tion system, would dramatical-
ly reduce errors, Smith said.

His hospital already uses er-
or-reducing technology in the
form of Robot Rx, a centralized
system that automatically dis-
penses bar-coded medications
to drawers designated for each
patient.

An interface between Robot
Rx and the clinical information
system, both from San Francis-
cisco-based McKesson HBOC
Inc., captures drug-delivery in-
formation electronically. In the
five years the hospital has used
the robot, it hasn't made any
drug delivery errors, Smith said.

Michael Cohen, president of
the Institute for Safe Medica-
tion Practices in Huntingdon
Valley, Pa., said the health care
industry is just in the begin-
nings of stages of using handheld
devices and bar-code scanning
technology — which could re-
duce errors in administering
medication by as much as 85%.

The national dialogue could
boost health care industry
spending on IT projects that
can help reduce medical errors,
said Rick Allen, director of IT
at Wellstar Health System in
Atlanta.

"We knew we had to be there
anyway. But with the govern-
ment talking about those things, it
should help funding a bit because [hospital] CEOs
will see the stuff coming out of
Washington and want to be on the
front end of it," Allen said.

Wireless Market Open

Win CE, Palm vie for Net devices lead

BY DOMINIQUE DECKMYN

Despite Palm Computing
Inc.'s dominance in the wire-
less arena, the rapidly
changing wireless market is
now wide open, analysts say.

Just last week, Siemens AG
in Munich, Germany, and Ca-
rio Computer Co. in Japan
announced that they will jointly
develop, manufacture and
market a Windows CE-based
palm-size PC with wireless In-
ternet and voice capabilities.

And Swedish firm Ericsson
Inc. said earlier this month that
it will support Microsoft's
forthcoming Mobile Explorer
microbrowser.

However, Palm Computing
was first to market with its
wireless Palm VII and is quick-
ly gathering support from mo-
bile handset vendors. Palm
Computing, which has filed for
an initial public offering, has
evolved from a major player in
corporate support.

"Palm is indisputably in the
lead," said Alan Reiter, an analy-
ist at Wireless Solutions Inc.
in Lubbock, Texas, which has
just received investments from
three key players in the wire-
less and Internet space: Mo-
torola Inc., Nokia Corp. and
America Online Inc. are taking
majority stakes worth a com-
bined 4.5% in the company.

Motorola also signed a memo-
randum of understanding with
Palm to license the Palm OS
to future wireless devices.

"It will be a welcome addi-
tion to their strategy," said
Ericsson's Internet 
and Voice Platform.

The mobile handset manufac-
turers don't know which oper-
ating system is going to win,
and that's why you'll see a bur-
ry of partnerships in 2000 as
they explore their choices."

Tim Scannell, an analyst at
Mobile Insights Inc. in Quincy,
Mass., said Windows CE could
still dominate the wireless
market, because it will focus
on the applications and data-
synchronization needs of in-
formation technology depart-
ments in large corporations,
where Windows is already
dominate.

When engineers at CHR Sol-
utions Inc. in Lubbock, Texas,
visit customers, they carry a
Palm, a pager and sometimes a
laptop, too. "It would be great
if we could do everything with
a single [wireless] device," said
Cary Holmes, a systems design
and architect. He said that al-
though the company uses the
Palm as an organizer, he would
consider both the Palm VII and
the next-generation Windows
CE devices for wireless appli-
cations.

Quality Control

Technology initiatives to
reduce medical errors:

• By June, 172 VA hospitals
will use bar-coded labels,
attached to patients' wrists
and nurses' carts, which get
scanned when patients take
medication.

On Dec. 6, the American
Hospital Association partner-
ated with the Institute for
Safe Medication Practices to
assess best practices (including
technology initiatives) for
reducing medical errors.
"POKEMON," GRUMMBLED SANTA. "Pokemon, Pokemon — I'm sick of Pokemon. Who knew those little buggers would all need Y2K fixes?" With only days to go, elves were swarming through the workshop, furiously adjusting Pikachus and Jigglypuffs. Santa absently reached for a slice of cold pizza as he stared at the unfinished gift list for the IT industry.

"Coming through, big guy!" shouted an elf steering a cartload of Millennium Barbies and Harry Potter books past him. "Why so glum, boss? Aw, you didn't leave the geeks for last again, did you?"

Santa nodded. "What am I going to give Bill Gates? His kids are no problem — they'll play with the box anything comes in. But what do you get the world's richest guy?"

"How about a hacksaw?" said the elf, parking the cart.

Santa frowned. "You really think he'll do prison time?"

"Nah. But if he doesn't start chopping up Microsoft by himself, the Justice Department'll do it for him," the elf said. "Hey, and you could give Joel Klein a chain saw. Who else is giving you trouble?"

"Linus Torvalds," said Santa. "Nice kid, comes up this way, gives things away for free."

"Who needs a white beard and a red suit," the elf said. "Maybe he'll take the hint and you can retire. And is Steve Jobs on the list? After that made-for-TV movie Pirates of Silicon Valley, you could offer him a new gig as Noah Wylie's stunt double on ERI if he ever gets tired of being Apple's permanent interim CEO."

Santa nodded. "What about Scott McNealy?" he said.

"How about a spare hockey stick to fend off the hordes of angry open-source Java programmers from Blackdown.org?" said the elf. "They did all the work of porting Java to Linux, and McNealy didn't even notice. Oh, and give another hockey stick to the new babe in charge at HP, Carly Fiorina. If she's gonna do battle with McNealy, she'll need it."

"Babe" is not politically correct," scolded Santa.

"Neither is Barbie," said the elf. "Besides, she is a babe, even if Fortune magazine says she's the most powerful woman in American business. And, say, how about those kids at AOL who out-hacked Microsoft in the instant-messaging war? We've got a crate of Twinkies, Jolt and Snickers bars we can use as stocking stuffers. And for eMachines, the cheap-PC maker that got sued by both Compaq and Apple, we can drop off a copy of the next Bill Gates book, Business @ the Speed of Litigation."

"Which reminds me," said Santa. "Amazon.com. And eBay."

"Give Amazon an 1899 Sears, Roebuck catalog — it looks like Jeff Bezos is reinventing his company as the world's biggest mail-order outfit, which is what Sears was around 1900. Hey, maybe that's how he's dodging his Y2K problems," said the elf. "And all eBay needs is a couple of spare kidneys, a few babies to sell and a room full of third-graders to bid millions for'em."

"I think you need a long vacation starting Dec. 26," said Santa. "Just for fun, you can give the virus writers and spammers each other's e-mail addresses," the elf said. "And give the Y2K kooks a perpetual calendar — they keep slip-sliding their estimates of when the panic and catastrophe will start happening."

"What about the Y2K heroes?" asked Santa. "All the ones who are fixing bugs, quashing rumors, making constructive plans, and getting people together?"

The elf scratched his jaw. "I don't think there's anything we can get for them," he said.

"There's too many of 'em. But they oughtta have something."

"Never mind," Santa said. "They're already giving themselves the perfect gift — a Y2K that's a nonevent."

Hayes, Computerworld's staff columnist, still believes in the sanity clause — even after covering IT for the past 20 years. His e-mail address is frank_hayes@computerworld.com.
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