**BAD NEWS**

**Users Cry Foul**

The software industry is steamrolling user interests as lawyers draft a Uniform Commercial Code revision covering the sale and use of software, according to an in-depth report by Computerworld senior editor Kathleen Melymuka. For example, the latest draft would make shrink-wrap end users electronic commerce a form of electronic commerce. According to Dan Garofalos, an analyst at Meta Group, who is a supporter of independent verification.

**Microsoft Concedes Problem Is Significant; Vows to Build Upgrade Path to Win 2000**

**By Sharron Gaudin**

Microsoft is trying to build a migration path for users moving from Windows 95 to Windows 2000. Beilinson said the company is taking a two-pronged approach, working on several improvements to existing utilities in Beta 2 and creating some completely new tools.

But to really ease the upgrade pain, Microsoft is working on the problem of migrating applications.

"We have to figure out a way to bring your applications forward," he said. "If I install Windows 2000, and then I install Office or Notes or Word, that should work fine. But if I'm first on 95 and I've got my apps installed and then I upgrade to Windows 2000 on top of that, we're in a different place now. The application is already installed, so it doesn't know it's running on NT and has to run Beta 3, page 52"
Where is it written that performance and price can’t coexist?
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**N E W S**

**AT DEADLINE**

**Salaries on Hold**

Despite industrywide pay increases, salaries for technical support staff have barely budged in more than two years, according to a recent survey of 201 companies by the newsletter "Softletter" (www.softletter.com) and the Association of Support Professionals, both in Watertown, Mass. Support technicians' pay is holding steady at an average of $32,000.

**NEC Reorg Means 15,000 Job Cuts**

NEC Corp. plans to cut 15,000 jobs worldwide as part of a three-year reorganization. The Tokyo-based PC and chip maker has suffered deep financial losses worsened by Japan's recession. First up for reorganization is NEC's troubled PC unit, including its flagship U.S. unit, Packard Bell NEC, officials said.

NEC expects the PC unit to experience a sales dip of up to 17% and to lose up to $70 million.

**Blame the Mainframe**

Online stock traders suffered another hit last week when The Charles Schwab Corp. system suffered a midday, 10- to 15-minute outage. Officials at the San Francisco company said the glitch wasn't caused by heavy trading volume but was the result of a temporary mainframe malfunction.

**Short Takes**

SUN MICROSYSTEMS Inc. posted its Java 2 source code for download on its Web site (www.sun.com/software/communitysource/java2). . . . ACQUIURY CORP. in Austin, Texas, said it will sell its popular iChat messaging product line to KODZ.COM INC. in Atlanta, a developer of online communities. . . . Web-hosting company VERO INC. last week said it will use NETSCAPE COMMUNICATIONS CORP.'s messaging platform as the backbone for its typical sales force automation (SFA) solutions. . . . SPRINT CORP. and E-mail outsourcer CRITICAL PATH INC. expect to announce a bundling deal next week in which Sprint's IP SERVICES GROUP will offer an outsourced E-mail package to small and midsize businesses.

**ENERGY BARGES TO INSTALL R/3**

$5.5B energy firm uses in-house strategy, teams for corporate rollout

**BY CRAIG STEDMAN**

V**a**lero Energy Corp. had to move fast to install SAP R/3 at its corporate offices and five petroleum refineries.

The key to the whole project to be completed next week — was the way the company organized itself to quickly roll out the software while making massive business changes.

The $5.5 billion company gave its project team just six months to develop common business processes and start going live with R/3, SAP AG's suite of enterprise resource planning (ERP) applications.

But it also gave team members "the authority to make decisions on how the company was going to operate in the future," said Hal Zesch, Valero's SAP coordinator. Zesch then asked the company's department heads to head over to the employees who could best make those kinds of decisions.

Many ERP users have said successful installations usually depend far more on how companies prepare themselves to use the software than on the technology itself (C&W, Jan. 18).

For Valero, urgent business needs added to that challenge.

**Behind the Scenes**

Valero was in a hurry for several reasons. Acquisitions had thrown together refineries with incompatible, homegrown systems. The San Antonio-based company's central mainframe was sold off with its natural-gas business in early 1997. Valero leased back processing space on the mainframe, but year 2000 problems were expected to start kicking in this year on some applications.

To help speed up the R/3 rollout, which began in late 1997 and is scheduled to reach the final refinery in New Jersey next week, Valero followed a set of rapid-deployment guidelines developed by SAP.

But Zesch said getting the right employees assigned to the project was the most crucial piece of the company's strategy for bringing its business units together on such a tight schedule.

For example, he said, Valero had to create a common set of names for the 65,000 components and materials used in its refineries. Each plant previously had its own naming and data formats, which made it nearly impossible to pass information among systems.

Zesch was looking for work-ers already understood how business transactions flowed through Valero's operations. "Within any company, there's a limited number of people who know that kind of thing," he said. "And we didn't have time for them to learn it."

Included among the dozen business users asked to test the refinery rollout were two of Valero's four warehouse supervisors and two of its top purchasing managers. The employees managed the installation themselves and brought in consultants from SAP to augment their knowledge of R/3.

The first refinery went live with R/3 on schedule, and three more plants plus Valero's corporate offices were added last year — allowing it to get off the ground, replacing old code was the company's year 2000 answer to fix that sales system, Sohl said. "A year ago, we were a poster child for how not to do Y2K," he said.

The fix carries business benefits as well. Sales force automation software and other emerging customer-relationship management technologies have the potential to improve the effectiveness of sales and marketing workers by automating manual tasks and giving workers better access to corporate data, said Steve Bonadio, an analyst at Hurwitz Group Inc. in Framingham, Mass.

"But most companies are still taking their baby steps into this arena," Bonadio said. Delta's purchase isn't the largest sales force automation deal that has come along, he added, "but you don't see these kinds of things every day."

Other steps Delta is taking in its IT project include adding capacity to its core NCR Corp. Teradata database, updating Oracle-based data marts and adding new desktops and servers from Hewlett-Packard Co., Sohl said.

Baan said it has signed larger deals for BaanFrontOffice software, but Delta's installation will be much larger than Baan's typical sales force automation sale of 300 to 600 end users.
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Schwab Simplifies Web Trade Architecture

Goal to avoid outages, ease management

BY CAROL SLIWA

Skyrocketing growth is pushing Charles Schwab & Co. to simplify the architecture of its online trading application to reduce the chance of outages and to ease systems management tasks.

Customers will take a more direct route, with fewer network hops, from Web browsers to the San Francisco broker's clustered IBM and Hitachi mainframes — the big iron that anchors its business.

Schwab is seriously considering eliminating its Unix-based IBM CICS middleware tier and possibly even shifting its Web servers to the mainframe for its online trading application, officials said.

Analysts said that tack represents a marked departure from the more common multilayer approach, which includes Web browsers, Web servers, middleware and back-end databases. Companies see the server-heavy, multilayer tack as an easy way to build, manage and change the individual application components.

But in the high-volume, high-transaction world of online trading, companies have been scurrying to find better ways to ensure that their sites don't suffer outages such as the one that plagued ETrade Group Inc. for less than two hours over three days earlier this month.

Schwab's approach may not be the optimal choice for every high-volume site, said David Foyer, president of IT Impact, a market research consultancy in Mountain View, Calif.

Whether a company should consider that strategy depends on a wide range of factors, including the number of users, response time requirements, business processes involved and volume of transactions.

"Banking and online trading systems are a classic example of where you would expect to be pushing the envelope," Foyer said.

Schwab's online trades have soared from an average of 93,000 per day in the fourth quarter of last year to 85,000 per day in January, according to statistics released last week. With its 2.2 million accounts, Schwab is tops among online brokers, according to Concord, Mass.-based Gomez Advisors Inc.

"We have a large user base that expects full functionality 24-by-7 with no excuses," said Lisa Villarreal, senior vice president at Schwab's data access service group. "It's not cheap, and it's not easy."

When Schwab originally built its online trading site, IBM's CICS 6000 middleware — running on a configuration of close to 200 IBM AS/400 boxes — was a fundamental piece of the puzzle.

It helped direct traffic and manage sessions. Even more critically, the CICS middleware was essential to do the TCP/IP-to-SNA protocol conversion that enabled Web browsers to talk to the mainframe cluster.

But the company is seriously considering shifting those functions to a new version of IBM's OS/390 mainframe operating system. Version 2.6 makes the TCP/IP stack much faster, and it would let Schwab scrap the CICS software running on the AIX. The company would then run CICS on the mainframe only.

Another key factor enabling simplification is the IBM Parallel Sysplex environment, which lets Schwab's five mainframes link together and act as one huge machine that submits queries against its DB2 database engine.

FORD TURNS TO DELL TO STANDARDIZE DESKTOP

IBM to be replaced as server provider

BY BOB WALLACE

Looking to tighten the vise on computing costs, Ford Motor Co. last week signed one of the largest desktop computer contracts ever with Dell Computer Corp.

In a joint release, Dell and Ford said the deal, which has an estimated value of at least $20 million to $50 million, will lead to significant total-cost-of-ownership savings (see related story at right).

"We based our decision on three criteria: product, service and price," a Ford spokesman said. "Our belief is that by buying and deploying common, high-quality hardware, we can minimize the cost of support and lower our overall total cost of ownership."

"They can expect to save 15% to 20% annually over going with diverse models," agreed Rob Enderle, an analyst at Giga Information Group Inc. in Cambridge, Mass. "It's hard enough to standardize on one vendor. Every aspect of support will become much easier this way."

The contract actually is an extension of an existing arrangement in which Dell provided Ford and all its divisions except Mazda Motor Corp. with PCs and laptop computers. Ford and Dell wouldn't divulge the number of units or the contract value.

But the change under the new contract is that Dell is wresting Ford's server business away from IBM and expanding its reach into the automaker with new business at Mazda.

Just a few years ago, IBM was Ford's primary provider. But it has since lost Ford's PC and laptop business and now is losing its server business as well, according to a Dell spokesperson.

Industry experts lauded Ford's decision to standardize on one PC laptop model, Dell's OptiPlex GX1, which will be equipped with common hardware, software and Ford applications for use around the world.

A contractor working with Ford's information technology group who asked not to be named said deploying the equipment worldwide was a big factor in the decision to go with Dell. "A big part of it is in installation," the source said.

"Ford's a global company and it's thinking beyond Michigan to South America, South Africa and New Zealand."

That may surprise some, because Ford cut a five-year, $300 million deal with IBM Global Services last month to help handle application development. IBM Global Services and IBM's PC server unit both declined to comment.

Pact Lays Out Five Roads to Savings

Under a huge pact signed last week with Dell, Ford said it expects to reduce significant costs in total-cost-of-ownership costs in several areas.

According to Dell, those savings will come in the following ways:

Hardware: Large-scale purchases will result in lower prices.

Software: Support effort will be greatly reduced, and enterprise software licensing will result in less ad hoc procurement and lower costs.

Service: Remote software con-

fuguralion will replace manual work and reduce mean time to repair and lower service infrastructure, officials said.

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JBusiness App to Integrate With NetDynamics

BY CAROL SLIWA

Novera Software Inc. today will announce that its JBusiness application servers will be integrated to work with Sun Microsystems Inc.'s NetDynamics application server.

When a company selects an application server, it typically has been locked in to that product's environment for any applications written to work with that server.

Atlanta-based Home Depot Inc., which was using both the Novera and NetDynamics products for different applications, now can exploit the strengths of each application server environment.

Home Depot found NetDynamics' product good for building Web pages dynamically, and Novera was helpful for building distributed business objects that pull information out of relational databases, said Curtis Chambers, manager of distributed application architecture.

Novera in April plans to release a version of its JBusiness 4 application server that will let business objects written with its tools work with NetDynamics' application server and studio environment.
Oracle Express analyzes 50 times more data than Hyperion Essbase.

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<th>Data Density</th>
<th>Query Execution Time</th>
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<tr>
<td><strong>Oracle Express 6.1</strong></td>
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<tr>
<td><strong>Hyperion Essbase 5</strong></td>
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In a recent industry standard OLAP council benchmark, Oracle Express ran 250,000 queries against a data density of 5.0 and delivered an average response time of 0.07045 seconds. That's 50 times more data than the previous record.

With a data density of 0.1, Oracle Express was 34% faster than the previous record. Oracle Express offers unparalleled scalability against the largest volumes of data. What's more, Oracle Express, combined with Oracle Discoverer and Oracle Reports, delivers an integrated business intelligence solution, from reporting to ad hoc query and advanced analysis. When you want fast answers to hard questions, Express finds them—no matter how much data you have. Call us at 1-800-633-0510, ext. 18200, or visit us on the Web at www.oracle.com/info24 today.

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Microsoft cleared to brew its own Java; users say thanks, but the original is fine

BY DAVID ORENSTEIN
AND CAROL SILIVA

MICROSOFT last week regained some legal footing to develop its own Java technology, and some partners said Microsoft is pondering Java-like improvements to its Visual C++ tool.

But users said they are skeptical the company can build a better Java than the Sun Microsystems Inc. original.

Late last week, Judge Ronald Whyte ruled that an earlier injunction against Microsoft doesn't prevent the company from developing a version of Java free of any of Sun's code. Whyte is presiding over Sun's lawsuit against Microsoft in U.S. District Court in San Jose, Calif. (see story at right).

That November 1998 injunction said it was likely that Microsoft was violating Sun's copyright with unauthorized alterations of the Java language using Sun's code.

Before last week, Microsoft already had begun to talk with some of its technology partners and customers about a potential new language, code-named "Cool," that would be derived from C++ but would incorporate many Java-like productivity enhancements.

Among the possible improvements: eliminating memory leaks and some pointers, which programmers find difficult, and developing applets that can run in Internet browsers.

"They've learned a lot from Java," said an executive at a partner company that has been briefed about Cool. Another developer at a partner company added, "I think the idea is: 'Let's make a language that is similar.'"

Microsoft officials publicly asserted that Cool has little to do with Java and is instead based on making C++ a more productive language.

Corporate developers said they would welcome improvements to existing Microsoft tools such as C++, but many were skeptical that the benefits of a new Java-like language would be sufficient to make the switch worthwhile.

"Who needs another language?" asked Keith E. Carpenter, a vice president of client access systems at The Chase Manhattan Bank Corp. in New York. "Java does a good job of improving on C++ already," he said, and any language Microsoft develops will probably work only with Windows. "I'm not interested in it at all," he said.

Curtis Chambers, manager of distributed-architecture development at Home Depot Inc. in Atlanta, agreed. "I think the last thing we need to do is come out with another language," he said. "The advantage of Java — and what scares Microsoft — is multiphormate.

"Let's face it, a Microsoft development tools product manager, last week acknowledged that the company has discussed a technology termed Cool. But he declined to describe any specifics. Last October, at its Professional Developers Conference, Microsoft demonstrated a possible aspect of Cool: language extensions to C++ that would make accessing COM++ — an enhancement of Component Object Model — services easier.

Risse said part of Cool's mission would be to improve existing development tools, not necessarily develop a whole new language. Risse and Microsoft group program manager Charles Fitzgerald insisted that Cool has nothing to do with the Java lawsuit.

There are still differences of opinion within Microsoft about what direction Cool ultimately should take, Risse also acknowledged. "We scrub ideas," he said. "It's a process of review and analysis."

Analyst Larry Perlstein at Dataquest in San Jose said Microsoft probably isn't working on a whole new language to replace Java or C++.

What's more likely, he said, is that Cool is part of the natural upgrade path for C++, which represents a shrinking but still very lucrative market for vendors such as Microsoft.

Any new Microsoft language would have a ways to go to catch up to Java technologically and in terms of market appeal, added Shawn Myron, a financial systems analyst at BC Tel Mobility in Barnaby, British Columbia.

Microsoft Wins A Round - Finally

Microsoft can pursue independent Java technology development, according to a ruling last week in its legal battle with Sun Microsystems Inc. over whether Microsoft succeeds in sustaining its newfound freedom, it isn't clear it will do it.

At Microsoft's request, U.S. District Judge Ronald Whyte in San Jose, Calif., clarified the injunction he imposed last November against the company in the 2-year-old case. He ruled that the injunction doesn't forbid Microsoft from independently developing Java technology, as long as the company doesn't use Sun's code.

"This clarification is one step in the overall case, but it is important to the marketplace that innovation not be restrained," said Microsoft attorney Tom Burt.

But Microsoft still wants an explicit ruling that its contact with Sun allows it to develop Java technology while the overall case is still pending. A hearing on that request is set for March 12.

Because Whyte in his injunction said Microsoft might be violating Sun's copyright, Microsoft hasn't said what it plans to do in the long term with Java, which it insists needs improvements.

Analysts last week said they doubt that Microsoft will drop Java support.

Sun spokeswoman Lisa Paulson said to pursue Java development. Microsoft can't use any of Sun's code or use Sun's specifications or documentation. And Microsoft's technology would have to pass a compatibility test.

"— David Orenstein with Kathleen Olsson
SAP to Patch Up New Supply-Chain Tool

BY CRAIG STEDMAN

SAP AG early next month plans to finally ship a critical software patch that’s needed before early users of its new supply-chain planning tool can go live with the product.

The patch is supposed to let users feed production and distribution plans prepared by the Advanced Planner and Optimizer (APO) back to the German vendor’s R/3 business applications. SAP now has just a one-way link for sending data from R/3 to APO, which was released late last year [CW, Jan. 18]. The two-way interface “has to be there,” said Shawn Mullen, APO project manager at Mott’s North America in Stamford, Conn. APO is “an island now, with no bridges back” to the juice and applesauce maker’s R/3 system, he added.

But Mott’s expected to get the required patch from SAP this month or back in January, Mullen said. The March delivery was promised forced Mott’s to delay, from next month to May, a rollout of APO as part of its vendor-managed inventory program.

Use of APO for demand planning and wider inventory replenishment had to be moved back from May to June, Mullen said. Mott’s still expects APO to pay for itself in less than a year by improving sales forecasts and lowering inventory costs, “but we’re holding our breath” that the patch works properly, he said.

Two-way interfaces are “absolutely crucial,” said Steven Cole, an analyst at Forrester Research Inc. in Cambridge, Mass. “Without links back to R/3 or some other execution system, a plan [built by APO] is essentially a dead end.”

Planning software vendors such as I2 Technologies Inc. and Manugistics Group Inc. “wouldn’t be in business” without such ties to R/3 and other enterprise resource planning systems, Cole added.

Mike Maguire, director of supply-chain solutions at SAP, said there “was no way we could have predicted all the touch points that [users] wanted back to R/3.” SAP last month sent out a development SWAT team to find out what additional functions early adopters of APO needed. Maguire said. An initial software patch with expanded support for international languages was released two weeks ago.
Sun's Datacenter.com to Help Customers Get Web-Ready

BY JAISKUMAR VIJAYAN

After years of trying to vault into the data center arena, Sun Microsystems Inc. may have found a new route using its Internet savvy.

The company last week unveiled a long-term strategy called datacenter.com, through which it will offer a range of hardware, software, financial and implementation services to prepare data centers for the Web and electronic commerce.

"Sun's vision of datacenter.com blends the predictability and security our customers demand with the opportunities of the Internet," said Rick Lessard, vice president of technology at Equifax Inc., an Atlanta-based provider of consumer credit reports. The company is using a Sun Ultra 10000 high-end server to store and manage credit records migrated off a mainframe.

Sun wants to help customers build highly scalable, reliable platforms to host Web-enabled data center applications, said Anil Gadre, Sun's vice president of marketing. The move comes at a time when most of the major hardware vendors are setting out similar strategies. IBM is considered well ahead of the pack, but rivals such as Hewlett-Packard Co. and Compaq Computer Corp. are still piecing together a long-term Internet strategy.

What's in the Bag

Sun will offer servers with mainframe-like partitioning technologies, high-availability clustering and a range of services, such as custom installation, server consolidation and high-availability programs.

"Reliability and scalability are not negotiable" in building that sort of effort, said Ron Bowman, manager of electronic business marketing at BT's data center in St. Louis.

Not all the capabilities and technologies offered under datacenter.com are new. Sun has helped customers with on-site installations and configuration services for years. But bringing it all under one service umbrella should focus the company's efforts more effectively, said Joyce Becknell, an analyst at Aberdeen Group Inc. in Boston.

As part of the effort, Sun last week introduced new systems based on its highest-end 400-MHz UltraSPARC chip, which has new performance-boosting interconnect technology for building highly scalable servers. Sun also announced Sun Cluster 2.2, the latest version of its Full Moon clustering software for high availability.

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IBM Works to Support Linux On Its Low-End Hardware

BY DAVID OREMSTEIN

IBM last week said it will work with multiple vendors of Linux to develop and support the freeeware operating system on much of its low-end hardware.

IBM jointly announced a deal with Red Hat Software Inc. in Research Triangle Park, N.C.

But Orem, Utah-based Caldera Systems Inc. also said it has a deal with IBM that includes training and certification of Linux professionals, said Nancy Pomeroy, media relations director at Caldera.

IBM has been working on deals with several leading Linux distributors to meet customer demands around the world, said Tom Figgatt, manager of the electronic-business segment of the company's Netfinity servers unit.

Such heavyweight support for multiple distributions of Linux will be crucial to creating interest among many CIOs who are unsure of what to make of Linux, said Nancy Pomeroy, media relations director at Caldera.

IBM and Red Hat have agreed to develop drivers and other software for Linux to ensure that it works well with IBM's servers and PCs.

IBM will offer users technical support in conjunction with Red Hat for the first 90 days.

DOJ: No Regulatory Remedies Sought

By Patrick Thibodeau

Washington

The government reached deep into its E-mail bag last week in an attempt to establish that Microsoft Corp. has a long history of anticompetitive behavior. A 1990 Microsoft memo outlined a plan to let Microsoft "continue to do a great job on its worst vulnerabilities," one expert said.

The memo, written by Microsoft President Brad Chase, was one of several pieces of evidence used by the government to try to prove Microsoft's intent to harm Netscape Communications Corp.

"I think the judge really is going to have to figure out what this all means," said Brad Chase, a Microsoftexecutive who has been quotable for the government in court.

But Microsoft Vice President Brad Chase argued in court that Microsoft was "not anticompetitive in 1990," a statement that was used by the government as evidence in the case.

"We're not going to win on the facts," said Microsoft attorney David Boies, who has been seen as one of the most powerful attorneys in the case.

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IBM Engineer to Lead Real-Time Java Group

Sun Microsystems Inc. has selected IBM engineer Greg Bollella to lead the group that will develop a real-time extension for Java—a critical element to enable Java to work in embedded devices, sources involved in the process said. IBM has yet to select a technology for its real-time Java expert group.

SEC Ends Review Of PeopleSoft

PeopleSoft Inc. last week said the Securities and Exchange Commission has ended a review of its accounting on two acquisitions without requiring a restatement of any financial results. PeopleSoft came under review by SEC auditors in connection with acquisitions made last year and in 1996.

J. D. Edwards Buys 3-D Tool Maker

Denver-based J. D. Edwards & Co. said it will buy The Premisys Corp., a small, Chicago-based developer of product configuration software for manufacturers. The $12 million deal is due close early next month. Premisys' tool supports three-dimensional images of made-to-order products.

NT Upgrade Software Bows

Fast axle Technologies Inc. in Hali fax, Nova Scotia, said it has released its DM/Administrator for NT. The software was designed to help information technology managers upgrade from Windows NT 4.0 to Windows 2000. It's available at a list price of $7 per user.

VeriSign Announces Security for PDF Files

VeriSign Inc. has announced its VDS/Document Signer, which lets users secure and authenticate Portable Document Format files using digital certificates. No list price is available yet.

BRIEFS

DEMAND GROWS FOR NEGOTIATORS

IT counted on to manage outsourcers, too

BY JULIA KING

This year, Hilton Hotels Corp. will spend the lion's share of its more corporate IT budget on outsourcing. It did the same last year.

For CIO Joe Durocher and Hilton's senior information technology managers, that adds up to a lot of time negotiating deals and then building relationships with outside service providers. All told, Hilton, a $496 million company in Beverly Hills, Calif., has about 40 in-house IT and hospitality business experts who work with the vendors.

"Contract negotiation and administration are a very large part of the job," Durocher said.

Early Users Give Nod to Analysis Package

IBM program helps banks target profits

BY STEWART DECK

IBM this week will announce a data warehousing and analysis system packaged especially for banks.

Quick payoff and support for some surprising, counterintuitive decisions have been among the benefits early users found with IBM's Deci sionEdge for Relationship Marketing analysis program. "We had a full return on our investment 14 months after installing the data warehouse component," said Jo Ann Boylan, an executive vice president in the Key Technology Service division at Key Corp., the nation's 13th largest retail bank with 2 million customers.

She added that the data warehousing and analysis system helped raise the bank's direct-mail response rate from 1% to as high as 10%. It also helped identify unprofitable product lines.

The IBM package includes application suites, analytical software, user interface software, and consulting services. Pricing begins at around $150,000.

People's Bank & Trust Co. in Indianapolis used the IBM system to delve into some highly profitable bank offerings that turned out to be prohibitively expensive, said Bob Connors, a senior vice president of information services.

Data points out how much actually cost to bring in each highly profitable home equity loan customer. "Because those loans can be so profitable, it seems like a no-brainer that you'd want to market them," Connors explained. "But we found that the costs to bring them in were far too high, so we've cut back way on that spend. We still offer the loans, but we don't spend so much on advertising or direct mail anymore."

People's Bank's database management is much smaller than Key's—only 65 million records — but it is big enough to better understand its 50,000 customers.

"We recently used it to help identify maturing [certifi- cate of deposit] and offer different types of accounts to those customers to retain those deposits. We achieved 120% of our goal," Connors noted.

Retail Apps Coming

This banking edition follows three similar IBM package releases specifically designed for the telecommunications, utilities and insurance industries. Next up is a similar setup for retailers, IBM officials said, but release dates haven't been announced.

"Data integration is the driving principle" behind these packages, said Richard Winter, an analyst at Winter Corp. in Waltham, Mass. "Large organizations will drive more of their decision-support systems because they want to solve specific, large problems."

MOREONLINE

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IBM PLANS VIRTUAL ET ENHANCEMENTS

Handheld support helps remote workers

BY ROB WALLACE

IBM LAST WEEK announced an array of enhancements to its virtual private network (VPN) service that could make it more appealing to companies looking to support remote workers.

Among the improvements are support for handheld devices, access using Asymmetric Digital Signature Algorithm (ADSL) services and more robust authentication of VPN users.

VPNs are a collection of secure tunnels that carry data packets over public IP networks such as the Internet. To date, VPNS are most widely used as a less-expensive alternative to modem banks for supporting far-flung end users.

"This is the first I've heard of a VPN provider supporting handhelds, which is a big benefit because many users would rather use handhelds instead of carrying around 5-pound bricks," said Eric Zines, VPN analyst at Boston-based TeleChoice Inc., referring to laptop computers.

Support for handheld devices means users who install an IBM dialer in their 3Com Corporation Palm Pilot or IBM Work Pads or Microsoft Corp. Windows CE units can gain access to their companies' VPNS.

By working with the regional Bell operating companies, IBM is expanding its ADSL pilot program to enable remote workers in more cities to access VPNS using the high-speed service. As of April 9, IBM will support ADSL access in Boston, Chicago, Los Angeles and New York.

IBM also will let companies use Radius servers with their VPN service. Network managers can add and delete remote-access users from their VPN — and reset passwords — using those devices. IBM will support that capability beginning April 30 in the U.S., Latin America, Canada and Europe, with Asia following on June 30.

IBM recently announced that it's selling its network to AT&T Corp., but it will continue to develop and sell services that ride over it, Zines said is a good move for everyone. "IBM will no longer have to worry about the physical network and can focus more on developing new and helpful service features."

Aegon's and TransAmerica's independent business units may leave IT unscathed

BY THOMAS HOFFMAN

Aside from the customary back-office systems integration and data center consolidation that occur following most multibillion-dollar mergers, Aegon NV's proposed $97 billion acquisition of TransAmerica Corp. may not have a substantial impact on either company's information technology operations.

That's because Netherlands-based Aegon and San Francisco-based Transamerica both boast a bevy of autonomous business units throughout the U.S. that will likely operate independently of one another, analysts said.

"We've been told not to expect any material changes to the financial side of TransAmerica," said George Reilly, director of business systems at the firm's TransAmerica Leasing division in Purchase, NY.

Aegon already has a strong track record of integrating U.S. and other insurers it has acquired during the years, including its $3.5 billion purchase of Baltimore-based Providian Corp. in 1997, analysts said.

Aegon executives said they expect the TransAmerica deal to remove $50 million in expenses after three years, though they didn't specify where the savings would come from or how many staff positions might be cut.

The merger is expected to create the third-largest life insurance group in the U.S. in terms of assets and written premiums.

Ira Zuckerman, an insurance analyst at Nutmeg Securities Ltd. in Westport, Conn., estimated that 1,500 jobs could be eliminated between the two companies.

Aegon and TransAmerica have about 1,000 IT employees throughout the U.S. As for IT consolidation, "obviously there's going to be some slippage — you don't need two back offices or two data centers," Zuckerman said.

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Insurance's Deal Targets Back-Office Savings

What's Missing

Microsoft already offers several Web products such as Internet Information Server, a generic Web server, and Site Server Commerce Edition, a Web server aimed at online retailers.

What's missing, according to analysts, is a clear outline of how the products work with back-end systems and databases — particularly non-Microsoft software.

"When a big company like a bank or big retailer goes online, most of their accounting or inventory data isn't in Microsoft products. It's in IBM mainframes and other legacy systems," said Scott Smith, an analyst at Current Analysis Inc. in Sterling, Va.

Some information technology shops doubt how well Microsoft software will integrate with back-end and non-Microsoft databases — particularly non-Microsoft software.

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Microsoft Plots E-Commerce Bid

Internet group has lacked a full-time leader since December. Microsoft declined to comment on its plans for the San Francisco event.

But according to sources involved in the planning, also on the agenda are details about the vendor's plans for a revamp of its MSN.com portal and the announcement of Commerce Alliance, a new program for systems integrators that specialize in building electronic-commerce sites based on Windows NT and other Microsoft products (see chart at right).

What's the Buzz?

Microsoft CEO Bill Gates will host an electronic-commerce marketing event March 4 that is expected to cover:

> A soup-to-nuts product strategy designed to convince big IT shops that Microsoft's Web products can handle high-volume online retail sites

Middleware from third-party developers to link Microsoft Web servers to non-Microsoft mainframes and non-Microsoft databases

Commerce Alliance, a new group of integrators and Web consultants that specialize in building electronic-commerce sites using Windows NT, Site Server Commerce Edition and other Microsoft products

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Are you ready for the new customer?

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While e-customers present endless opportunity, they do pose some challenges. Managing relationships with customers, prospects and partners online is an enterprise-wide task. Systems performance and scalability needs are key. In short, it's got to be done right. Shrink-wrapped solutions will fall short. Experienced partners with customizable products and old-fashioned follow-through will succeed.

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always had to choose between large, safe, esta-
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up-and-coming developers. Each had its advantages
disadvantages. Everything was a compromise.
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with the talent, specialization, and proven expertise
of an up-and-coming applications developer, this
merger will create something truly unique.
The best of both worlds.

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computer systems. With a 16-year track record of
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Company, Merrill
Lynch, and
Wachovia Bank.
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highly-skilled, experienced professionals who have
extensive, wide-ranging expertise in Internet devel-
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neering, strategy planning, evolutionary downsizing,
rapid application development (RAD), object oriented
databases, vendor software evaluation, and other
key technology areas.

In response to clients' needs, CMSI developed a
national network of innovative Systems Outsourcing
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maintain a repository of re-usable software applica-
tions, code strings, and components that ultimately
reduce the time and effort needed during the initial
development phase of a project. Each SOC is net-
worked to provide CMSI with the ability to staff proj-
ects from any SOC or branch location for concurrent
development. They also offer on-site consultant and
customer training centers that provide complete
staking capability to train users of a newly-complet-
ed system prior to deployment at the customer site.
CMSI has also created a proprietary Evolution
Methodology, which is an integrated set of stages,
tasks, work products, techniques, tools, and project
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approach for planning, development, and
maintenance. This helps CMSI deliver more
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standard for enterprise management.

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Growing Global Professional
Services - Division.
Doubling in size in just the past year, CA's Global
Professional Services Division is growing meteori-

cally both through organic growth and through
CMSI Is Great News
You Look At It.

strategic acquisitions like this one.

CMSI will become part of CA Global Professional Services (GPS) in accordance with GPS' growth strategy of implementing leading-edge business solutions. GPS offers a broad spectrum of IT services in dozens of disciplines, including infrastructure management, application development and integration, Y2K compliance services, asset management, desktop support, and end-user productivity.

Services range from consulting, to implementation, to comprehensive outsourcing and facilities management.

CA And CMSI Product & Service Offerings Complement Each Other With Virtually No Overlap.

CMSI offers services CA doesn’t offer. CA offers software solutions CMSI doesn’t have. By combining the two product and service offerings, the result is a more comprehensive, wide-ranging offering of both products and services for clients to choose from. Because there is virtually no overlap between the two companies, there is tremendous synergy and growth potential between the products of CA and the services of CMSI.

Innovative, Leading-Edge Applications Backed Up With The Industry’s Best Service And Support.

CMSI builds some of the most innovative applications and client-server solutions in the industry. Now these leading-edge solutions will come fully-backed with all the resources of CA’s award-winning service and support. Around the clock and around the world, CA provides mission-critical support that is unmatched. This additional benefit can only enhance and strengthen all of CMSI’s applications.

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CA has developed some of the most advanced database and object technology software in the world. Now with CMSI’s expertise and experience, this software can be exploited to its fullest. Clients will be able to choose from one source not only the advanced software that they need to develop the applications of tomorrow, but the expert developers and consulting partner that they need to build these applications.

CA And CMSI Are The Perfect Partners To Deliver Comprehensive e-Commerce Solutions.

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An Ideal Fit In Terms Of Technical Strengths, Business Vision, And Corporate Culture.

“Our partnership with CMSI extends our continuing strategy of building GPS through highly-focused acquisitions that complement CA’s core competencies and that address the most critical requirements of today’s global enterprise,” says CA President and CEO Sanjay Kumar. “CMSI’s proven development methodologies and extensive experience with strategic re-engineering make them an ideal addition to GPS’s already formidable technology and business resources. They will provide a particularly powerful vehicle for greater penetration of CA’s Jasmine and Ingres technologies into the upper echelons of the corporate application development market space.”

“This is a very exciting time to be joining the CA family,” says CMSI Chairman and CEO Jerry W. Davis. “Our two companies have an ideal fit in terms of technical strengths, business vision, and corporate culture. We’re especially enthusiastic about the contributions this partnership will allow us to make globally in high-growth areas such as Internet commerce applications and multimedia content delivery.”

To Find Out More Call 1-800-432-2867 Ext. 2236, Or Visit www.cai.com/cmsi-info

Computer Management Sciences, Inc.
**EDS leads group to bring Web-enabled system to users lacking business links**

**BY STACY COLLETT**

Electronic Data Systems Corp. said it will work with supply-chain and Java developers to integrate their products into a Web-based supply-chain system. The more widespread EDS services while offering supply-chain capabilities to users who don't have electronic data interchange links with business partners.

"Until now, small companies couldn't get a supply chain through electronic data interchange, but it's very expensive," said David Hoffer, a plant manager at NationsBank Corp. in Newton, Mass. "Microsoft landed a module to a de facto standard," said Ken Williams, a plant logistics manager.

"There are several [supply-chain] modules that Paragon offers, and we've only got one module running here. If I wanted to expand, I need resources, and I would rely on EDS to help me integrate them," said Williams, who runs one full-time and seven part-time employees on the project. EDS said its offering, available now, is aimed at U.S. and European companies in high-tech, automotive, aerospace and other industries.

The consortium is the first to offer an integrated Web-based supply-chain package, Hoffer-berth said. ERP vendors, such as SAP AG, are developing Web-based offerings. But the SAP system won't be available for at least six years, he said.

FROM THE MANUFACTURER's point of view, the Web-based system brings all vendors into the Internet using a browser, said Mike Atwood, president of an enterprise services group formed by EDS and its A.T. Kearney Inc. unit. From the manufacturer's perspective, the Web-based system is aimed at U.S. and European companies in high-tech, automotive, aerospace and other industries.

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### IBM Adds Ethernet Switches

**BY BOB WALLACE**

IBM Token Ring users looking to migrate to cheaper Ethernet networks will be able to leave IBM if they change the vendor. In addition, IBM priced the bulk of its Ethernet switches aggressively to combat incumbent Cisco Systems Inc., 3Com Corp., Nortel Networks and Cabletron Systems Inc.

"What IBM has to do is to offer a complete package [that] includes lower pricing, reliability and service and support for users," said John Morency, an analyst at Renaissance Worldwide Inc. in Newton, Mass. "Fortunately, with the exception of low pricing, these are attributes that IBM has historically been associated with." But is it too little, too late? IBM - shipped only 0.9% (29,200) of the more than 59 million switched Ethernet ports worldwide in the third quarter of last year. For the fourth quarter, IBM shipped 1.2% (66,600) of the more than 50 million Ethernet switch ports.

For the fourth quarter, IBM shipped 1.2% (66,600) of the more than 50 million Ethernet switch ports. The switches will ship in March. Pricing will start at $40 per port. That's lower than the Big Four's prices, and IBM's boxes have the same features as comparable switches.

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*IBM 1996 Business Recovery Services Study.*
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NEWS

DUAL CAREER PATHS REDUCE TURNOVER

Practicing companies hold on to top talent

BY BARB COLE-GOMOLSKI

The lack of a career path for technicians and the tight IT labor market has led to a culture of job-hopping at many companies, observers said.

The dual career track "gives me a sense of control over my own destiny," said Tom LaBonte, lead information systems analyst at AlliedSignal. As a 15-year company veteran who has had various job titles, "I can move into the more technical area or I can go out and work more with customers in the business unit," he said.

Setting up a dual career path often involves reclassifying all IT jobs and introducing new training programs. Cox said it will take Sears about a year to get its program in place. But the extra effort is worth it, Schweer said. "People love playing a big role in the development of their career."

One seamless global network. Only one company has it. MCI WorldCom. Which means, your data gets to where it has to go without handoffs to other carriers. Whether your needs are local, national or international, you deal with one network, owned and operated by one company. MCI WorldCom. How do we do this, you ask? Simple.

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Smaller ERP Vendors Look to Bulk Up

Lawson to support Java; System Software users to gain add-ons

BY CRAIG STEDMAN

Lawson Software Inc. and System Software Associates Inc. — two of the vendors looking up at the big boys of the ERP business — are both about to go on the offensive.

Minneapolis-based Lawson this week is due to announce object-based technology that will let users of its enterprise resource planning (ERP) applications develop customized user interfaces in languages such as Visual Basic and Java. That will be followed in mid-March by an upgrade of the Lawson Insight applications that is expected to add features such as improved support for analyzing financial data.

Two weeks from now, System Software Associates (SSA) plans to lay out a new strategy that analysts said is essentially an attempt to relaunch SSA after several years of turmoil.

The company can't afford any more missteps, Caruso added. "They're kind of in a zero-tolerance situation right now with users."

Privately held Lawson is in much better competitive shape than SSA, said Jim Holincheck, an analyst at Giga Information Group Inc. in Cambridge, Mass.

But Holincheck said Lawson needs to make working with its software easier to keep up with bigger rivals such as PeopleSoft Inc. and SAP AG.

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THEY DON'T DO WINDOWS

Demanding refunds for the copies of Windows that they say they never used, about 100 open-source (primarily Linux) software users marched outside Microsoft Corp. offices in Foster City, Calif., on Feb. 15. Similar but smaller protests occurred in other cities such as New York and Tokyo. Microsoft spokesman Rob Bennett said the responsibility of providing refunds is in the hands of PC makers.
Toshiba jumps into server market.

Computers: "The Magnia 7000 series is a perfect combination of performance and scaleability to meet today's and in the future," said Fredrick Friederichs, vice president of marketing, TAIS, CSD. Toshiba Magnia 7000 server offers a combination of performance and scaleability to meet today's and in the future.

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Redundant power systems, error correction code memory and drives you can exchange while the server is active help maximize uptime and productivity. Built-in instrumentation, Intel LANDesk Server Management software and compatibility with enterprise management solutions help keep IT managers in control. Toshiba specially designed software additions that delivers proactive monitoring of hard disk drive, power supplies and cooling fans. For more information, go to www.manageability.toshiba.com. The Magnia 7000 series is part of a family of Toshiba servers that software compatibility.

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544GB using 9GB 1" devices or 108GB with optional second hot-swap cage

**I/O Expansion Slots**
Seven (7) total: six (6) 32-bit PCI slots, one (1) PCI/ISA shared, one (1) PCI slot occupied with network interface
Web Access to Big Iron Gets Easier, Safer

BY JAHKMAR VILJERAN
The latest crop of Web-to-host products is making it easier — and safer — for companies to provide wider access to data on mainframe and proprietary host systems.

Last week, Kirkland, Wash.-based Wall Data Inc. released a new version of its Rumba Office 2000 family of host access products. It features a set of ActiveX controls that lets users access and manipulate host data, including file transfer and printing, from a browser-enabled client (see chart).

Wall Data's announcement came on the heels of a similar one by WRQ Inc. in Seattle. The company's Reflection EnterView 2.0 host access product makes Web-based host access safer through its support of high-end data encryption and of standards such as Secure Sockets Layer and Transport Layer Security.

A centralized Web server, which users log on to, manages the actual access and manipulation of data between the host and client in both cases. Users need such enhancements to deploy Web-to-host technologies widely, said Stephen Drake, an analyst at International Data Corp. (IDC) in Framingham, Mass.

WRQ's Reflection EnterView 2.0

- Set of ActiveX controls allow host display, file transfer and host printing
- Support for Microsoft and Novell Network Directory Services

WRQ's Reflection EnterView 2.0

- Integrated Secure Sockets Layer/Transport Layer Security
- 368-bit triple DES and 56-bit DES support

"There's been a lot of interest from people who want to extend their [legacy] data to new and remote users," Drake said. The market for such products grew from $24 million in 1997 to $90 million last year and may hit $200 million this year, according to IDC.

The better security and the easier deployment of a Web-based system has prompted Grand Rapids, Mich., hospital Spectrum Health to deploy WRQ's EnterView, said Scott Leising, a Web analyst at the hospital. Spectrum Health is using EnterView to give intranet and remote users such as network doctors common access to data on disparate mainframes and Hewlett-Packard Co. HP 3000 systems.

"It gives everybody in the organization a way to cross over the boundaries created by different systems easily and without undue burden on the IS staff," Leising said.

Energizer PME for R/3 and OptiTrak

Lit Up The Landscape. Now, Here Are Two More Reasons To Shine.

Their introduction met with glowing praise, especially from those implementing R/3 along with leading industry analysts, and it's easy to see why.

Energizer PME (Performance Management Environment) for R/3 accelerates implementation and simplifies performance management. It shows the root cause of system and application problems, while anticipating and automating database maintenance. It not only provides Service Level reports, but also in real time when Service Levels are not being met, and then dynamically manages R/3 components in real time to maximize your investment.

Energizer PME's first component, OptiTrak, identifies problems as they happen and determines the most likely cause of response time degradation.

New this year are OptiWatch and OptiGrowth. OptiWatch monitors database growth, provides immediate alerts and automates database maintenance by dynamically creating the necessary scripts. It also reconfigures R/3 database and operating system parameters for optimum performance to match the changes in workload and activity over time. OptiGrowth allows complete Service Level reporting and alerting in real-time, minimizing the impact to service levels by identifying problems as they happen. Full capacity planning and reporting of end-to-end response time are also available.

Like all Energizer PME for R/3 components, OptiWatch and OptiGrowth use standard ABAP programming features and R/3 data collection routines. They reside within R/3 and run as an integrated application, which means installation is simple, the transactions are easy and familiar use, and overhead is less than 1%. They work on all platforms that support R/3 and are designed for all R/3 users...from the smallest company to the largest, worldwide enterprises.

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STORAGETEK PLANS REBOUND FROM RECENT EARNINGS SAG

CEO expects growth from software push

Storage Technology Corp.'s fourth-quarter 1998 earnings weren't as rosy as Wall Street originally expected. Last month, the company posted earnings of 52 cents per share, down from expectations of almost 77 cents per share (and down from 77 cents per share in the same quarter a year ago). But the Louisville, Colo., company has plans for rapid growth this year. Computerworld reporter Nancy Dillon recently spoke with StorageTek CEO David Weiss about what lies ahead.

Q: Why did StorageTek fall short of earnings expectations?
A: From a revenue standpoint, we were still less than what we wanted — only a 5% growth over 1997. Two new products, the Virtual Storage Manager and the 9840 (tape drive), were actually six months late to market. Although they began shipping in the later part of the fourth quarter, revenue wasn't as great as we wanted.

Q: How do you expect to get back on track?
A: In the high-end tape business, we're seeing strong demand for the 9840 and the Virtual Storage Manager. But the real fuel in 1999 will be software from new areas. First is the client/server tape and disk area. We have our [storage-area networking] initiatives and our consulting business. We expect these three areas to grow faster than the market.

Q: How is storage-area networking (SAN) changing your business?
A: We already started delivering a SAN solution in the fourth quarter. And in about five years, 80% of our revenue could come from SAN-attached products. SANs have also gotten us to focus more on software.

In early 1999, we will rate our software into a different business. We did a restatement of last year's earnings and learned that if we had ported software differently, it would have represented $100 million [in revenue]. I expect it to be two to three times that large in 1999.

Q: Will this growth come from existing software or future offerings?
A: It will be a combination of both. Plus, we'll have some innovative software that resides on the client and provides Internet-enabled backup. You should look for an announcement in the first half of 1999 where we'll offer Internet backup as a service you can subscribe to. And (after that), we'll have something called E-Mail Archive.

IBM is reselling your Iceberg mainframe disk system as the Raman Virtual Array, but this agreement extends only through 2000. What's the future for Iceberg?
A: The relationship with IBM has been a win-win scenario. It has gained us significant presence in the high-end [direct-access storage device] business. But towards the end of this year, IBM will have a new product called Shark that it will migrate towards. At the same time, we're starting to sell Icebergs ourselves.

We've also been working on new features that will be unique to us, so we can sell against IBM Shark and EMC (Corp.). For instance, we'll introduce a version of Iceberg that can connect to both S/390 and open systems.

Microsoft Knocks Caldera Lawsuit

Microsoft Corp. has filed motions to dismiss the antitrust complaint and other charges brought against it by Caldera Inc., a tiny Linux company in Orem, Utah. The motions and much of the evidence in the case are sealed and unavailable to the public, but Microsoft issued a press release that painted Caldera’s claims as groundless. “The way to refute their points was to site documents under the protective order,” countered Bryan Sparks, Caldera’s CEO. The trial starts June 7.

FINLAND'S NOKIA BUYS DSL VENDOR

Finland's Nokia Corp., last week said it agreed to acquire Diamond Lane Communications Corp., a maker of high-bandwidth, Digital Subscriber Line products, for $225 million in cash. Nokia hopes that buying the Petaluma, Calif., company will give it an edge in developing its Internet Protocol and Asynchronous Transfer Mode networks market.

BRIEFS

VENTURE CAPITAL BREAKS RECORDS

Propelled by the surging technology sector, venture capital investments in the U.S. reached an all-time record of $14.3 billion in 1998, a 24% jump over the previous year, according to a survey released last week. The study by PricewaterhouseCoopers in San Jose, Calif., found that venture capital investments in the software and information sector increased 57% to $4.5 billion last year, while Internet-related venture capital investments soared 66% to $3.5 billion.

SNAPSHOT

QUARTERLY EARNINGS REPORTS

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<th>COMPANY</th>
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A PC in every home

Suddenly, quietly, the PC has become a mass-market consumer phenomenon. The implications of that may be more far-reaching than we anticipate. The arrival of truly low-cost PCs, combined with the gotta-be-there cachet of the Internet, has quickly pushed home computing into the mainstream. Just last month, the industry marked a major milestone when Dataquest reported that more than 50% of U.S. homes have PCs. You're now out of the mainstream if you don't own one.

Early this month, start-up FreePC.com said it was oversubscribed by a factor of 50 to its offer of a free PC to people who met certain demographic criteria. A New Hampshire Internet provider is giving away a free PC to customers who make a three-year commitment to using its Internet service. Then there's Emachines, a Korean company with a fully configured $399 computer that has cracked the best-seller charts after just a few months on the market.

If you're in a business that caters to consumers, you have to take all this seriously. The PC has gone from geeky extravagance to commodity in less than two years, and most new users will be going online at some point. How dramatic is the move to the Internet? Well, common sense dictates that growth gets more difficult as companies get larger. However, America Online just added a million new subscribers in the shortest period in its history.

Outside of electronic-commerce-dependent markets, big business has had the luxury of treating the Net as a kind of novelty until now. I was surprised, for example, to find a “happy summer” greeting when I visited the Web site of one of America's largest fruit-juice makers last week. But that kind of blissful naiveté can't last for long. For a new breed of PC-empowered consumers who increasingly are employing high-speed connections, the network is going to replace the Yellow Pages, catalogs and the telephone. If you aren't offering them what they expect online, they're going to move elsewhere quickly.

Ready or not, the PC has gone mass market, and it will change the way you interact with your customers. This train has taken 20 years to reach the station, but now that it's coming, it's moving very fast.

more than 50% of American homes now have PCs

Internet stocks are foundation of the next economy

Despite prophecies about bursting bubbles, the rationale underlying the enthusiasm for Internet stocks remains rock-solid. Yes, there will be considerable volatility — as we've seen. And there will be big losers, not just winners. But overall and over time, the companies that tie their fortunes to the Internet have but one way to go: up.

There really are three kinds of Internet-related stocks that prudent investors should be holding.

The high-profilers such as Amazon.com, eBay, ETrade and Yahoo are one type, what I call a “pure” Internet stock. These companies didn't exist before the Internet, their whole business model is built around the Internet, and all their revenues derive from transactions on the Internet. Although their share prices have dropped since the beginning of the year, all of these companies have appreciated magnificently from their levels of a year ago. And many still have massive growth potential.

The second type is composed of traditional brick-and-mortar companies that are successfully changing their business model to seize the opportunities offered by the Net. Examples include Federal Express and Disney. These companies are less subject to the massive market swings of the pure Internet stocks.

For example, FedEx has totally redesigned its business processes so that fully 60% of its shipments are ordered, tracked and managed via the Web. FedEx customers can use the Internet 24 hours per day to pinpoint the whereabouts of their parcels — and they love it. And FedEx is poised to harvest new markets created by the Web's ability to make even the smallest business a vendor to the world.

Disney is moving much of its movie and theme-park content into the interactive world. Its Go.com portal site opened last month with 8 million registered users and includes some of the Web's most popular sites: ESPN.com, ABCNews.com and Disney.com.

The third type of Internet stock investment involves the companies that make the switches, routers, modems, software and other technology critical to the Net's operation. A good example is Cisco Systems. By 2003, the total volume of com-
It's good sense to invest in the companies that are building the billions of dollars of Internet infrastructure to enable this.

Many decades ago, the steam engine came along. One group said, "No way, we're sticking with horses. There will always be a need for them." The other group said, "Looks promising. We will invest in railroads. And in the companies that build the locomotives. And in the companies that will make the products shipped by rail. And in the new communities that will be built in the new territories opened by the railroad."

The risky strategy was to stick with the stables, saddles and blacksmiths. The conservative approach was to invest in the emerging economy.

DANIEL MOSCHELLA

Business lessons from the portal merger mania

THERE ARE CERTAINLY heady times in the portal business. This year, we have already seen industry leader Yahoo acquiring GeoCities and announcing a major alliance with Fox, @Home Network's bid to acquire Excite and, most recently, the planned merger between USA Networks and Lycos.

Last year, Disney grabbed 43% of Infoseek and NBC took 19% of Snap, while America Online acquired Netscape. You might call this a trend, merger between USA Networks and NBC such as USA Networks' of Lycos or Disney's of Infoseek seem so forced, even random, whereas the Yahoo/Fox and Microsoft/NBC alliances appear much more natural. It also helps explain why the two strongest portals, AOL and Yahoo — have managed to remain independent.

But beyond the world of portals, media and advertising, there's a wider lesson. If your company comes from the pre-Web era and you're considering buying or aligning yourself with a pure Web-based rival, remember this: You probably need them more than they need you.

When combined with the compelling potential of the Web, this can easily become a formula for substantial — but perhaps necessary — excess. Caveat emptor.
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Domino effect is key to predicting Y2K impact

HOW BAD WILL the year 2000 problem be? Corporations and governments are asking this question with increasing frequency. Most predictions focus on the immediate effects of computer failures. But predicting how the year 2000 problem affects corporate America requires an analysis of the domino effect that cascading failures might have over a period of time. Year 2000 problems have been occurring for years and will run well into the next century, but the greatest impacts could manifest themselves in the latter part of 2000 — even assuming that domestic power, water and telecommunications systems will continue to function well into the year 2000 (I assume the situation outside the U.S. will be more problematic). To predict year 2000 failures, you have to start with problems reported to date. For example, half of the companies in a Cap Gemini survey had already reported year 2000 errors by late 1998.

Although look-ahead routines, "99" logic and remediation errors will escalate this year, they're unlikely to cause major revenue shortfalls that you can't correct quickly. But when year 2000 arrives, the game changes dramatically. In 2000, systems will encounter backward-looking calculation, date-routing, input validation and remediation errors. Old date routines, shared by hundreds of programs, could fail en masse. These problems could easily outstrip or slip by the watchful eyes of repair teams. As these events unfold in IT, end user and embedded systems, companies could encounter a domino pattern of failures.

Data corruption is an insidious problem that's hard to find and hard to fix. Transportation delays linked to routing, port management, refueling and onboard system errors also may take hold. Manufacturing glitches, supply-chain interruptions, import/export delays and late payments could drag production, trade and the economy down further. Even if you assume that these issues will be addressed domestically, foreign impacts still could result in major problems in the second quarter of 2000. In Asia, questioning a supplier's ability to deliver results in a loss of face — which limits the reliable information you can get on that part of the supply chain. This will exacerbate year 2000 problems in the Far East.

Many oil-producing nations, according to a recent Gartner Group survey, fall into high-risk failure categories. As many as half the companies in these nations will experience critical failures. Energy production and distribution delays could strike the U.S. in the second or third quarter of 2000, when supplies run low. In addition to this, infrastructure problems in Latin America, Russia, China, Africa and Eastern Europe could delay production and revenues at U.S.-based conglomerates. When you see these problems collectively, the year 2000 problem begins to look more like a year 2001 economic headache.

How should you prepare for these delayed impacts? Executives can't let their guard down if only limited year 2000 failures materialize in early 2000. Contingency and crisis management teams must stay alert throughout the year — especially if their companies have significant international dependencies. The biggest challenge requires managing a company through an economic downturn, eliminating economic anchors, shifting production and distribution channels and jumping on competitive opportunities where possible. Finally, remember that these considerations assume an optimistic scenario.

Galen Gruman

E-commerce blurs lines of integrity, but they still exist

IT DIDN'T TAKE much to get Amazon.com to back off its plan to charge book publishers for special editorial attention — just a recent front-page expose in The New York Times. Many of Amazon.com's customers were horrified, thinking that the ostensibly independent staff recommendations on books may have in fact been disguised paid advertising. For its customers, one of Amazon.com's virtues is its sense of community, a virtual meeting place for book lovers to trade opinions and learn about books — much like the cafe/leisurely browsing strategy adopted by the major brick-and-mortar booksellers in an attempt to capture the personal feel of old-time bookstores in an era of megachains. But as soon as those opinions seemed to be up for sale, the whole proposition was threatened. Suddenly, Amazon.com seemed to be no more than a marketing catalog. And so customers had no reason to be loyal to the online bookseller. Even if customers thought the others were no better than an apparently untrustworthy Amazon.com, anger about being deceived could still drive them to alternatives. It didn't matter that Amazon.com officials said the plan wouldn't affect the staff's recommendations. The seeds of doubt had begun to sprout, making anything Amazon.com officials said questionable.

Amazon.com isn't the first company to run up against that thorny issue. Consumers are used to being bombarded with ads and marketing pitches. That's why review-oriented publications have such power — they are usually the independent place for consumers to turn to for buying advice. When I was executive editor at Macworld, company after company told me how many hundreds of thousands — even millions — of dollars in revenue our product reviews could add — or deny.

So it's natural that companies seek to add editorial content to their operations. People trust it. That's why bookstores offer staff recommendations, hospitals and medical chains run feel-good advice ads on television, online computer stores provide generic how-to-decide stories and so many financial and real estate firms pump out informational newsletters. But that strategy works only if customers believe the information to be independent.

Sure, you can fool buyers for a while. Indeed, some search engines have successfully sold their top results for specific searches, so you get a skewed response based on who paid to get in your face if you have certain interests. But wait till consumers realize that and stop trusting a major search engine or two.

Look at the questions that Walt Disney Co. has faced since acquiring the ABC and ESPN networks. The entertainment programs with thinly disguised Disney World ads are merely annoying, disguised Disney World ads are merely annoying, when ABC News gets questioned is it has been looked at, whether an ad and independent editorial content to their operations. People trust it. That's why review-oriented publications have such power — they are usually the independent place for consumers to turn to for buying advice. When I was executive editor at Macworld, company after company told me how many hundreds of thousands — even millions — of dollars in revenue our product reviews could add — or deny.

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**BUSINESS**

**MERCHANDISE ON THE MOVE**
A data warehouse application at Mervyn's department stores marks down aging merchandise scientifically, clearing shelves on schedule 90% of the time. Parent company Dayton Hudson is adopting it nationwide as a way to keep its operations lean. » 42

**VYING FOR EYEBOBS**
Gaming sites are among the "stickiest" out there. One, Gamesville, keeps users so glued that they wait through commercials in the middle of a game. It has ad response rates of up to 22%. » 45

**LOSING THE CONTRACT**
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Banking and insurance are hot areas for IT skills because information is a central part of the business. But building and construction? Sure. Both are among the 10 best industries for IT, which is playing an ever-greater role. » 55

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A new survey of CEOs shows they're a lot more confident than CIOs on year 2000 issues. CIOs see problems and ask for resources; CEOs stick with rosy misconceptions to keep confidence high. » 43

**...AIRLINES, TOO**
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**TEACHERS NEEDED**
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**CAREER SITES**
Shopping for the best sites to help keep your training up-to-date? Here are Computerworld's picks of the best and second best. » 49

**MANUFACTURING SYSTEMS HONCHO**
Thomas Gottfried says sophisticated production-planning capabilities will help Moore Corp. recoup its supply-chain management investment in less than a year.

**USERS LEAPFROG ERP ROLLOUTS**

Most users who want to get their supply chains under control roll out ERP systems first, even if the process takes years. But some are finding that a nimble supply chain provides enough advantage to be worth the pain of plugging supply-chain management tools directly into a mish-mash of mainframe applications. 

47
Application Keeps Merchandise Moving

Clearing sales floor offers retail advantage

BY DAVID ORENSTEIN

There's still no accounting for taste, but a sophisticated application gives Dayton Hudson Corp. a way to minimize the impact of bad bets on what consumers want.

The application moves goods out of stores efficiently by making store-by-store price markdown decisions on products that have passed their peak selling periods. The prices, which are based on several years of data, clear unpopular merchandise from the sales floor, making room for newer, higher-margin items.

Paul Lamoureux, a business consultant who was a lead architect of the application at Mervyn's California, the Dayton Hudson department-store chain that developed it, said the system can move merchandise within a prescribed time frame more than 90% of the time. Traditionally, merchandisers meet the desired timetable only about 75% of the time.

Some other major chains, such as TJX Cos. in Framingham, Mass., Sears Roebuck and Co. in Hoffman Estates, Ill., and Wal-Mart Stores Inc. in Bentonville, Ark., also are working on systems to bring some science to clearance markdowns, analysts said. But, with few exceptions, retailers still depend on human merchandisers to make the markdown decisions, said Brian Hume, president of Martec International Inc., an Atlanta-based retail consultancy.

Merchandisers often have an emotional stake in the items they have brought into the chain and can be reluctant to mark them down far enough, Lamoureux said. "It's a tough thing to say 'your baby is ugly,'" he said. The unfeeling application, however, has proved that the steepest markdown should be taken early to ensure that the merchandise leaves the store while it still has some appeal. It avoids the tendency of human merchandisers to make only small markdowns to stay within a prescribed amount of how much the retailer is willing to sacrifice to get the merchandise out the door, Lamoureux said. But the system also uses

data on sales at the full price to calculate when a smaller discount would be enough to spark sales, keeping losses to a minimum.

Much of the application's models and intelligence were developed by the Retail Management Institute (RMI) at Santa Clara University in California, Lamoureux said. With the school's help, development took about six months. The models are available to retailers who participate in the university's Retail Workbench project. The database tracks not only sales but also inventory levels and the frequency, date, and placement of ads and promotions.

All of the data is specific to each of Mervyn's 269 stores. Determining markdowns on a store-by-store basis is essential to maximizing profits, said Dale Achabal, director of the RMI. Some items sell better at some stores. To give an unnecessarily large discount would cost a chain dearly.

Sears also used Santa Clara's markdown model as the basis for a smaller-scale application that's in the pilot stage in selected Sears' departments and will be rolled out across the chain in the next two years, said Rhys Rankin, a manager in Sears' retail inventory management unit. The application works on a store-by-store basis but uses five weeks of data rather than two to three years.

Mervyn's has used its application for several years, but this year it became mandatory across all Dayton Hudson stores. "It does give you a competitive advantage," Lamoureux said.

BANK SYSTEM KEEPS HEAVY-HITTERS HAPPY

Customer relationship management tailors info delivery to client

BY THOMAS HOFFMAN

Corporations that generate $500 million or more in annual sales generally are the kind of customers you want to keep. That's particularly true on the cash-management side of banking, where players such as Chase Manhattan Bank Corp. and Bank One Corp. handle large dollar transfers and other transactions for corporate customers.

Banks compete very aggressively to lure clients with attractive pricing and special cash-management services, said Raphael Soifer, a banking analyst at Brown Brothers Harriman & Co., an investment bank in New York.

To help differentiate itself in that market, BankAmerica Corp. is pilot-testing a customer relationship management (CRM) system from Diffusion Inc. in Mountain View, Calif., that can help banks keep in touch with clients by E-mail, voice mail, fax or pager.

Banks typically notify big customers about events such as incoming or outgoing wire transfers, investments that has matured or changes in foreign exchange rates. But most do it using a single channel such as Internet E-mail, fax or voice mail. BankAmerica's customers asked for greater flexibility in the way they were notified, said Rick Leander, a senior vice president at the Charlotte, N.C.-based bank. "The idea here is to determine for customers what pieces of information are critical to them and what channel they want to receive it through," Leander said.

BankAmerica looked at a handful of CRM systems about 18 months ago. But most packages offered strictly Web-based information distribution, such as E-mail notification. "Our view is that the Web is important, but it isn't the only [communications] mechanism," Leander said.

In the first phase of the pilot, BankAmerica used the Diffusion system to page clients whenever the bank was about to process big checks to make sure that the checks weren't fraudulently obtained and to ensure that the customer wanted the bank to process the transactions. It used to notify customers of such events via E-mail. BankAmerica expects to complete the pilot by the end of next month and then begin rolling out the system.

The seven-figure investment in software and Unix servers was a no-brainer, Leander said, because the system "pay for itself quickly" by generating new business with existing clients while helping to lure new customers.

The benefits of using CRM systems in banking often are intangible and difficult to measure," said Octavio Marenzi, research director at Meridien Research Inc. in Newton, Mass. BankAmerica competitor Wells Fargo & Co. is one bank that successfully tracks all levels of customer activity using CRM systems to offer services based on their profiles or activities, he said.

SNAPSHOT

More Money for IT

Average IT budget as a percentage of company revenue, 1996-1998, worldwide:

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>5.1%</td>
</tr>
<tr>
<td>1997</td>
<td>6.9%</td>
</tr>
<tr>
<td>1998</td>
<td>7.1%</td>
</tr>
</tbody>
</table>

Average IT budget as a percentage of company revenue, by country, 1998:

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>3.3%</td>
</tr>
<tr>
<td>U.S.</td>
<td>6.4%</td>
</tr>
<tr>
<td>Canada</td>
<td>6.6%</td>
</tr>
<tr>
<td>Sweden</td>
<td>11.5%</td>
</tr>
<tr>
<td>U.K.</td>
<td>16.3%</td>
</tr>
<tr>
<td>China</td>
<td>20%</td>
</tr>
</tbody>
</table>

SOURCE: INTERPEX/COMPUTERWORLD SURVEY, 1998

Note: Percentages may not add up due to rounding.
CEOs, CIOs Split von Y2K Readiness Question

Execs downplay business disruptions; IT sees technical glitches

BY THOMAS HOFFMAN

At Airlines, Big Spenders Aren't Always Best Prepared

Accounting blamed for spending gap

BY STACY COLLETT

With all airlines facing similar reservation, baggage, safety and back-office issues, can a bigger year 2000 budget mean a better outcome? Not necessarily, according to some industry watchers. The year 2000 cost estimates of U.S. airlines vary widely:

- Delta Air Lines in Atlanta, the third-largest U.S. carrier on a revenue basis, put its year 2000 costs at up to $175 million.
- AMR Corp.'s American Airlines in Dallas, the No. 2 carrier, reported that it will spend just $70 million on year 2000 compliance.
- UAL Corp.'s United Airlines in Chicago, the No. 1 carrier in the country, said it plans to spend just $60 million on year 2000 issues.

The discrepancy can be attributed to how each airline organizes its year 2000 program.

At PricewaterhouseCoopers, which recently surveyed 850 CEOs in 19 countries around the world.

Of the CEOs polled, 94% said their organizations are "completely or "mostly" prepared to deal with information technology issues related to the year 2000 problem.

Blinders On

At least one analyst found fault with those perceptions.

"CEOs have a big misconception about the year 2000 status in their companies. They don't understand the full scope of the technical or business issues," said Stephanie Moore, an analyst at Giga Information Group Inc. in Cambridge, Mass.

Meanwhile, most CIOs are less optimistic about their organizations' readiness because they're closer to what must be done to mitigate the risks. "No CIOs expect there won't be any problems," said John C. Hodge, CIO at NAC Reinsurance Corp. in Greenwich, Conn.

Instead, Hodge said, CIOs are asking themselves questions such as: "Will I have enough people to work on these problems when they occur next year?"

Culture may also help explain the rift. For example, even in blind polls, CIOs are conditioned against commenting negatively on events that could disrupt their businesses and lower customer and shareholder confidence.

Disparate objectives also come into play. "A CEO will benefit from a rosy perspective [on year 2000] because he does not want the stock prices to fall. A CIO hopes for a bigger budget. So in both cases, they stand to gain from what they have or have not said," said Rick Brown, a Lynnwood, Wash.-based freelance programmer who is working on his fourth year 2000 project for an aerospace company in the Pacific Northwest.

Howard Rubin, a research fellow at Meta Group Inc. in Stamford, Conn., has been tracking the problem closely. He said, "Why [should CIOs] panic [in investors and customers] when the year 2000 is still 10 months away?"

How Ready Are They?

BY THOMAS HOFFMAN

Here's a look at what two public companies, International Paper and Clorox, revealed about their year 2000 plans in 10-Q reports filed with the Securities and Exchange Commission Dec. 31 and released last week:

International Paper Co., Purchase, N.Y.

1998 revenue: $19.5 billion

Year 2000 costs: $135 million, plus or minus 30%

Worst-case scenario: A regional utility failure that would interrupt manufacturing operations and distribution centers in the affected area.

Clorox Co., Oakland, Calif.

1998 revenue: $2.74 billion

Year 2000 costs: $30.8 million

Embedded systems: Expects to complete its plant floor assessment and remediation plans by Sept. 30.

Worst-case scenario: A regional utility failure that would interrupt manufacturing operations and distribution centers in the affected area.

SNAPSHOT

Competitor Comparison

What the nation's top two supermarket chains say about their year 2000 work:

<table>
<thead>
<tr>
<th>KROGER CO.</th>
<th>SAFeway INC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fortune 500 rank</td>
<td>36</td>
</tr>
<tr>
<td>Spending through third quarter of 1998</td>
<td>$10.7M**</td>
</tr>
<tr>
<td>Estimate of total Y2K cost</td>
<td>$321M</td>
</tr>
</tbody>
</table>

*Source: Companies' latest 10-Q filings with Securities and Exchange Commission.

CEO, CIOs Split von Y2K Readiness Question

Execs downplay business disruptions; IT sees technical glitches

Under Control?

How ready do CEOs think their companies are for year 2000?

- Completely prepared: 32%
- Mostly prepared: 62%
- Mostly unprepared: 5%
- Completely unprepared: 1%

Base: 850 CEOs in 19 countries.
Web Training Requires Different Educational Approach

BY BARB COLE-GOMOLSKI

Web-based training may be an inexpensive way to get end users up to speed, but it also means taking a different approach to course development — and often must still be supplemented by teacher-led sessions or other media.

Some companies have cut their training budgets by up to 75% by replacing classroom training with Web courses. As a result, the use of Web-based training is on the rise, particularly when large numbers of users need to be trained quickly [CW, Feb. 8].

"There’s a big misconception that you can take your instructor-led training courses, drop them into a Web-based training system and push that out to end users," said Dean Brown, vice president at D A Consulting Group Inc., a Houston firm that specializes in training systems for enterprise resource planning. That’s not the case, he said.

First, although instructor-led classes may last a day or longer, students usually can’t handle more than a one or two hours of Web-training at a time, Brown said.

And companies that train users in multiple countries have to deal with language differences and cultural idiosyncrasies. "If you are training users in North America and Asia, chances are you will have to present that information differently in a Web course," Brown said.

Technical Difficulties

There also can be technical challenges to Web-based training. Not all companies have TCP/IP to the desktop, and the pictures and sounds of training programs can bog down networks.

Bandwidth was a big concern at companies was able to deploy the training courses without eating up excess bandwidth by selecting a training tool that stores course components at the server and streams them to the desktop on the fly, according to training coordinator Maureen Smith.

As a result of those challenges, some companies continue to use classroom and CD-ROM training even after deploying a Web-based training system.

That was the case at Convergys Corp., a customer service outsourcing company in Cincinnati.

Even though it planned to use Web-based training to get its telephone representatives up to speed on software from SAP AG, Convergys first rolled out some CD-ROM training courses to get people familiar with the general flow of application screens.

“Next, we brought people into the classroom to give them some instruction on basic navigation [of the software],” instructional analyst Peter Richards said. Finally, the company rolled out its Web-based training, which included a detailed help system and application simulations.

BUSINESS

VITAMINS ANOTHER BURGEONING NICHE

Drugstores join specialty retailers in online venue

BY SHARON MACHLIS

AFTER LESS than a year on line, The Vitamin Shoppe Inc. said last week that 10% of its catalog sales now come from its Web site and it expects $20 million in sales there this year. The site was launched in April.

It’s a sign, analysts said, of an emerging online market for vitamins and other dietary supplements, which were an estimated $12 billion business in the U.S. last year and make up one of the more profitable sectors of the pharmaceutical business.

“It’s a potentially huge market,” said Ken Cassar, an analyst at Jupiter Communications Inc. in New York.

Only a few players, such as Mother-Nature.com Inc., GreenTree Nutrition Inc. and The Vitamin Shoppe, focus on selling nonprescription dietary supplements on the Net. But the space is likely to get a lot more crowded this year.

Well-financed newcomers such as Drugstore.com in Redmond, Wash., and PlanetRx Inc. in South San Francisco, Calif., have said they will open general drugstores on the Internet.

And, market giant General Nutrition Cos. in Pittsburgh launched a Web site last month to supplement the $1.2 billion in sales it did last year. For now, www.gnc.com is an unadvertised early foray into electronic commerce. But in October, GNC plans to launch a major nutrition, pharmacy and shopping site (www.gnc.riteaid.com) with drugstore chain Rite Aid Corp.

“It’s not going to be a cheap business to be in,” Cassar said, because the competition will send advertising and marketing budgets soaring. GreenTree, which focuses on dietary supplements, also plans to expand into other drugstore goods, CEO Don Kendall said.

Those now selling vitamins on the Web say customers are looking for information about nutrition and health as much as they’re seeking products.

“They don’t want to point and click and buy. They want to learn a little bit," said Vitamin Shoppe founder and president Jeff Howard. In December, Vitamin Shoppe said it expects a profit in 2000, Howard said.
‘E-MERCIALS’ A NEW ONLINE AD OPTION

Game site delivers captive audience for full-screen messages

BY JEANETTE BORZO

A N ONLINE GAMING site called Gamesville.com has begun to put air personalized, full-screen "E-mercials," presenting a new twist in the current palette of online advertising options. The electronic commercials at the site, operated by Boston-based NineCo Inc., run at full-screen size between regularly scheduled games, so there's no way for users to navigate around the ads. All of the site's nine games, such as AceyDeucey and Crystal Ball, are synchronized to run in the same eight-minute segments around-the-clock, with two-minute electronic commercials separating them.

"They make it a captive experience," said Seema Williams, an analyst at Forrester Research Inc. in Cambridge, Mass. "Often you can ignore or skip past a banner while it's running. But the commercial break is too short to do anything else, so the consumer sits there."

Other capabilities of the NineCo electronic commercials are interactivity and their ability to target viewers by demographics.

"They have taken Web advertising to the next level — the full-screen format lets an advertiser do much more," said Stuart Bogaty, marketing director at New York-based Cone Interactive, which has placed ads for Rolling Stone magazine on Gamesville.com.

Other advertisers running electronic commercials at the site include Microsoft Corp., which targets Macintosh users with ads for Internet Explorer, and SmithKline Beecham Corp.'s Nicorette ad that lets users calculate how much money they spend on cigarettes each year to see what they would save by quitting.

But advertisers don't have to develop an electronic commercial to appear on the site. Gamesville.com can "deliver" viewers to advertisers' sites during the segment breaks.

"There's no need to click through," because players are automatically delivered to the advertisers' sites, Williams said. Users are then notified when the next round of games is about to start. For its part, NineCo claims viewer response rates to electronic commercials that far surpass the average click-throughs on banner ads.

"We're logging 6% to 22% response rates — this is a gargantuan home run in terms of Web advertising banners," said Mark Herrmann, NineCo's sales and marketing director, given that banner ads traditionally have a response rate of less than 1%.

NineCo took a somewhat indirect route into the direct marketing business. It started Gamesville.com a few years back as a game site, which asks viewers for a few pertinent marketing details before they can play. The strategy differs from other online-marketing reward schemes such as those from Cybergold Inc., Netcentives Inc. and Intellipost Corp.'s BonusMail, which take a more direct approach to getting marketing information for commercial purposes (see story at right).

The lure of gaming — bingo, celebrity trivia, NFL team polls and other games that net winners anywhere from $1 to $1,000 — has won Gainesville, Florida

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Instead of just storing customer data, give your decision makers the whole story.

There are a million stories in your customer data—and they're all ready to be sold. With the SAS Data Mining Solution, you can provide your sales force, department managers, and other decision makers with the tools they need to gain true business knowledge.

Which prospects are hot? Or not? Which target groups need to be ignited...or simply delighted? The answers are revealed with the SAS Data Mining Solution. It's the only software that spans every facet of the data mining process, delivering ease of use and analytical depth in a single package—one that draws directly from the award-winning SAS Data Warehouse.

Just point and click. Decision makers don't have to be statisticians, or database experts, to convert very large amounts of data into immediate competitive advantage. To find out more, including real-world success stories and an interactive demo of the SAS Data Mining Solution, visit us at www.sas.com/datamine.
Some Users Delay ERP, Aim at Supply-Chain

Logistics planning tools sometimes deliver quicker payoff than ERP installations

By Craig Stedman

Most companies that want to run their businesses more efficiently start with an enterprise resource planning (ERP) system and then move on to supply-chain planning software. But some are breaking that mold to quickly get at the lower inventory costs, labor savings and other benefits promised by supply-chain tools.

"They've been plugging supply-chain software directly into their mainframe systems, which pass along customer orders and the other business transaction data that the planning tools need to do jobs such as demand forecasting, production scheduling and inventory replenishment." But several users warned that connecting supply-chain packages to a series of standalone mainframe applications is much more daunting and costly than links to an integrated ERP suite would be.

For example, Brunswick Corp.'s Mercury Marine division in Fond du Lac, Wis., "had to be creative" to pull in data from its eight international offices and distribution centers, said Bruce Abraham, director of logistics planning and international distribution at the unit. Most weren't even tied to their central systems, so the company spent three months setting up a way to get the information to the mainframe via dial-up file transfers.

And building the required interfaces between the mainframe applications and planning software from Atlanta-based Logility Inc. took even more time.

"In a lot of cases, the [mainframe] systems were written a long time ago, and finding documentation or people who know about them wasn't easy," Abraham said.

But the planning tools helped Mercury cut inventory of unsold boat motors by 53% when the last model year ended in mid-1998, compared with the year-earlier total of leftovers. Monthly demand forecasts also are more realistic and can be prepared much faster, Abraham said. And the unit still doesn't have a full ERP system in place.

Careful Steps

Moore Corp., a Lake Forest, Ill., maker of printed business forms and other products, is doing supply-chain planning before rolling out SAP AG's R/3 ERP system in its U.S. plants. The company began to use Atlanta-based SynQuest Inc.'s planning tools at two sites in December and plans to add five more plants by summer.

Moore wanted to quickly start doing more sophisticated production planning to cut normally Gottfried said. The additional development cost of a two-way interface was too high to justify with the R/3 rollout due to start this year, he added.

ERP Remains Strong

Most users still go the ERP route before turning their attention to supply-chain planning.

Joshua Greenbaum, an independent analyst in Berkeley, Calif. But many users "are still up to their elbows (finishing) ERP installations," he added.

For example, Valero Energy Corp. plans to finish an R/3 rollout before adding SAP's new advanced planning software late this year or in early 2000, said Hal Zesch, SAP coordinator at the San Antonio-based petroleum refiner.

Connecting supply-chain tools to Valero's old mainframe systems "would have been impossible," Zesch said. The more sophisticated distribution scheduling that Valero has in mind requires reams of data that previously was spread across incompatible applications at four refineries, he said.

Not Waiting on R/3

But VF Corp., a clothing maker in Greensboro, N.C., is going ahead and integrating 12 Technologies Inc.'s planning applications to mainframe systems at an even faster rate before going live with R/3.

Leroy Allen, vice president of re-engineering at VF, said R/3 eventually will replace its mishmash of mainframe programs. But that project was held up when SAP was slow with add-on software for apparel and footwear companies.

Even without the help of an ERP system at first, VF projects that the applications from Irving, Texas-based 12 will produce savings such as a 15% reduction in inventories and more efficient scheduling of workers in its plants, Allen said. But writing 100-plus mainframe interfaces was "very tough," he added.

"Getting good, clean data out of our legacy systems is an issue in every one of our divisions," Allen said. "We're having to do a lot of data cleansing, or else [the mainframe systems] just don't have all the information, and we have to figure out how to get it."
Airline Customers Use E-mail as Soundboard During Crisis

BY ROBERTA FUSARO
Thousands of stranded travelers can generate a lot of E-mail and Web hits, even if they don't expect the airline to solve their immediate problems via E-mail.

At least that was the case for about 450,000 passengers who were caught in the middle of the recent American Airlines pilot sick-out. A spokesman at American said since the sick-out started Feb. 8, the airline's Web site has received hundreds of thou-

sands of unique hits per day — a 40% increase at the peak of the crisis from normal levels. Customers were seeking real-time information about flight cancellations and refunds, he said.

E-mail was up, but most messages were "opinion" postings from passengers lashing out at the pilots. "I don't think our customers view E-mail as a method for solving (short-term) problems," said Tim Smith, an American Airlines spokesman.

He declined to say how the company handles incoming E-mail but said American revamped its Web site last summer and had no problems handling the increased traffic.

Northwest Airlines faced a similar crisis when its pilots went on strike last September for almost two weeks. But the airline used an automated E-mail response system to send canned responses and updates to travelers grumpy about having their travel plans upended.

Paul Long, analyst for online distribution at Northwest, said the strike prompted a 30% increase in E-mail and a 10% boost in page views at its Web site. But he said the company wasn't bowled over by the increased volume of E-mail. In fact, it has realized a 50% increase in productivity (measured in number of E-mails answered per day compared with previous numbers).

A Customer's Friend
E-mail is ideal for communicating with customers during crisis situations — if it's managed properly, said Robert Mirani, an analyst at The Yankee Group in Boston.

In the case of the airlines, E-mail is cheaper to deal with than phone calls. And companies equipped with automated systems can blast E-mails to frequent fliers to give them information about alternate flights or direct them to the Web page for more information.

But E-mail-based customer service isn't universal among airlines.

For instance, Southwest Airlines won't accept E-mail because, according to its Web site, "our ability to support E-mail in a manner consistent with our service expectations isn't fully in place." Site visitors are encouraged to send postal letters, not E-mail.
Finding Training on the Web

Access these four sites to cut down on time spent looking for IT classes

BY LESLIE DOFF

Comparison shopping for information technology training on the Web can lead you through a maze of vendor Web sites until your eyes are bleary and your fingers are bleeding. It’s enough to make you give up that New Year’s resolution to learn object-oriented programming before you even crack open an online course.

But don’t despair. We bring you four sites that will cut your time looking for training so you can spend it counting — in class.

Best Bets
American Society for Training and Development (ASTD) Seminar Agent www.astd.org/virtual_community/seminar_agent

The ASTD’s site is aimed at professional trainers, but it includes this nifty “Seminar Agent” section that’s a blessing to anyone looking for professional development opportunities. It boasts more than 250,000 seminars on more than 3,500 topics taught by more than 1,200 vendors — lofty claims, indeed, but very few topics relevant to IT professionals are lacking here.

Notably, a search for PeopleSoft Inc’s human resources software was a bust, but searches for most other IT topics (such as SAP, Oracle, Project Management and Network) yielded ample choices — such as a whopping 956 seminars on Windows NT between December and June. Registration is requested but not required. The search engine is easy to use, quick and thorough, enabling users to search by training topic or by keywords in a course title. You can also plug in locations or dates. Course descriptions are current and complete. Best of all, each one offers users the chance to request more information or register online — presto-chango, you’re all set.


In an old routine from his stand-up comedy days, Steve Martin quipped that banks always have officious names because no one would trust one called “Fred’s Bank.” The same rule of thumb can easily be applied to Web sites: Too often, personal collections of links by well-meaning individuals are highly subjective, poorly organized and out-of-date.

Wayne’s Comprehensive Computer Professional Certification Resource is the exception to the rule. Maintained by Wayne Lindimore, a certified systems analyst at a large insurance firm in Denver, the site is comprehensive to a fault, listing the certification programs offered by more than 25 technology vendors and professional associations. It’s smartly organized, too. Lindimore links you directly to the certification pages at a vendor’s site — not the home pages. With one swift click, you can get the lowdown on programs ranging from 3Com Corp.’s Master of Network Science to Xplore’s Electronic Document Printing and Professional Certification.

Moreover, using the links in the left-hand frame, you can find out how many IT professionals are certified in various technologies, get the most current certification news released by vendors, link to user groups and newsgroups and tap in to more than 40 resources for self-study and test-preparation materials.

Winners-Up

Use this searchable database, developed by Inside Technology Training magazine, to connect with hundreds of training vendors and professional associations. Search by product/service (a categorical listing often includes public courses, distance-learning classes, multimedia coursework and training tools), location or vendor name to generate lists of relevant companies. Click on a company name for a description of its offerings, as well as contact information and uniform resource locators.

Be warned: The write-ups are provided by the vendors, but the editors have profited from the hype in check. This site is especially useful if you’re searching for training solutions for a team or department.

The Training Registry Inc. www.trainingregistry.com

The Registry offers an exhaustive listing of courses, but it makes you work pretty hard to get detailed information. Course links take you out of the site and are frequently broken — be prepared to hit your “back” button more than a few times. Still, if you’re patient, the site can be a decent ally for the training-minded IT professional. It provides information on instructor-led training, including class and public classes and multimedia coursework, as well as an alphabetical list of training companies, lists of available facilities for training and conferences, speakers and presenters and training tools.

Search the course listings by topic or location. Topics include information technology/software development, Internet/intranet and programming languages and more. Each category is broken down into seemingly endless series of technical subcategories. Searching by geographic area covers Washington and 35 states, with the larger states organized by metropolitan area. Courses in the U.S. and the U.K. are also listed.

Doff is a freelance writer in New York.
Strange ‘Web’fellows

M ost companies have now faced the inevitable: Customers rule. Totally. Indeed, the advent of Internet auction services such as eBay — and the digital convenience of an Amazon.com — are training a vast generation of consumers and businesses in a whole new way to “shop around.” And this phenomenon isn’t going away. Sensing this, almost every company I know of is dramatically rethinking its IT infrastructure investment to broaden its customer channels. What hasn’t been widely understood, though, is this principle’s concomitant: To offer more choice and value to your customers, companies will have to cooperate more with their competitors. The necessity is to create “our” customers — and lots of them — so that all can share.

This idea, sometimes called “co-opetition” or “business alliances,” has been, up to now, an academic notion. A large number of alliances — especially those between technology companies — have failed. For example, RealNetworks, which makes devices for watching video and listening to audio over the Internet, had a falling-out with Microsoft. It was a short-lived “co-operative” relationship.

The problem was that RealNetworks, with an 85% share of the market, directly competes with Microsoft’s Windows Media Player. Yet, co-opetition isn’t entirely dead for RealNetworks. It still has deals with AOL, IBM and Intel.

An alliance fails usually for one of two reasons: one competitor becomes powerful and decides it must dominate the other, or the “partners” lose sight of their joint objectives.

In the Internet domain, the shared objective is simple: Build a marketplace that’s so complete in its scope of service and product that your customers won’t need to go anywhere else. That notion has only recently been understood in the services business. An example is Charles Schwab & Co.’s bold decision to sell competitors’ mutual funds. Schwab recognized it would hold on to more customers if they didn’t have to go elsewhere to shop for investment products. But even today, that idea still seems foreign to some large financial services companies.

In digital marketplaces, the idea is catching on. Last August, Weirton Steel announced the formation of an independent company called MetalSite to offer a secure, Internet-based marketplace for the sale of secondary metal products from a number of U.S. suppliers (www.metalsite.net). Several of these are Weirton’s competitors, but there’s no better way to get customers to come to your site than to offer most of the industry’s available inventory.

Of course, there’s the strategy of becoming so big that you can directly offer all the products and services your customer needs without the help of your competitors. But recognize that there are very few companies that will achieve that scale and, in the end, it may not be the most cost-effective way of holding on to customers. Even Amazon.com can’t keep every book title in its warehouses. I wouldn’t be surprised to see Amazon inviting specialty bookstores into its marketplace, rather than competing.

But operating side by side with competitors requires attention to fair play and good behavior. Otherwise, expect your alliance to fall apart as other alliances have. So here’s some advice:

■ Remember that the destiny you share is the creation of the most complete marketplace that will hold the attention of the largest number of customers. Hold off killing each other — at least for a while!
■ Don’t try to dominate the alliance. The company with the best product and service at the best price will make the sale.
■ Digital markets are near-perfect.
■ Respect what your competitors offer. Sell your benefits, not their faults.

Some of this may sound fundamental — and it is. We’re building markets here. The first step is to learn how to share these new channels.

Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. Contact him at jchampy@ips.net.
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Answers for the Information Age

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Fed-up users and consumer advocates say vendors are tracts are ground out. At stake: higher costs and basic
of the incidents recounted by user advocates. For example, regarding the allegation that key provisions never made it into the draft, he says, "I don't think the committee agreed to do that." He explains that interpreting the committee's will is easier said than done. "I'm trying to keep track of 120 people making comments, plus I'm responding to suggestions," he says. "It gets pretty intense."

Defending the Vendors

Robert Holleyman, president and CEO of the Business Software Alliance, a vendor representative, maintains that users are missing the big picture. "We have to look at the trees, which is the drafting process, but look at the forest," he says. "The draft is good because it will really allow the codification of the three Rs: replace, refund or repair."

Committee Chairman Carlyle "Connie" Ring insists the current draft includes several protections for users, such as the following state consumer protection law overrides Article 2B; "unconscionable" terms, or terms contrary to fundamental public policy — such as prohibiting written reviews of a software program, which would violate freedom of speech — are unenforceable; and the concept of "mass market" extends consumer protections, in very limited circumstances, to some business users, such as when a small company buys one retail copy of a shrinkwrapped program.

But those protections are more easily enumerated than exercised, says David Rice, professor of law at Roger Williams University in Bristol, R.I., and an American Law Institute (ALI) representative on the 2B drafting committee. "The defaults are set almost entirely on the license/user side having to do the bargaining," he says. "The person who brings the challenge has to bear the burden and the cost of litigation."

Rice says vendors often defeat user safeguards with one-sided arguments about the cost of a provision. For example, regarding the rules restricting transfer of a license (see related story at right), he says, "I see that as serving the software and information publishers' interest with no consideration of the costs to the rest of the world."

Proponents of the draft say buyers who don't like default terms are always free to negotiate their own. But Rice demurs. "You can negotiate," he explains, "but standard forms are enforceable, and that means the burden of negotiation is on [your] side. Unless you've got an awful lot of bargaining power, these terms are not bargainable."

The ALI, which cosponsors the UCC process, has declined to support the current draft, and recently, more than 20 participating groups have given up trying to fix 2B and recommended that it be tabled. "At some point," Paglia says, "the weight of opposition becomes so great they will have to put it away." "I'm not saying that some of the criticism by users isn't legitimate," Ring says. "If it were up to me, I would probably write a different product than the current 2B," but the software lobby would defeat it. "I've got to develop a consensus, and that's got to fall in between a glass half-full and a glass half-empty.”

But many user advocates say it's time to put 2B out of its misery and throw jurisdiction back to the more general Article 2, which currently governs software transactions. "2B cannot be fixed," Paglia says. "Our only strategy at this point is to kill it."

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Putting Vendors On the Grill

Dave Weidenfeld functions as McDonald's Corp.'s chief technology counsel, the in-house lawyer with the final legal word on the Oak Brook, Ill., fast-food giant's information technology contracts. We asked this tough negotiator to share what he has learned after 15 years on the IT legal front line. Allan E. Alter, Computerworld department editor, Managing, conducted and prepared the following edited version of the interview.

Why did you decide to specialize in IT contract law?

I was interested in what technology does. And I enjoy working with the technology people. They're straightforward. Their real vision is to help create the future. It's fun to help them get there.

What's the most ridiculous clause you've ever seen in an IT contract? There's a bunch that compete for attention. The one that really leaped out was this business about a license having the right, when you reported a problem, to decide whether the problem was a typo or an error in the product specifications. That makes their ultimate responsibility to simply correct the specifications, not to fix the problem.

Who are the toughest vendors to negotiate with?

Microsoft is really hard if you're trying to affect the price. They are among the least willing of anybody to make changes to their contracts. Each of the big companies has a sacred cow they don't want to touch. Historically, Computer Associates wants you not to modify their form because of how it sets up licensing. IBM, too, but they've been more amenable to change in the past few years than in the past.

What are some of the other sacred cows? Who can use the software on your behalf. Computer Associates is more sensitive than others. Most vendors want to make sure you're not going to let a service bureau provide processing for you, and therefore process a number of people off the same license.

What's the best time of year to negotiate with vendors? At the quarter or year's end. If the vendor is not where they wanted to be in revenue, there's a tremendous internal pressure to close deals.

What's the most important contract language to seek out for any language about dropping support.

How do you get good at negotiating with vendors?

You learn by doing. But more than anything else, it's a lot of training. It's important for IT folks to train their lawyers. If IT people don't, the lawyers don't recognize the issues that are important to them.

What are the dumbest common mistakes IT people make when negotiating? The easiest one is to select the vendor first, then negotiate. Another is to communicate to a vendor in such a way that they understand the deal is theirs. The third is to let the vendor control the clock — where the vendor says you only have until Friday to buy this software. If you tell that to a car dealer, you know what will happen when you negotiate over the price.

What is the most undervalued negotiation tool IT people have? The big one is to not go through an RFP [request for proposal] process. The advantage when using an RFP is you get multiple vendors, a level playing field and the ability to negotiate with more than one vendor before you select the vendor you go with. That makes all the difference.

Who are the best people to negotiate with on the vendor side? If you want to get concessions that the vendor doesn't usually grant, you are better off talking to the local sales branch. They have more latitude to do local, specific deals. When you are talking about far-reaching changes, it will take corporate assent, but you will still need the local champion — someone at the vendor who sees the value of the relationship with your company.

What do you do when a vendor says "no" to a contract change you really want? How do you get it to agree? It's a question of who has more stamina. "No" doesn't mean anything.

What about getting year 2000 protection? I think Y2K clauses belong in every software license agreement we enter into. A vendor who says, "I can't live with your standard" is a vendor we need to tell, "We can't live with your product."

Weidenfeld's Top Three Techniques for a Great Deal:

1. You need to put together a team with all the skills you need to complete the transaction: business, technical and legal. That team has to be kept together so the knowledge it builds over time isn't dissipated.

2. You need more than one live vendor. No competition leads to a very difficult negotiation.

3. The folks in the IT organization must know what's going on and be willing to let you say no. Even if they need the solution, they need to give you the capacity and the stamina to say no. The vendor must know your "no" means "NO" — that they can't go above you to an officer.
Demand for skilled IT professionals remains high across the board, but especially in these 10 job markets
By Leslie Goff and Emily Leinfuss

Banking and Insurance
Banking and insurance firms certainly have a lot of legacy systems to worry about. But the year 2000 problem isn't the only thing driving hiring in those industries.

Shifts in the way information is delivered to customers are shaping hiring demand in banking, says Chuck Hobbs, a senior vice president and group executive of information services at Wachovia Bank in Winston-Salem, N.C. Internet-based banking, mortgage loan automation and development of data warehouses are just some of the projects creating demand.

What hiring managers value are good business sense and an understanding of what they are trying to accomplish. "That's more critical than ever before because banking is changing so quickly that in IS, we have to be able to adapt. So people who understand retail banking delivery strategies and plans will be key," Hobbs says.

Building and Construction
The building and construction industry encompasses many niches, from residential construction to industrial plant design to roads and highways and more. And they share a consistent need to facilitate collaboration among contractors, designers and other partners.

To that end, Web-based business practices and extranets are emerging as a mainstay, and automated project scheduling and management systems are rapidly proliferating. Together, they gradually are creating new opportunities for IT professionals, says James House, director of information systems at Morrison Knudsen Corp. in Boise, Idaho. House is based at the company's largest division, Engineers and Constructors in Cleveland.

"This is a low-margin industry, and while IT has always created a competitive advantage on the engineering side, on the building side, we are only recently seeing the benefits from large investments in IT," House says.

Zimble says he's looking for business and technical services and extranets to leverage ready to adapt in a fast-changing business requirements and new client needs. Couple those demands with overall market expansion, and you have a booming sector for IT professionals. The industry needs professionals who can deal with a multitude of end users, customize off-the-shelf software for specific situations and manage rapid application development.

"We need to be very up-to-date to attract clients and inspire our confidence in us," says Gary Zimble, director of technical services at Headway Corp. and The Whitney Group in New York, which provides human resources consulting and staffing services.

Zimble says he looks for IT workers who can help build those internal efficiencies. He says he's more likely to hire a rookie with proven smarts than an experienced worker "who has a vague knowledge of a lot of different subjects."

Health Care
The overall trend toward managed care and the increasing integration of patient-care systems with pharmacy, billing and other automated medical systems is changing head-on with critical year 2000 requirements.

"We're not competing only against health care providers, but against the whole IT industry. And the demand is clearly outsourcing the supply," says Jim Hedeman, information systems administrator at Johns Hopkins Medicine Center in Baltimore. Hedeman serves as a liaison between IT and human resources.

Health care, like all industries, is recognizing the need to give all decision-makers — doctors, nurses, pharmacists, finance and billing staff, and managed-care contractors — timely and high-quality information. IT needs solid professionals who can join various platforms and systems together into a seamless whole, Hedeman says.

Some positions demand industry experience. Those include folks who have worked with vendor Shared Medical Systems' software. Others require proven technical experience, such as linking a mainframe billing system with a midrange Unix-based pharmacy system, Hedeman says.

And though new projects continue in the face of year 2000, the millennium bug is provoking a careful evaluation of which systems to pursue now and

Continued on page 56
Overall demand for retail technology professionals outstrips the supply, Jago- da says. "We are looking for people who can really augment technical skills with business knowledge, communication skills and who can understand the pieces and parts of the supply chain," he says.

Transportation and Utilities

Transportation companies fighting for competitive edge are racing to develop systems to power "intelligent freight" — where electronic tags can identify and track every shipment along its delivery cycle. At Ryder Integrated Logistics in Miami, that means enterprise-based, Web-powered, next-generation inventory. The company needs IT professionals who can handle C++ coding and Java application development, as well as database architects and engineers, and integration specialists who can handle Common Object Request Broker Architecture standards. But especially wanted are "effective, efficient senior programmers," says David Shea, vice president and technology.

As technology accelerates, so do salaries in the transportation and utilities industry, Shea says. And as long as IT professionals are customer-focused, they will advance in this industry.

Utility companies face similar challenges as they move from older, more rigid businesses to fee-based service models. At Consolidated Edison Company of New York Inc., IT professionals need to be flexible and willing to learn, says systems manager Steve Marcorri-gianco. "We look for people who are analytical and have a good understanding of technology," he says. Useful technology skills include expertise in client/server, Internet and intranet development and mainframe development skills.

Education

Margaret Knox's dream IT hire for development and programming would be a musician with a hard science background who's a team player. "You would get creativity, and logic and procedures and user-orientation all in one," says Knox, associate director of academic computing and instructional technology services at the University of Texas at Austin.

The education arena touts its atmosphere of learning, inventiveness, experimentation and yes, even fun, as a foil for offering the lower end of the salary range. But those bottom-level salaries may be changing, thanks to the competitive job market, Knox says. "We are doing a better job of matching commercial salaries," she says.

In administrative systems, which are most like business systems, David Trefveatt, director of administrative systems at the University of Chicago, says classic IT skills, including Cobol and CICS, are still in demand in education, but the industry also needs people with database skills — both transactional and for data warehousing. "We have the complexity of huge corporations but not the size. A given person may wind up doing a wide mix of tasks," he says.

Goff is a freelance writer in New York. Letfus is a freelance writer in Sarasota, Fla.
SCHOOL-TO-WORK PROGRAMS: high hopes, low turnouts

Constrained by the well-publicized shortage of information technology people with four-year college degrees, IT companies are using school-to-work programs to turn high school and two-year college students into potential hires.

By Steve Alexander

started the Cisco program at her school, but only 20 finished because the work was difficult, Voss says.

"We spent so much time in class, and we stayed after school until 8 or 9 p.m. But it looks good on your résumé if you've taken this class because it's really hard-core, not something simple," Voss says. Now a freshman at the two-year College of San Mateo in San Mateo, Calif., she plans to transfer to a four-year school to study computer engineering.

Sun Microsystems Inc. began school-to-work programs early last year at Mission College in Santa Clara, Calif., and Ohlone College in Fremont, Calif., both two-year schools. Students work on certification as Unix system administrators, and Sun helps with curriculum design, offers teacher internships and sets up computer labs, says Leslie Bowers (leslie.bowers@sun.com), Sun's enterprise network services workforce program manager in Milpitas, Calif.

The program's goal is to increase the IT hiring pool while seeding the market with Sun-related expertise, says Pat Deagman, Sun's vice president and general manager of enterprise network services in Palo Alto, Calif. What's more, Sun expects to hire two-year college graduates for approximately 20 less than it pays four-year graduates, and it should be able to train and advance them faster because of their college studies, Deagman says. But the proof of that concept still lies ahead.

Other companies also are betting on the future. A year ago, Oracle Corp. began a two-year, $250 million investment in school-to-work programs at several two- and four-year colleges.

The Autodesk Foundation, which is 70% funded by Autodesk Inc. in San Rafael, Calif., since 1993 has offered high schools a variety of on-the-job IT experiences, including "shadowing" a professional at work, having staffers give talks to students and offering internships for the help desk, programming, quality assurance and testing. Interns can work for school credit or be paid an average of $7 per hour, says Judy Morgan (judy.morgan@autodesk.com), director of school-to-career programs at the Autodesk Foundation.

"It increases the pool of qualified applicants, reduces the costs of training, is good for the company's reputation in the community and enhances employees' morale by letting them work with students," Morgan says. For the program to work, both interns and their company managers must know their responsibilities, and someone must follow up to make sure the arrangement is working, she says. The company believes its mentorship of students will pay off for the industry, but it has few students on staff.

Dan Trimble (dtrimble@edgemaedia.net) started as an Autodesk Foundation student intern and kept on after his 1997 graduation from Terra Linda High School in San Rafael, Calif. As a senior, he worked 30 to 40 hours per week and got school credit for it. The next year, he became a full-time employee and is now manager of Autodesk Foundation's Internet development.

"This program is aimed at everyone, college-bound or not," Trimble says. "Students have found the program has given them a new life: They've been able to learn how to work, what it's like to be in a corporate atmosphere, how to deal with other people and how to be responsible."

Adds Morgan, "Dan Trimble started part-time when he was 14. He's now a full-time employee, the foundation's webmaster and our computer guru. And he's just turned 20."

Alexander is a freelance writer in Edina, Minn.
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Dear Career Adviser:

I'd like to know where I can find good salary information on the Web for permanent technical positions.

— CASH IN HAND

Dear Cash:

If you frequently look at salary information, you will soon see that salaries for high-tech people in general exceed those of the rest of the population. Furthermore, within high tech itself, there’s a top tier for the anointed few that possess the latest, greatest electronic-commerce, Web, database and enterprise resource planning systems skills.

To find salary surveys, check out the Economic Research Institute’s Web site (http://204.203.220.1), with about 200 surveys listed, and The LinkZone (www.thelinkzone.com/salary.html). There you will see a particularly good collection from Datamasters (www.datamasters.com/survey.html), where information is broken down by region and major IT job functions such as CIO, year 2000 manager or Web developer. Datamasters further labels each job function with a “Median Low,” “Regional Median” or “Median High,” plus a time line so you can see how salaries have progressed from 1990 to 1998.

Some interactive surveys, such as that from New York–based Pencom Systems Inc. (www.pencom.com/industry.html), require you to fill out information about yourself before you get the information, but check out similar interactive offerings with no such requirement at www.washingtongpost.com and http://styelive.com/technacials.

And don’t forget Computerworld’s annual salary survey — see the latest one at www.computerworld.com/more.

Dear Career Adviser:

I’d like to know about E-commerce jobs from a technical and management perspective, as well as understand the salaries in this field. What do companies look for in an E-commerce manager? Do I need an MBA or other degree to advance? Are companies looking at E-commerce managers to fill CIO positions in 2000? — E-COMMERCE CRAZY

Dear E:

Whether you’re working in Internet encryption security for stock trading at Charles Schwab & Co., job posting and resume matching at CareerMosaic or graphical user interfaces for easy auction sales at eBay, electronic commerce is one of our century’s true revolutions, as every company moves its web, marketing, sales and transactions to the Web. The field is exploding with growth opportunities. Although certainly more jobs exist at technology levels than for top managers, managers need business and bottom-line experience. You also will need to stay current about mergers, initial public offerings, acquisitions, the latest hot technologies and their implications for bottom-line revenues. So immerse yourself in reading material, conferences and coursework.

More specifically, the electronic-commerce manager, Frederick D. Lowe, director of development at mypoints.com, a service of MotivationNet Inc., an MBA with a bachelor’s degree in computer science looks great on paper, but if the candidate has no commercial Web background from prior work experience, the knowledge gap is tough to bridge.

That, he says, is because electronic commerce now encompasses so many technologies, ranging from Web servers, databases, multiple programming languages, multiple Internet protocols and so on.

Regarding salaries, Lowe comments that electronic-commerce managers can earn far more than IT managers.

But many electronic-commerce companies are also Internet start-ups, so look for between 10% and 50% of base pay in options or stock, and signing bonuses between 10% and 20% of base pay. Check www.expertnet.com and The Industry Standard’s Feb. 1 issue covering “What Internet Professionals Make,” www.thestandard.net.

Bottom line: This is one exciting field.

Dear Career Adviser:

My field is installing and troubleshooting networks, Exchange E-mail and telecommunications systems. I want to know whether I should go out as a consultant or stay within a company as an employee. Also, if I go out on my own, I don’t want to place myself through contract brokers but prefer to get jobs directly. Is that possible? — ON MY OWN

Dear Own:

Going out on your own as a consultant is a little more complex than just deciding to do it, because there are many tax and legal considerations. If you work through a contract broker, they put you on payroll and do all the paperwork so you usually avoid Internal Revenue Service audits questioning whether you’re a contractor or an employee of your client company.

But going out on your own is determined by whether you can generate enough revenue. A lot of independent consultants simply find that they’re involved in an assignment, they start a new business and that when one assignment ends, they have to hustle, which can be pretty stressful.

San Francisco–based David Arrants, whose business Carefree Computing Services offers computer network consulting, has been on his own for five years, getting new assignments by constantly talking to people.

“Make sure when I present to a potential client that I show them while I’m there that I can really solve one of their problems. It may take me a little longer to do this,” he says, “but then they generally hire me to do the work.”

Last but not least, if you’re sure you don’t want to work through brokers, when you post your resume on newspapers or job sites, be sure you convey that information clearly. Otherwise, you will get a lot of broker calls that will just frustrate them — and you.

WORKSTYLES

What It’s Like to Work in IT at . . .

Illinois Department of Corrections

Interviewees: Scott Lovdahi, a data administrator who helps manage a fast-growing database of inmate demographic data and digital photos. Location: A converted seminary in Springfield, Ill. Other offices there include administrative, executive and the correction officers’ training academy.

Office layout: Cubes with midsize walls. For any of the 30 to 40 programmers, help desk staff and administrators in the office to see one over the cube walls, people must be standing.

Office environment: Cubes are decorated with photos and cartoons, and some people have (quiet) radios.

Special recognition: A “Group of the Week” certificate used to be awarded to the office’s grouchiest worker, but it hasn’t been seen for a while.

Special activities: The old seminary’s facilities include an aerobics room, a weight room and a large gymnasium where workers hold spirited lunchtime basketball games. An Elvis impersonator recently appeared to deliver birthday greetings to one office worker.

Dress: “Jeans and sport shirts mostly. But you dress up a little more when visitors are coming.”

Visiting prison facilities: IT staff visit prisons, sometimes as often as once per month, to install or service equipment, which is located in a secure area. Minimum-security facilities are more casual and relaxed than maximum. Lovdahi said: “The first time you go into a maximum-security facility, it is intimidating — big gates slam behind you, everything is plain concrete, and sometimes the inmates holler at you. But when you’ve been a few times, you get used to it.”

What to wear when visiting maximum-security facilities: “Don’t wear jeans and a denim shirt. You might get mistaken for an inmate.”

Quote: “People are interested in what we do because the general public doesn’t get to hear about what a roundhouse looks like and what prisons feel like from the inside.” — Stewart Deck
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MIDDLEWARE LINKS DATA
OpenLink Software has developed server-based middleware that, it claims, could more easily link the Web to popular databases. One of a new class of "virtual database engines," Virtuoso would eliminate the need to maintain database drivers on client PCs. » 66

FINE-TUNING NT PRIVILEGES
Windows NT administrators are caught in a bind: Current versions of NT don't make it easy to fine-tune administrative privileges, Windows 2000 won't ship at least until the end of the year and there's a lack of third-party administrative tools. We look at how several customers are coping. » 64

MULTIMEDIA E-COMMERCE
Users with E-commerce sites who want high-quality multimedia but don't want to struggle with crowded and unpredictable networks might try a hybrid approach: using a CD or digital video disc to supply streaming digital video and a Web connection for the E-commerce engine. » 68

PLUG-IN ROUTER FOR NT SERVERS
Start-up Effnet Inc. has developed a Windows NT server plug-in card that allows servers to perform high-speed routing as well as some firewall functions. But analysts are skeptical because NT already provides some of these functions for free. » 69

PROFILING JAVA APPS
Java profiling tools can help developers find trouble spots in their applications and then make the necessary changes to boost their performance. » 64

FRANKLY SPEAKING
Few know what Microsoft's top secret project (code name: "Cool") is, but columnist Frank Hayes weighs in on what it ought to be: an easy system for developers to design and generate big chunks of distributed applications automatically. » 72

QUICKSTUDY: DCOM
Microsoft's DCOM lets pieces of applications work together across the Internet. We explain how DCOM works and how it differs from rival CORBA. » 73

FLASHBACK: 1956
MIT developed the first programmable, general-purpose computer to use transistors. And Elvis appeared on The Ed Sullivan Show. Talk about a good year. » 78

FORMING A SAN PLAN
STORAGE-AREA NETWORKS (SAN) promise to be hot. The goal is centralized storage in a LAN, and users hope for heightened manageability and high availability of data. But the pieces of the SAN puzzle aren't on a solid foundation just yet: Standards are still forming, and the technology is still immature. Early users offer their implementation experiences and product choices in Field Report.
**IBM's SpeechML**

IBM last week introduced Speech Markup Language (SpeechML) for building and running interactive speech applications. Based on Extensible Markup Language, SpeechML will make it easier to tag pieces of a conversation. IBM plans to submit SpeechML to the World Wide Web Consortium for standardization. SpeechML is available for free download at IBM's alphaworks site. [www.alphaworks.ibm.com](http://www.alphaworks.ibm.com)

**Graphics Export Tool**

Macromedia Inc. next month will begin to ship Fireworks 2, a Web graphics production tool that can export graphics to most HTML editors. According to the San Francisco company, the new version adds direct support for scanners and digital cameras and lets users initiate satellite graphics editing. It has a new "swap image" rollover option that's recognized as a native behavior in Dreamweaver, Macromedia's HTML editor.

The tool costs $199. [www.macromedia.com](http://www.macromedia.com)

**Trend-Recognition App**

SPSS Inc. is shipping Neural Connection 2.1, software that recognizes patterns and trends in database information. According to the Chicago company, the Windows software can perform prediction, classification, time-series analysis or data segmentation. It was designed for financial research, operational analysis, market research and database marketing.

One new feature is the ability to use an unlimited number of cases in the "run" data set. The software costs $1,999. [www.spss.com](http://www.spss.com)

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**Flexible Security: An NT Sore Spot**

All-or-nothing access many tools' shortfalls

By Sharon Gaudin

**A FEW YEARS AGO** at Wells Fargo & Co., there were an awful lot of people with their fingers in the NT administration.

The financial services giant had given 150 to 200 people full-fledged administrative authority, according to Darrick Richardson, senior enterprise administrator at Wells Fargo Technology Services Co., Wells Fargo's San Francisco IT arm.

Richardson explained that any time they had wanted to give, for example, a help desk staffer the authority to change a password on Windows NT, it meant giving them wide-ranging authority to change passwords, personal IDs and other critical information on any of Wells Fargo's 3,000 NT servers.

"That's 200 people who can do absolutely anything they want to any part of the environment," Richardson said. "If your intent is trying to just let someone change their password, that's like killing a moth with a hammer."

**Facing Quandary**

Wells Fargo isn't alone. IT managers find themselves in an administrative quandary with Microsoft Corp.'s Windows NT that they don't with Novell Inc.'s NetWare operating system or with Unix.

Users and analysts agreed that many, if not most, administrators give people authority to do things such as change their own passwords because they simply don't have time to handle those small tasks.

NT will gain that kind of granular capability with the release of Windows 2000, formerly known as NT 5.0, said Patrick Dryden, an analyst at Cambridge, Mass.-based Giga Information Group Inc.

But Windows 2000 isn't slated for release until year-end, and some analysts tack another six months onto that deadline.

So for managers who don't want to wait, the answer lies with third-party tools. The problem, analysts said, is there's slim pickings among such tools.

Industry watchers said Mission Critical Software Inc. has a better product with its OnePoint Enterprise Administrator lets companies customize the number of people given broad security access.

**Analysis Tool Helps Find Java Bottlenecks**

JProbe measures time, memory usage

By Carol Silvia

Developers continue to complain about lagging Java performance, but some of the latest analysis tools can help developers remove performance blind spots.

Due next month is an upgraded version of Toronto-based KL GROUP Inc.'s JProbe Suite, which adds memory debugging, thread analysis, code coverage measurement and support for Sun Microsystems Inc.'s Java 2 standard to its performance profiling capabilities.

Pricing for the upgraded JProbe Suite starts at $999.

Other analysis tools that can help developers locate and eliminate bottlenecks in Java applications include Nashua, N.H.-based Compware Nu-Mega's TrueTime; Cupertino, Calif.-based Rational Software Corp.'s Visual Quantify; and Sun's Java Workshop. "Even though Java is a simpler programming language than C++, you can still write bad code in Java," said Anne Thomas, an analyst at Patricia Seybold Group in Boston. "These tools help you write more elegant and efficient code."

Because Java automates garbage collection — the disposal of unused memory — many developers find it easier to work than C++. But if a developer doesn't de-reference an object that's no longer needed, the object loiters and memory isn't freed. That, in turn, can lead to slow performance.

Tools such as JProbe help find extraneous objects through a visual representa-
Winner of the Database Race.

Ever wonder if there might be a new, powerful and easy-to-use database management system that can solve your performance and scalability problems?

It's called Caché — the "post-relational" DBMS that offers advanced object technology, Web connectivity and faster SQL performance. Caché can do so many good things that it has won a prestigious international award as "the most exciting new database product".

Caché is already in use today in hundreds of enterprises, ranging from small entrepreneurial companies to the world's largest client/server network.

Caché is the latest database technology from InterSystems, the worldwide leader in high performance database products for transaction processing, with over 2,000,000 users... and 20 years of database experience.

The "best new database" is from a well-established company.

"Best New Database"

-1998 Information Management Award Sponsored by Deloitte & Touche Consulting Group
OpenLink's Virtuoso takes server-based approach to linking interfaces, databases

BY CYNTHIA MORGAN

A NEW "VIRTUAL database engine" that links diverse legacy databases through server-based middleware may solve one of IT's bigger headaches: providing uniform, direct Internet database access without swamping shorthanded technicans.

OpenLink Software Inc.'s Virtuoso can connect database interfaces such as Java Database Connectivity (JDBC), Open Database Connectivity (ODBC), DB-LIB and OLE-DB with Microsoft SQL Server, Oracle Corp., Computer Associates International Inc.'s CA-Intgres and other popular databases.

Residing on the server, it eliminates the need to install and maintain multiple database drivers on every client and could potentially increase performance and reduce the amount of technical support required to give users access to older or nonstandard database information.

Virtuoso will deliver uniform database services such as queries, replication and concurrency control across an array of different databases, said a spokesman at the Burlington, Mass., company.

Unified database interconnectivity isn't a new idea: Microsoft Corp.'s Universal Data Access (UDA) standard first was developed to tie together multiple versions of ODBC with newer OLE-DB applications. Sun Microsystems Inc. has promised similar interconnectivity with its JDBC Data Access standard.

UDAAs have become an accepted "glue" for connecting one database to another, especially as Web applets increasingly need real-time access to older databases.

Disparate Formats

"Because we're a mature company, we've been collecting data for a long time," said Mike Jewett, manager of the Information Resources Group at Longo Drug Stores Corp. in Walnut Creek, Calif. "It's in all kinds of formats that we currently have to access from our users," Jewett said. "They don't want self-serve applications that help you build your own queries; they want full-serve Web interfaces that deliver automated reports without delay. To achieve that vision, we need tools that allow us to quickly link these databases to our Web front end.

Jewett said Virtuoso's server orientation would serve large enterprises well.

"We generally prefer them to client-based tools because they're much easier to manage and usually offer a lot of power without a performance hit," Jewett said.

The package, scheduled to ship this spring, will support a variety of platforms, including Windows NT, Mac OS, OpenVMS, OS/400, BSDI and popular flavors of Unix such as Linux on Intel Corp. boxes, IBM's AIX, Sun's Solaris and Hewlett-Packard Co.'s HP/UX.

Pricing starts at $99 for a single-client license and ranges to $15,000 depending on the number of servers, clients and concurrent database sessions supported.

A free, two-client version that supports 10 database sessions can be downloaded from the company's Web site (www.openlinksw.com).
Up to 2-way Pentium® II processors (up to 450 MHz) / Up to 1GB SDRAM ECC memory / Starting at $3,364*

Introducing the worry-free Netfinity 5000 server from IBM. It's fast. It's reliable. It keeps your business running smoothly 24 hours a day. So now you can catch some shut-eye without shutting down your business. It's hot-pluggable (add disk drives without turning it off), scalable (add storage and processors as you grow) and lets you manage your network remotely. It also runs Windows NT® and includes light-path diagnostics for more accurate problem detection, as well as access to Web Server Accelerator software, giving customers quicker access to your Web site. Take the worry out of running your e-business. Visit www.ibm.com/netfinity or call 1 800 IBM 7255, ext. 5017.

THE IBM NETFINITY 5000 SERVER

YOU NEED SLEEP.
YOUR BUSINESS DOESN'T.
**WEB SITES PUT VIDEO ON DISCS**

Local storage of bulky multimedia files avoids bandwidth crunch

**BY NANCY DILLON**

Faced with waiting for enough Internet bandwidth to pump full-motion video out to Web shoppers, companies like Trashy Lingerie now use multimedia CDs that offer broadcast-quality video and bring buyers straight to the check-out pages of their electronic-commerce sites.

Trashy Lingerie, a Los Angeles apparel retailer, added electronic-commerce capability to its Web site (www.trashy.com) three months ago. The site has plenty of static graphics, but no real multimedia to set it apart. To help meet the goal of making the site a bigger money-maker than its famous L.A. store, officials decided to add a 20-minute CD movie featuring the company’s apparel.

The CD is based on a proprietary database that can cue up targeted Web links while the video is playing. When you see an actress wearing something you want to buy, you just click on the button and it takes you to our shopping cart section,” said Mary Loomis, director of Internet operations at Trashy Lingerie. “And rather than people aimlessly flipping through a lifeless catalog, the movie is going to hold their interest.”

Loomis said the “PG-rated” movie has a scripted plot, professional actresses and several comic elements. Produced with SellOnstream Java software from San Carlos, Calif.-based ImaginOn Inc, it features MPEG-2 video and MPEG-1 sound. Trashy Lingerie plans to distribute 10,000 CDs starting in May.

Although CDs that have Web links aren’t new, Trashy Lingerie is breaking new ground by offering “something that’s media-rich like a movie, that’s addressed to a commerce engine. It’s something that a lot of people are talking about right now,” said Bob Gill, an analyst at Gartner Group Inc. in Stamford, Conn.

Such hybrid discs can drive more buy-oriented traffic to sites, improve transaction completion and generate leads, Gill said.

Trashy Lingerie isn’t alone in trying out hybrid discs. Two weeks ago, Sandals Resorts (www.sandals.com) released an interactive vacation planner mastered with software from New York-based CDKnet.com Inc.

Less sophisticated than Trashy Lingerie’s effort, the hybrid CD includes a 20-minute video tour of Caribbean destinations, some basic content created with HTML, the Internet programming language, and an animated presentation.

**Links to Web**

The CD has more than 10 “strategic” Web links embedded, said Bobby Stewart, vice president of systems development at the Miami-based tour company. These include links to package rate pages and dealer locator.

“We plan to count the number of Web site sessions initiated by the CD and then look at which Web pages the CD customers tour,” Stewart said.

“More people and repeat buyers are going to hold their interest.”

**BEING SEXY ISN’T ENOUGH: Accessibility is the key**

When Babies R Us of a major standards rift involving Intel’s NGIO which should become available early next year — are expected to start around $156M byte/sec. to $312M byte/sec., and will be incompatible with PCI.

Intel has dismissed claims that Future I/O will be more powerful than NGIO: “They are talking about something that is going to become available next year,” said Bill Kircos, an Intel spokesman. “A lot of things can happen before then.”

Compaq’s Walker said he hopes Intel will join the Future I/O effort “and [help] to merge the two efforts into one.” Intel’s Kircos said the chip vendor hopes to attract Future I/O backers into its camp.

For Future I/O, a lot will still depend on how much Intel — as the industry’s largest chip supplier — is willing to back the initiative, said Tony Massimini, an analyst at Semico Research Co. in Scottsdale, Ariz.

“It won’t fly if Intel isn’t involved,” Massimini said.

**AT A GLANCE**

**Battling I/Os**

What are Future I/O and NGIO? Both are server bus technologies to boost I/O performance.

Why is that necessary? Current PCI technology is simply not powerful enough to fully exploit Intel’s fastest chips. Thus it has become a performance bottleneck.

How powerful are those technologies? PCI transfers data between the CPU and peripherals at 132M byte/sec. Both Future I/O (NGIO) and a severalfold performance increase over PCI are talking about something that is going to become available in 2001 or 2002.”

Big Gains

According to Karl Walker, vice president of technology and development at Compaq, Future I/O — to be available in 2001 — will offer significantly greater performance than PCI and a severalfold performance improvement over PCI. For instance, where PCI can move data between the CPU and peripherals at 132M byte/sec, Future I/O will be capable of more than 2G byte/sec, he said. Future I/O also will be fully compatible with PCI and the interim PCI-X technology, which is being sponsored by the same vendors.

In contrast, early versions of Intel’s NGIO — which should become available early next year — are expected to start at around $156M byte/sec. to $312M byte/sec, and will be incompatible with PCI.

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**60 more vendors join anti-Intel effort**

**BY JAIKUMAR VIJAYAN**

An initiative by several hardware vendors to curb Intel Corp.’s control of system design is heightening the possibility of a major standards rift in the server industry.

At issue are competing efforts to develop an I/O bus design that can boost server performance significantly beyond Peripheral Component Interconnect (PCI)-based servers today.

For users, such a battle could mean component incompatibilities, product delays and getting locked in to different technology streams, analysts said.

Just last week, 60 new vendors allied themselves with Future I/O, which is backed by Compaq Computer Corp., IBM, Hewlett-Packard Co., 3Com Corp. and Adaptec Inc. Compaq declined to name the new vendors.

Intel’s Next Generation I/O (NGIO) bus is backed by several vendors including Dell Computer Corp., Sun Microsystems Inc. and Siemens AG.

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**WHAT ARE FUTURE I/O AND NGIO?**

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**WHO IS DEVELOPING NGIO?**

Intel, Dell, NEC, Sun, Siemens, Hitachi and others.

**WHO IS DEVELOPING FUTURE I/O?**

Compaq, IBM, Hewlett-Packard, 3Com and Adaptec.

**WHAT ARE THE MAIN DIFFERENCES BETWEEN THE TECHNOLOGIES?**

Future I/O is expected to be faster and more powerful than NGIO, but it will be fully compatible with PCI and the interim PCI-X technology.

NGIO is expected to be less powerful than Future I/O, but it will be fully compatible with PCI and the interim PCI-X technology.

**WHY ARE VENDORS JOINING THE FUTURE I/O INITIATIVE?**

Vendors are joining the Future I/O initiative because they believe it will provide a faster, more powerful alternative to PCI and the interim PCI-X technology.

**WHY ARE VENDORS JOINING THE NGIO INITIATIVE?**

Vendors are joining the NGIO initiative because they believe it will provide a faster, more powerful alternative to PCI and the interim PCI-X technology.

**WHAT IS THE FUTURE I/O EFFORT?**

The Future I/O effort is an initiative to develop a new I/O bus technology that will provide faster, more powerful performance than PCI and the interim PCI-X technology.

**WHAT IS THE NGIO EFFORT?**

The NGIO effort is an initiative to develop a new I/O bus technology that will provide faster, more powerful performance than PCI and the interim PCI-X technology.

**WHY IS THIS RIFT IMPORTANT?**

The Future I/O and NGIO efforts represent a major standards rift in the server industry, and the outcome will likely determine which technology will ultimately prevail.

**WHAT IS THE OUTLOOK FOR THESE TECHNOLOGIES?**

The outlook for Future I/O and NGIO is uncertain, as both technologies are still in development and have yet to prove their performance and compatibility with other hardware components.

**WHAT IS THE IMPACT OF THIS TECHNICAL RIFT ON THE BUSINESS OF COMPANIES?**

The technical rift between Future I/O and NGIO could have significant implications for companies that rely on PCI technology for their server infrastructure.

**WHAT IS THE FUTURE I/O EFFORT?**

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**WHAT IS THE NGIO EFFORT?**

The NGIO effort is an initiative to develop a new I/O bus technology that will provide faster, more powerful performance than PCI and the interim PCI-X technology.
NAVAL SCHOOL CHOSES ATM FOR TRAINING NET

$5M backbone conversion improves bandwidth to desktops by factor of 20

BY MATT HAMBLEN

TWO YEARS AGO, the U.S. Naval Postgraduate School (NPS) in Monterey, Calif., ran a data network that sometimes crashed three times per day for hours at a time.

But in recent weeks it has fully converted its 2,500 students, teachers and other users to a new $5 million network based on an Asynchronous Transfer Mode (ATM) backbone with Switched Fast Ethernet to each desktop, school officials said. ATM often is more expensive than Gigabit Ethernet backbones for campus settings, analysts said.

Guaranteed Bandwidth

But at NPS, either solution would have cost about the same, and ATM will provide guaranteed bandwidth to meet the Navy's demands, said the integrator and consultant on the project, Doug Picard, president of International Automation Associates, also in Monterey.

"We needed to have multiple links from big buildings so that 800 to 900 simultaneous users could have live links, and we didn't feel Gigabit Ethernet could do that," as reliably as ATM, Picard said.

The school hopes eventually also to run its voice network over the ATM network and expand videoconferencing for classroom and distance learning, said Tom Halwachs, CIO at NPS.

The bandwidth to desktops has increased by a factor of 20, up to 100M bit/sec., allowing instructors to take full advantage of animation graphics which are viewed by students throughout the campus.

Before, the school lacked a real backbone, and ran a hopgwedge of shared Ethernet with two routers that delivered only 2M to 5M bit/sec. at the desktops, Halwachs said.

DOUG PICARO (right) shows Naval Postgraduate School CIO Tom Halwachs some of the capabilities of the school's new ATM network.

The new network uses nearly $2 million in 3Com Corp. equipment, including 14 ATM switches and 14 edge routers that allow 622M bit/sec. bandwidth on the backbone among 20 campus buildings.

Microsoft Corp.'s NetShow Theater Server is used to pump streaming video to desktops, and soon Intel Corp's ProShare will be employed for videoconferencing, Halwachs said.

Campus housing outside the backbone will be outfitted with 3Com cable modems so that students can study via cable TV connections.

Analysts said recent installations of ATM equipment in campus backbones are less popular than simpler-to-install and cheaper Gigabit Ethernet switching.

ATM components account for about 2% of network components worldwide, said Tom Nolle, an analyst at CIMI Corp. in Voorhees, N.J.

Nolle said ATM sometimes is preferable over a Gigabit Ethernet backbone when multiple network protocols are used over the same network infrastructure, as is the case at NPS. Ron Jefferies, an analyst at Jeffries Research in Arroyo Grande, Calif., said ATM offers the ability to guarantee bandwidth and quality of service.

"With Gigabit Ethernet, they just throw an enormous amount of bandwidth at a problem" without guarantees, he said. "But the ultimate choice between the two is more of a preference of those doing the integrating."

BRIEFS

Vector Graphics Standard Drafted

The World Wide Web Consortium, which oversees Web technical standards, has released its first public draft of a proposal for scalable vector graphics.

With scalable vector graphics, Web designers could post graphics on the Web in vector form and not have to convert them to current Web-acceptable formats such as JPEG or graphics interchange format. The proposed standard was written in the Extensible Markup Language (XML) and marks a first step in attempting to use XML for cross-platform Web graphics.

www.w3.org/Graphics/SVG/

Web Server, App Monitoring Tool

Freshwater Software Inc. has announced SiteScope 4.0, a Web server and application monitoring tool for both Unix and Windows NT.

The Java-based software has a uniform resource locator transaction monitor feature that verifies whether online electronic-commerce and database transactions are executing properly from beginning to end. It can check user downloads of frames, graphics and text during each step of the interaction. The new version also adds remote monitoring for Unix.

Pricing for licenses starts at $495 for NT and $1,295 for Unix.

www.freshwatersoftware.com

Device Offers Frame-Relay Access

Northern Telecom Ltd. has announced Passport 4455, a frame-relay access device designed for consolidation of multiple connections from branch offices.

According to the Brampton, Ontario, company, the central switching node can integrate data, telephony, fax and other traffic types over a single connection.

It has five slots and offers a new cascading capability that helps users save on distance-based line costs.

Pricing starts at $4,900.

www.nortelnetworks.com

TECHNOLOGY NETWORKING

COMPUTERWORLD February 22, 1999

SNAPSHOT

Glad About FRADs

Worldwide frame-relay access device revenue

1998 $584M
1999 $706M
2000 $812M
2001 $888M
2002 $951M

*Projected

Note: FRADs are devices that concentrate data from sites onto wide-area frame-relay links.

Facets-uphill battle pitching IP-only device

FACES upHILL BATTLE PITCHING IP-ONLY DEVICE

BY BOB WALLACE

Although it sports a promising technology for speeding routing, start-up Effnet Inc. has its work cut out for it pitching its recently announced IP-router-on-a-card for use in Windows NT servers.

That's chiefly because Microsoft Corp. has been offering IP and IPX routing with NT Server 4.0 and 5.0 since mid-1997 an effort to eliminate the need for traditional hard-ware-based routers.

They have interesting technology, but NT already does multiprotocol routing standard," said Michael Speyer, an analyst at The Yankee Group, a Boston consultancy.

Also, Wellesley, Mass.-based Effnet's product doesn't support IPX, which still is used in many companies.

Initially, it ships with only a PCI-Bus Card

Nonetheless, Effnet claimed that its $2,500 Peripheral Component Interconnect-bus card incorporates an algorithm which supports routing at 400,000 to 500,000 packets per second, compared with the approximately 40,000 packets per second claimed by Microsoft.

Effnet said it has developed and enabled the device to route at high speeds and perform firewall filtering.

But, unlike Microsoft's offering, Effnet's product doesn't support IPX, which still is used in many companies.

Initially, it ships with only a T1/E1 wide-area network interface, and there are no plans for lower-speed interfaces used at smaller sites.

Effnet said the card will ship by July with a chip that performs encryption and IPsec security support.

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www.nortelnetworks.com
I f you’re tax-obsessed like me, few challenges fascinate you more than reducing, to the legal minimum, the pound of flesh that must be mailed annually to the Internal Revenue Service. To keep sharp, you need to plan tax strategies all year — and there are far fewer affordable ways than dipping into Intuit Inc.’s TurboTax or Block Financial Corp.’s Kiplinger TaxCut long after that Form 1040 has been sent.

If you’re used to paying an accountant to worry about scholarships in estate planning and tax shelters, tax software might not be worth the trouble. But if you’re not sure you’re getting the best advice or if your commercial tax preparer makes too many mistakes for your comfort, it’s time to take taxes into your own hands. These packages provide both the knowledge and tools you need to confidently manage your taxes.

Most people use tax software only to prepare their annual taxes. The Big Two (TurboTax and TaxCut) make that tedious process so undesirable that it’s a slam-dunk decision to buy one or the other every year (you need to get the right forms and calculations). Both use basically the same approach. Their entry-level packages extract the needed information in plain-English forms and checklists, then fill in the IRS forms — visible at the bottom of the screen — as you go. Calculations occur in the background, and hyperlinks provide quick answers to frequently asked questions. The Deluxe versions have all this plus electronic books and short videos, which always are well-done and informative.

Additional CDs hold the forms unique to corporations. Naturally, electronic filing also is right at hand.

A mostly settled technology, tax software is nonetheless evolving in Web-similar ways, with more online tax preparation — the Big Two offer it, and sites run by Universal Tax Systems Inc. (www.securitytax.com) and Thomson Investors Network (www.onetax.com) are dedicated to it. Web updates (for last-minute IRS changes) and greater personalization also are growing.

I used TurboTax and TaxCut (both deluxe and small-business versions) and an upstart, 2nd Story Software’s TaxAct ‘98, to calculate my 1998 taxes, judging each on ease of tax preparation and educational value. 

Essex is a freelance writer in Antrim, N.H.

TurboTax remains the king of tax programs, more than doubling TaxCut’s sales. I tried both the Deluxe and the $69.95 Home & Business versions; the latter is for sole proprietors. This year’s biggest change is a “Smart Interview” system that uses your financial profile to determine which forms you need. I found the process indeed was quicker than last year’s. TurboTax also combats disorientation by keeping an index of interview steps on screen with part of the associated form.

Both TurboTax and TaxCut can stumble on routine housekeeping and navigational chores. TurboTax, for example, showed a “Save File to Disk?” message that didn’t make clear which file it was talking about or why I needed to save that particular screen. Neither program makes it obvious where you left off when you close and later reopen the program, a drawback I haven’t investigated in TaxAct ’98. The result is the uneasy feeling that previous work hasn’t been saved, you’re duplicating or copying over a previous session — or you’re in the wrong section entirely.

Overall, I slightly prefer TurboTax over TaxCut because of its more on-target expert advice. It appeared more likely to pop up with the tips you need when you need them and boasts more Weblike — although sometimes confusing — screens.

Kiplinger TaxCut
Deluxe multimedia version for Windows Block Financial Corp., www.taxcut.com $59.95 (street price; Macintosh version available)

Kiplinger TaxCut is so close to TurboTax in style and function that its maker, Block Financial, takes pains to point out the differences.

TaxCut’s list prices for basic and deluxe packages are 10% cheaper than those of TurboTax. But that’s splitting hairs; TurboTax is often deeply discounted in store promotions. The real savings come in state filings: TaxCut Deluxe bundles forms for all states for free, while TurboTax charges $27.97 for one state and $19.95 for each additional state. You will save if you have recently moved, if your spouse works in a different state or if you have kids in out-of-state colleges. As advertised, TaxCut has simpler screens that are easier to navigate than TurboTax. But I found its spare design to be a bit state-looking. I also faulted both for presenting too many cryptic messages about loading and saving files.

One of my favorite features is the long, detailed tutorial on real estate. TurboTax can’t touch it for thoroughness, though overall I found TurboTax’s videos, tips and references to be better presented than TaxCut’s. New this year in TaxCut: a simplified tabbed interface, the state-tax deal, two interview tracks (one each for neophytes and experienced filers) and free online preparation and filling of Form 1040EZ at www.taxcut.com.

TurboTax Deluxe
Intuit Inc. www.turbotax.com $99.95 (suggested retail price; MacInTax Macintosh version also available)

TurboTax also combats disorientation by keeping an index of interview steps on screen with part of the associated form.

Both TurboTax and TaxCut can stumble on routine housekeeping and navigational chores. TurboTax, for example, showed a “Save File to Disk?” message that didn’t make clear which file it was talking about or why I needed to save that particular screen. Neither program makes it obvious where you left off when you close and later reopen the program, a drawback I haven’t investigated in TaxAct ’98. The result is the uneasy feeling that previous work hasn’t been saved, you’re duplicating or copying over a previous session — or you’re in the wrong section entirely.

Overall, I slightly prefer TurboTax over TaxCut because of its more on-target expert advice. It appeared more likely to pop up with the tips you need when you need them and boasts more Weblike — although sometimes confusing — screens.

TAXACT ’98
2nd Story Software Inc. www.taxact.com $99.95

TaxAct ’98 is a decent little program that has economics against it. It duplicates the woody, reassuring comfortableness of TurboTax and TaxCut well enough and goes beyond interviews, forms and calculations with what-if scenarios, a “Life Events” module for gaging how milestones such as marriage and college affect your taxes, and general tax advice. There’s even a freeware version, but it lacks the other packages’ frills and doesn’t come with an accuracy guarantee, which is standard with the Big Two.

My problem with TaxAct ’98 is that the $10 to $20 saved compared with a sale copy of TurboTax or TaxCut is hardly enough to risk the larger amount of money at stake. Better to pay a bit more and get familiar with a program you may be sticking with for years to come.

NONTAXING SITES
Sites to search when your tax-preparation software can’t answer the tough questions.

www.irs.ustreas.gov The main IRS site

www.quicken.com/taxsite Scads of clever advice on matters such as income-shifting and charitable gifts

www.fourmilab.ch/ustax/ustax.html The complete U.S. Tax Code online
"It's easy to sit down and crank out thousands of words of well-behaved analysis, but IT and business leaders just don't have time to sift through all the rhetoric. What they really want is strong, punch-through opinions, sharp analysis. As a columnist, I'm going to be there pounding the table and waving my hands. I'm going to get in your face. I'm going to say it loud and clear, but I'm not going to be unfair. I'm always rooting for the business people who actually buy and use information technology. I want to know what's getting in their way, where's the pain. I want them to get home for dinner more often. I want them to win."

The Ultimate Fan
Frank Hayes, Columnist
**TECHNOLOGY OPINION**

**What is Cool?**

S O IT TURNS OUT Java is dead meat at Microsoft — or maybe not, depending on what report you read last week. According to various sources, Microsoft plans to license a Java clone and build its products around that. Or possibly kill its Java products completely. Or conceivably create its own new Javalike language.

Confused? So is everybody else, apparently. But the one thing all the reports agree on, from trade newspapers to *The New York Times*, is that Microsoft is working on, well, something code-named Cool. Cool may be Microsoft's Next Big Thing. It may be a new language, though Microsoft denies that. It may be Javalike or a replacement for Java. (In these news stories, Microsoft seems obsessed with Java.)

But no two descriptions of Cool are quite the same.

Noping, I don't know what Cool is, either. But based on history, technology and what corporate IT shops actually need, we can make some pretty good guesses about what Cool isn't — and what it really should be.

First things first: What Cool won't be is a head-to-head competitor of Java. Microsoft doesn't win head-to-head competitions with savvy competitors. Remember Microsoft Money? And the Microsoft Network? And even Internet Explorer, before it was stitched into Windows 95? Microsoft won't win by playing catch-up with Java.

No, Microsoft wins by leapfrogging the competition and leveraging the technology it builds in to its operating systems. That's how Microsoft Excel took the spreadsheet market away from Lotus 1-2-3 and how Microsoft Word stripped WordPerfect of its word processor dominance. When Windows took over PCs, 1-2-3 and WordPerfect were left in the dust.

A new Javalike language? Forget it. But what about a language that does some things Java can't do? What if, instead of a traditional programming language, Cool turns out to be an object-oriented modeling system — one designed to make it easier to build distributed, transaction-based applications.

What if it really should be. It's what corporate IT shops need. It would give us a huge boost in creating distributed systems — and, not incidentally, would give IT shops a real reason to want Windows 2000.

Of course, it won't be Java — or Javalike, or a Java replacement. It won't even make Java obsolete. But unless Microsoft truly is obsessed with Java, there's no reason it should be.

We don't need another Java — and neither does Microsoft. What we need is a better way to build distributed applications. And that really would be cool.

Funny thing, too — that's also the kind of new technology Microsoft is building into its next version of Windows. Windows 2000's Active Directory will make it far simpler for distributed applications to find their way around the network. COM+, another highly touted Windows 2000 feature, is supposed to radically simplify transaction programming and make middleware obsolete.

All that's missing is an easy way for developers to design and generate big chunks of distributed applications automatically — a modeling system that would do for distributed programming what Visual C++ did for building graphical applications.

Is that the mysterious Cool? If it isn't, it ought to be. It's what corporate IT shops need. It would give us a huge boost in creating distributed systems — and, not incidentally, would give IT shops a real reason to want Windows 2000.

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Hayes, Computerworld's staff columnist, has covered IT for 20 years. You can contact him at frank_hayes@computerworld.com.
Distributed Component Object Model

DEFINITION

Distributed Component Object Model (DCOM) is Microsoft's system for spreading an application across more than one computer on a network. A software component on one machine can use DCOM to send a message called a remote procedure call to a component on a different machine. DCOM automatically sets up the connection, carries the message and returns the reply from the remote component.

How DCOM Allows Components to Communicate

1. Program component on the client PC makes a function call to a remote server component, such as a credit-card verification system via the Windows operating system.
2. DCOM sets up a connection across the network between the two components using remote procedure calls.
3. The program component can communicate with the server component as if they were on the same machine.

DCOM vs. CORBA

Both Microsoft's DCOM and the Object Management Group's CORBA support distributed computing. But they have developed in different directions.

DCOM

Microsoft expanded DCOM by including transaction services, easier programming and improved support for Unix and other platforms.

CORBA

The OMG has expanded by adding industry-specific support for telecommunications, manufacturing, electronic commerce, financial, medical, transportation and utility companies.

Related terms

Common Object Model (COM): Microsoft's system for developing applications using components.

COM+: An enhancement to COM and Microsoft Transaction Server that simplifies complex distributed-computing development.

Common Object Request Broker Architecture (CORBA): The major competitor to DCOM for distributed computing systems.

Distributed computing: Applications in which different parts of a program may be running on separate computers on a network.

Microsoft Transaction Server (MTS): An enhancement to COM that adds database transaction support.

Remote procedure call (RPC): A message sent across a network that allows a program on one computer to start a process on another computer.

Are there technologies or issues you would like to learn about in QuickStudy? Please send your ideas to QuickStudy editor Stefanie McCann at stefanie_mccann@computerworld.com.
Are we there yet? No — at least not to the fully realized vision of storage-area networks (SAN). Pieces of the SAN puzzle still are missing because standards are either immature or nonexistent. However, there are ways you can install a SAN today if you’re careful and, like many IT department managers, you’re willing to risk a proprietary solution.

That’s right — proprietary. It isn’t often that you hear analysts advocating proprietary systems or users showing little fear of investing in them, but that’s the SAN market today. Proprietary systems, such as those from Compaq Computer Corp. and 3Com Corp., are the safest and most sensible option if you need SAN performance, according to industry experts and information technology managers who have dabbled in SANs.

The alternative to the proprietary approach is to piece together a SAN yourself, but you really may be hanging the corporate data out to dry. Too many vendors found their own way to interpret the Fibre Channel standard — the SAN data transport protocol of choice — so incompatibility among devices remains a major problem when building your own.

Proprietary SANs are tested, vendor-prequalified systems that analysts say are safe to buy into even before the official standards are ratified. They’re safe because the systems are adaptable to the standards when finished. Also, companies truly in need of a SAN’s performance run more of a risk by not moving forward now and waiting for standards to firm up,
Early storage-area network users talk about immature technology and implementation issues

By Kevin Burden

WHAT IS A SAN?
A storage-area network (SAN) is a dedicated network that connects all the servers and clients to a shared pool of storage devices. The pool consists of servers, external storage devices, hubs and switches, and network and storage management tools.

SANs increase the availability of data by letting any server on the network access any storage device on the SAN. Server performance also is increased as storage-intensive processes such as backup and recovery are off-loaded to the SAN. SANs also promise lower cost-of-ownership through centralized management.

Gigabit-speed Fibre Channel has emerged as the transport protocol of choice for SANs; it allows disk and tape storage devices to be attached to multiple hosts. Interfaces such as Escon also can be used, but Fibre Channel is preferred for the 10K distance it supports between nodes.

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TECHNOLOGY

February 22, 1999

COMPUTERWORLD

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Early storage-area network users talk about immature technology and implementation issues

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Continued from page 75

dards get stufied down associations' threats," DiCenzo says.

It will be several years before the Storage Networking Industry Association (SNIA) finishes standardizing the management aspects of SANs. It will finish specifications that will let management software manipulate drives, switches, hubs and so on this year. "But the larger question, on how all the devices are managed as a whole, is just coming to the table," says Brad Stamas, an analyst at Storage Technology Corp. and an SNIA member. "So, standards by default? I expect some parts will show up that way."

Because the vendors aren't waiting for the standard interfaces to fully take shape, neither should users, says Andre Logfren, an analyst at Giga Information Group Inc. in Cambridge, Mass. "We are years away from having these standards completely addressed, and there are plenty of other benefits users can get from SANs today that override what these standards will eventually deliver," he says.

That's exactly the mind-set of Bob Cornelius, product manager at SunGard Recovery Services, a disaster recovery service in Wayne, Pa. The promise of complete interoperability — being able to plug in any storage device from any vendor — certainly has its appeal, "but I can wait for that," he says. "Besides, Compag certifying that its SAN system will work is more valuable to us than the connectivity ever would be."

SunGard is installing the underlying Fibre Channel fabric called for by Compaq's Enterprise Network Storage Architecture (ENSA). With ENSA, the omus of compatibility is on Compaq alone.

"We've set these systems up. They don't have the 'plug in any thing' connectivity of a network like some users may want, but we've proved they will work and [we] guarantee their performance," says Mark Lewis, Compaq's director of engineering. Compaq is first delivering systems for Microsoft Corp.'s Windows NT on servers from Intel Corp., Sun Microsystems Inc.'s Solaris, Hewlett-Packard Co.'s HP-UX and SGI's Irix. Systems for Novell Inc.'s NetWare, The Santa Cruz Operation Inc.'s UnixWare and NT on Alpha will follow in the second quarter.

Cornelius manages what amounts to a square city block of storage, 80G bytes. The business of disaster recovery means you need to support clients who are on the cutting edge and those using older technologies. "A SAN will give us the storage on demand we need to do that more efficiently," Cornelius says.

SunGard first will network its UltraSCSI drives Compaq has qualified, and "eventually we will swap out all our drives for Fibre Channel drives as they become available," he says.

Compaq also has taken steps to ensure ENSA-based SANs can evolve as Fibre Channel technologies mature. Its systems support Fibre Channel switched fabrics, the successor to Fibre Channel Arbitrated Loop that's at the base of most SANs today. Cornelius is like comparing Ethernet with Switched Ethernet: The latter is a high-end system that extends the architecture with better performance and increased reliability.

Lambert knows what it's like to be handcuffed to a SAN that won't evolve with the latest technology. Five years ago, MGI Studio installed one of the earliest renditions of a SAN. It comprised two 9G-byte drives on a dedicated fiber network and delivered a respectable data speed of 2.5M byte/sec. "But we're totally locked down with it because it only uses Fast SCSI2 drives," Lambert says.

The vendor also took too long before committing to build Fibre Channel products, so Lambert began looking elsewhere.

Lambert turned to MicroNet Technology, which offered FibreFLEX, a Fibre Channel-based SAN that would use his existing Ultra SCSI2 drives. The solution meant Lambert could increase his throughput with Fibre Channel while working with a safety net on proven SCSI drives. So far, FibreFLEX at its best churns at 50M byte/sec., just half the performance Fibre Channel can deliver when optimized. "But nothing is more important than our data. I'm willing to sacrifice a little speed now to guarantee our livelihood," Lambert says.

FibreFLEX was based on open technologies. As are the manufacturers of proprietary SANs previously mentioned, MicroNet is qualifying all the components until the standards are set. Eventually, FibreFLEX will evolve into a pure Fibre Channel SAN with native Fibre Channel RAID controllers and drives and 100M byte/sec. speeds.

MOREONLINE
For more information and resources on storage-area networks, visit our Web site: www.computerworld.com/news
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Quiet Legacy

Technology Happenings

A U.S. district court makes a final judgment on a 1952 complaint against IBM regarding monopolistic practices. The company signs a consent decree that places limitations on the way it conducts business with respect to "electronic data processing machines," among other things.

The first trans-Atlantic telephone cable is developed. Ampex Corp. perfects the first videotape recorder, which is rapidly adopted by the entertainment industry because, unlike film, the electromagnet tape requires no processing.

Thomas Watson Jr. becomes CEO of IBM.

IBM founder Thomas Watson Sr. dies.

Bell Labs develops prototype of the first picture phone.

Jay Forrester's patent is issued for magnetic core memory.

Noam Chomsky invents context-free grammar, which is used in nearly all programming languages after its initial use three years later to describe Algol 60.

Born in 1956

Stephen Blake, South African civil rights activist

Larry Bird

Carrie Fisher, "Princess Leia"

Mac Carol Jemison, first African-American woman in space (1992)

Other Notables

Best Picture: Around the World in 80 Days

Woody Guthrie composes "This Land Is Your Land"

Top Record: Elvis Presley's "Don't Be Cruel!"

Median price of a house is $14,500.

University of Alabama students riot against court-ordered admission of the first African-American student.

Martin Luther King Jr. is arrested for the first time. His home is bombed four days later.

U. S. detonates the first aerial hydrogen bomb.

Prince Rainier of Monaco marries Grace Kelly.

The Soviet Union crushes workers' uprising against communist rule in Hungary.

Fifty-one people die on the ship Andrea Doria, which sinks off the New England coast.

A scene from Saga, a Western written and directed by Gordon Bell, now a senior member of Microsoft Corp.'s Bay Area Research Team and earlier the head of research and development at Digital, used the TX-0 to work on speech recognition, which led to a technique that's still a cornerstone of the technology.

“Anyone who used the TX-0 knew they wanted to work on interactive systems,” Bell says. “In a funny way, I don’t feel a hell of a lot different now than I did then. I think every morning when I wake up that there is something really wild and new and exciting to do that, in 50 years, will just look as wild.”

Bell is a frequent contributor to Computerworld. Her E-mail address is geoff@ix.netcom.com.

Elvis Presley appears on The Ed Sullivan Show.

Japan is admitted to the United Nations.

More Online

For more information on the TX-0 and its alumni, visit our Web site: www.computerworld.com/years
Connect with experts and peers in Palm Desert, California, this June at Computerworld's eighth annual Technical Recruiting & Retention Conference. That's where over 550 corporate technical recruiters from across the nation will discuss their challenges, issues and successes in specially designed workshops, interactive discussions, breakouts and networking events. When you attend, you'll benefit from a complete schedule of topics addressing a wide range of recruiting issues. What's more, at this event's exhibit area, you'll learn about contemporary products and services designed to maximize recruiting efficiency.

**Keynote Presentations**

**I.T. Recruiting & Retention**  
BARB COLE-GOMOLSKI  
Computerworld Reporter/Careers & Labor Issues  
Covering one of the hottest topics in I.T., Barb will give up-to-the-minute insight on how companies are dealing with I.T. recruiting and retention.

**IntelligentRisking**  
BRIAN O’MALLEY  
Everest & Africa Adventurer  
BARBARA STOKER  
Business Consultant & Technical Rock Climber  
Set your path. Find your courage. Embrace your adventure. IntelligentRisking allows you to pause and look at the Invisible Risks, the risks you aren’t taking in your life. This session is a powerful combination of “The How To” with “The Want To”.

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Fran Quitell
Nationally Recognized Career Expert and Computerworld’s CareerAdvisor Columnist

With a lengthy background in high tech careers and recruiting, Computerworld’s CareerAdvisor Fran Quitell specializes in providing in-depth information for job seekers and a “Recruiting Scoreboard” to help employers audit and improve their internal recruiting practices. Fran is author of the book, Firepower: Everything you need to know before and after you lose your job and is the original creator of The FirePower Career Forum on The Microsoft Network. She also publishes career advice at www.careerhbc.com and tips for employers at www.yourcareer.com
Health Care Industry Rx

Doctors' orders include IT workers skilled in networking, systems integration and large packaged applications

By Leslie Goff

Whether called upon to develop a browser-based front end to a patient-care system or an interface from the patient-care system to billing applications, everything that the information technology team does in a health care facility touches patients.

Two technology trends prevail: The use of large, shrink-wrapped packages and integration of myriad systems and platforms across hospitals and clinics.

Most hospitals are dependent on at least one industry-specific vendor, such as Shared Medical Systems Corp. (SMs) or Medical Information Technology Inc. (Meditech), for major applications.

A look at three distinctly different hospitals — an academic health care center, a large urban medical center and a mid-size regional hospital — reveals the breadth of skills in demand and opportunities available.

Johns Hopkins Medicine

Location: Baltimore

Facilities: More than 3,000 beds across five different medical centers, hospitals and special clinics.

Web site: hopkins.med.jhu.edu

IT human resources liaison: Jim Heideman, administrative information services

What Looks Good on a Resume: “Shared Medical Systems is our leading vendor, and we need to have people on our staff who are capable of securing the value from that particular application, and [have] the ability to link platforms that are totally different.”


Attitude/Aptitude: “Probably 90% to 95% of our recruiting is not health care-specific. Most of our clients who are looking for IT skills, and we don’t care whether they were acquired in another health care business or in another industry. On the other hand, we recently employed someone who had nursing experience in an intensive care setting and also has an IT background. We’re installing a new point-of-care system that will be used by nurses and doctors to care for intensive care patients, so we think this person is a good hire and will be very beneficial to the way we are applying this system.”

Diagnosis: “Hopkins is an academic medical center, so we are not the typical community hospital. We have patient care, research and teaching, and we have a number of different systems and approaches that we use. . . . "It’s a multifaceted environment and we have taken a best-of-breed approach, [compared with] the [single-vendor] approach taken by many community hospitals.”

Methodist Health Care System

Location: Houston

Facilities: 1,500 beds in four facilities, a Home Health agency, several joint-venture physician groups and a health maintenance organization called MethodistCare Health Plan.

Web site: www.methodisthealth.com

CIO: Bernie Minard, senior vice president, IT

What Looks Good on a Resume: “Experience using our packages. The movement here is toward having an integrated delivery system, and there are two core areas to that: the Enterprise Master Person Index, which is typical of organizations that are integrating patient record-keeping, and the electronic Medical Record.”

Technical Skills Wanted: Systems integration, interface development, clinical systems, legacy systems, desktop infrastructure and Web-based applications development.

Attitude/Aptitude: “Ability to do well-defined, analytical, complex work.”

Diagnosis: “It’s typical in health care now to have hospitals that are acquired or merged, and then you have other affiliations and partnerships between large clinics and hospitals. All of these require integration of patient record-keeping. So maybe one has software from vendor A and another has software from vendor B. And maybe a patient is admitted to one place and ‘AI Smith’ in another, and you have to bring all these things together.”

In addition, there are doctors who work in private offices, the hospital and in a clinic. “If your systems aren’t well-integrated, [they have] to learn several different user interfaces and passwords. So you have to integrate for the physician who would be so confused [that] he couldn’t benefit from the automation because it would take him 10 minutes each time to get reoriented to a different system.”

Conway Regional Medical Center

Location: Conway, Ark.

Facilities: 117 beds, eight clinics, fitness center and home health care.

Web site: www.conwayregional.org/standards/findus.shtml

Chief technology officer: D. K. Martin, director of MIS

What Looks Good on a Resume: “We use Meditech software and it’s a legacy system. We have no object code on-site, and we depend on [Meditech] for all of our systems, so that directs us down a particular path. We need someone who knows as much about the Meditech applications as possible, and those fall into two arenas: One group operates on DEC Alpha machines, and another group — which we will have to migrate to — is client/server-based.”

Technical Skills Wanted: Meditech, network design, analysis and administration; Windows NT and Windows 98; DEC Alpha client/server.

Attitude/Aptitude: To communicate with nurses and doctors, “medical knowledge and networking knowledge are mandatory. To address that need, we are [launching] a health care industry master’s degree program at a local college. We plan to hire one of their early graduates next year.”

Diagnosis: “We are a not-for-profit hospital. We’re under pressure from the federal government to reduce our Medicare payments. At the same time, [Blue Cross/Blue Shield of Arkansas] told us that we’ll be reimbursed less this year than last year, due to managed care. . . . We write off about 40% of our gross due to non-payment, and that makes it extremely hard on our bottom line. It limits what we can spend on salaries and training.”

Goff is a freelance writer in New York. She can be contacted at lbgoff@ix.netcom.com
As a contractor, I use dice.com and dice.com only to keep myself employed.

I have made over a quarter of a million dollars in the last 18 months, thanks to dice.com!

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E3GROUP is seeking an experienced oriented Project Manager to manage a project to implement a system for a major Midwestern retail bank. The Project Manager will be located in Columbus, OH. The selected individual will manage the project and staff from E3GROUP, as well as select third-party contractors.

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**SOFTWARE PROJECTOR ADVISOR**

E3GROUP is seeking an experienced oriented Project Manager to manage a project to implement a system for a major Midwestern retail bank. The Project Manager will be located in Columbus, OH. The selected individual will manage the project and staff from E3GROUP, as well as select third-party contractors.

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Sutter Health’s IT Division, located in Sacramento, California, is continuously designing and implementing a New Generation of clinical and administrative software systems. We offer cutting-edge career opportunities for candidates that are innovative and possess a technical or clinical background.

**Technical Project Managers**

**Technical Analysts**

**Senior Technical Product Specialists**

(Impatient Electronic Records)

**Application Developers**

(Users, Systems, Engineering)

**Database Administrators**

**Information Resources & Technology**

**TEAM LEADERS**

**IT PROFESSIONALS**

**NETWORK PROFESSIONALS**

**SOFTWARE PROJECT DIRECTOR**

E3GROUP is seeking a successful oriented Project Manager to manage a project to implement a system for a major Midwestern retail bank. The Project Manager will be located in Columbus, OH. The selected individual will manage the project and staff from E3GROUP, as well as select third-party contractors.

**SOFTWARE PROJECTOR ADVISOR**

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NASDAQ CONSIDERS TRADING HALTS

Volatile market swings prompt call for controls

Unsettling confusion caused by wild price swings and earthshaking volumes is becoming a problem for Nasdaq Stock Market Inc., but investment experts are bearish about a proposal to halt trading that seems out of control.

The Washington-based National Association of Securities Dealers Inc. (NASD), which runs Nasdaq, is considering increasing its authority to halt trading immediately when significant news about a company comes up or when a stock is trading with extraordinary volatility. The idea would first be tried for a year and then re-evaluated.

NASDAQ already has taken other measures to limit volatility, such as stepping up monitoring of day trading and extending the time in which stock prices are discovered for initial public offerings.

All of the steps are designed to prevent investors from suffering losses or trading delays that have occurred when a stock's price swings so fast a broker or investor can't determine the actual price and execute the trade accurately.

Although trading halts are designed to prevent confusion by letting investors think about a stock before trading on it, experts said investors rarely change their behavior after a delay.

"It doesn't do the least bit of good," said Vernon Smith, an economics professor at the University of Arizona in Tucson. Smith simulates stock markets and studies the effect of measures such as trading halts on investor behavior. In some cases, halts have simply dragged the volatility out for a longer period of time, he said.

Trading halts might be useful if they occurred only for a short period of time to let the market's information systems catch up to the trading activity, said Ed LaVarnway, director of the investment strategy group at First Albany Cos. in Albany, NY. But the market should never shut down in a paternalistic attempt to cool investor behavior, he said.

"Free markets should reign." — David Orenstein
Continued from page 1

Beta 3 Fixes Tackle 9x Migration
differently."

Bellinson said he's not yet sure how Microsoft will solve that problem, but he hopes to have the solution in place be-
fore the final software release. Microsoft's decision to have anything to help end users prepare for the coming of Win-

Boosting Beta 3

According to Craig Bellinson, Microsoft product manager for Windows NT, the NT team is working on making the fol-
lowing changes/additions to Beta 3 of Windows 2000:

■ Adding more wizards to the setup process.
■ Enabling recognition of more hard-
ware and software configurations.
■ Adding Sys Prep, a utility that lets a systems administrator push down a cli-
down with Windows 2000 appli-
cations and a Web browser already installed.
■ Improving the Set Up Manager from Beta 2. The utility can set up desktop installations according to preselected speci-
fications. — Sharon Gaudin

■ Adding to the code thought to be fixed, CrossCheck from Data Integrity Inc. in Waltham, Mass.
■ Adding new Microsoft tools to sift through millions of lines of legacy code, such as Cap Gemini's Lineage, "to look on the bri-
cket."
■ Adding auditing tools and the general knowledge about errors intro-
ducing, "it's almost malprac-
tice or negligence for organi-
izations not to have their work checked, Rubin said. Most of the defects detected by Cap
Gemini weren't "catastrophic" and didn't stop processing, Rubin
acknowledged, but he said they would have caused glitches after Jan. 1, 2000.

Rubin advised companies to monitor those "nagging errors" that don't disable sys-
tems but can have ripple effects, such as fouling up general ledger systems. "The great-
est fear is that most everything appears to work, but (below the surface) it doesn't," he said.

Ron O'Donnoughue, year 2000 project manager at Royal Bank of Canada in Toronto, is a true believer in verifying year 2000 repairs by using auto-
mated tools, which he said are much faster and more accurate than manual methods.

For the 8 million lines of Cobol code the bank manually converted, it missed one to 14 dates per program, O'Don-
noughue said. But the auto-
mated tool the bank used didn't miss one date field in the 22 million lines it scanned.

Independent verification, he said, is "cheap insurance, but it's valuable."
Y2K SURVIVAL KIT

With all of the dire predictions about power outages and food shortages in January 2000, advertising executive Stan Chrzanowski dreamed up the Y2K Survival Kit ($14.95 at http://y2ksurvivalkit.net) as a gag gift. It includes the following:

- A compass to help you find your way to the nearest wilderness to start a new human race
- A tiny squirt gun to ward off critters who want to confiscate your food stash
- A forked dowsing stick to find fresh water supplies (doubles as a slingshot)
- A magnifying glass to help start a fire
- A candle for use when the lights go out
- A pencil and pad of paper to use for communicating when the E-mail is gone
- Plant seeds for starting your own food supply or for desperate munching

Y2K SURVIVAL KIT

Waiting for Win2K

It may be little solace for potential Windows 2000 users - with beta testers reporting frequent crashes and upgrade problems - but Giga Information Group analyst Rob Enderle seems to be amending his prediction for when the Windows NT successor will arrive. After a Microsoft briefing last week, Enderle said he's "more hopeful than before" that the new operating system actually might ship by the end of this year. Other, less optimistic, analysts expect Win2K to show up some time in 2000.

SAP on Tap

Guinness Import IT chief John Stumpf is shifting roles for the Stamford, Conn.-based U.S. distributor of malt and other fine brews. Beginning in March, Stumpf will oversee a rollout of SAP R/3 software across Guinness' North American facilities. The bad news: Guinness has only a handful of permanent IT employees, and delivering SAP will take two years. The good news: Stumpf is a former IT manager who will have to go for the party.

Honest Work for a Change

Now here's a creative approach to filling open IT jobs: Hire a lawyer. MicroStrategy, a decision support vendor and consulting firm in Vienna, Va., is actively recruiting lawyers for IT positions. The company puts the barristers through a six-week boot camp to turn them into tech-support consultants or trainers. So far, 15 lawyers are on MicroStrategy's IT payroll.

OVERHEARD

Hal Zesch, SAP coordinator at petroleum refiner Valero Energy, on keeping project teams small: "You can only have one person configuring a [data] table at a time. But consulting firms send five people in, so four of them are just sitting or standing there."

Back to the Future

Maybe the year 2000 problem won't throw us back to the year 1900 - just 1978. Silicon Valley songwriter "Loose Bruce" Kerr (who's also a lawyer for Sun) is getting radio airplay for "Y2K," a parody of the disco hit "YMCA." Sample lyrics: "Young man, might your server go down? / Said, young man, will your customers frown? / Your business - will it still be around / When it turns 010100?"

The 5th Wave

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