Users to Tandem: Slow down!

By Michael Goldberg

Tandem Computers, Inc.'s rapid-fire updates to its proprietary NonStop Kernel operating system have left users scrambling to keep up and frustrated by the resulting systems problems, Tandem's user group president said last week.

Top complaints include a lack of vendor support and the difficulties that application developers face trying to keep pace with the frequent operating system revisions, charged David Lawler, president of the International Tandem Users Group, which met here last week.

"We're struggling to keep up with hardware and software rollouts [every 12 to 15 months]. It's painful to cope with the resulting software changes," Lawler said in a speech to more than 1,000 users and attendees at the ITUG Summit '95. "It puts a big workload on the user base just to stay even."

In an unrelated move, Tandem President James Treybig announced he will step aside once a replacement for him is found (see story; page 16).

Net managers clamor for business reality check

By Patrick Dryden

The time has come to put technology for managing networks and distributed systems to work supporting business needs, said many of the participants at the Enterprise Management Summit '95 conference here last week.

Attendees clamored for more than the ability to discover and monitor devices or applications on their networks.

As they become more dependent on client/server as well as mainframe IBM SNA configurations, they want help beyond reactive fault management. They need tools that work together so they can predict the impact of growth and measure performance.

And they need all of this within limited budgets and staff expertise.

Reality check, page 121

Data warehouse rests on Web frame

By Kim S. Nash

Cracker Barrel Old Country Store, Inc. is combining its first major internal Internet application with an initial stab at data warehousing.

The $641 million company in Lebanon, Tenn., has crossed into uncharted territory with what analysts call an ambitious project.

Cracker Barrel hopes to steer clear of the costs typically tied to building data warehouses, which are databases designed specifically for end-user business analysis.

"A big problem in data warehousing in general is looking up users who have all different systems on their desktops," said John Robb, an analyst at Forrester Research, Inc. in Cambridge, Mass. "But on the Web, that's not an issue."

Many users dabbling with internal company web applications have so far stuck to relatively simple applications, such as human resources or telephone directories. But not Cracker Barrel, which owns a string of home-style restaurants throughout the Southeast.

Warehousing, page 16

Sun regains pace with 64-bit chip

By Jean S. Bozman

Something to talk about

Lawler's remarks, based on anecdotes shared with him by fellow users, stirred talk at the conference — but not among users. Tandem officials privately fumed about what they called an unexpected attack. Some users and developers said Lawler was really complaining about the rapid pace of change in computer systems in general and that it was wrong to single out Tandem.

In response to Lawler's speech, Dave Wilson, Tandem's product marketing manager for parallel software, said the vendor will change the way it releases operating system revisions. Instead of bundling together bug fixes and new functions, the company will provide a menu of software products for users to select whether they want defect repairs, new features or both.

Tandem's general practice of releasing updates to its operating system would be Tandem, page 16
Novell 'net debuts
In the better-late-than-never category, Novell plans to unveil a series of Internet products tomorrow, sources say.

IBM PC Co. reorganization
IBM PC Co. tries some wide-reaching internal changes even as another senior executive quits.

Building a better Internet
Explosive growth in Internet use and demand for high-speed access pipes to the 'net have forced major Internet service providers to install high-speed switching systems.

DG's technology plans
Data General laid out its technology plans for 1996 at last week's user group meeting in Washington. The move off the Motorola chip to Intel won wide-spread support, although users aren't in a hurry to migrate.

ATM-based multimedia
AT&T outlines its grand vision for meshing voice and data networks into one ATM-based network.

Marketing tools
A multimedia package promises to help Crush your competitors.

Chip vendors unite
It seems like Intel's aggressive dominance of the chip industry is driving some of its rivals into each other's arms.

Hero worship
Hero worship has no place in the computer industry, Bill Labiris asserts.

The year 2000 problem
The "year 2000 problem" will prompt droves of IS managers to retire in the third quarter of 1999, Michael Cohn predicts.

IS progress report
Max Hopper says we're still far from the machine intelligence envisioned in 2002: A Space Odyssey, but computers are racing ahead of the schedule.

Date fields
The "year 2000 problem?" will prompt droves of IS managers to retire in the third quarter of 1999, Michael Cohn predicts.

Data warehouses
Building data warehouses under the right kind of leadership is an opportunity to standardize data definitions and formats enterprise-wide, Charles Babcock says.

Chip choices
A recent flurry of announcements by major chip vendors promises a flood of user choices by mid-1996.

Scaling Windows NT
Sales of NT are booming for departmental servers, but users say they are waiting for NT systems to scale higher before assigning them tasks that now run on large Unix servers.

Testing processes
A new tool makes it easier to map and test business processes. At the same time, it provides a way to export the information in the flowchart to other applications.

Enterprise networking
Streamlining alarms
Micromuse upgrades its management monitor. It lets administrators combine and filter alarms from diverse sources into one virtual view.

The Internet Page
New DB/2 version due
IBM's signature DB/2 database will get a major makeover in late November when a long-promised release finally ships.

Large systems
New DB/2 version due
IBM's signature DB/2 database will get a major makeover in late November when a long-promised release finally ships.

Application development
C++ gaining ground?
Are corporate developers overcoming their fear and loathing of C++? Large organizations say the object-oriented language still doesn't meet their needs, but it is slowly gaining popularity.

Smalltalk in components
Parc Place/Digital ships a new version of its VisualWorks Smalltalk development system that lets developers break applications into components.

Choice Cuts

Your boss wants you to look into it. Vendors are pushing it. Why the heck should you care? What every buyer should know about workflow.

In Depth, page 93

The Hillsborough County Sheriff's Department takes a high-tech approach to crime fighting: a development team to write programs that improve efficiency and cut costs.

Application Development, page 69

Technical Sections

Desktop computing
PC storage
Many client/server users are confronted with an out-of-control storage management mess, with desktop PCs that often are stuffed with 1GByte or more of mixed corporate and personal information. Here's how companies are coping.

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Features

In depth
The word on workflow
Careers
Contracting out
Technical skills alone aren't enough for IS professionals who want to make it as independent contractors.

Learning Notes
The next version of Notes will send many developers back to class to learn new skills.

Marketplace
Doing Comdex
Comdex attendees are setting their plans and priorities for the happening in the desert.

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IBM attributed its slow growth to sluggish sales growth in Europe and the U.S. and price-cutting by competitors. The moves come when IBM appears to have once again slipped back into single-digit revenue growth in the third quarter. Its PC shipments grew only 2.4% in the third quarter of this year, while shipments at rival Compaq Computer Corp. were up 15%, according to estimates by International Data Corp. (IDC) in Framingham, Mass.

Robert Stephenson, the PC Co.'s senior vice president and group director, last week outlined a series of steps the company is implementing as it tries to revitalize its sagging PC business.

Weiler goes over to Wang
Latest to exit Lotus
By Jaikumar Vijayan

IBM still hasn't figured out how to succeed in the mass-volume, low-margin, short product life cycle PC business,” said David Wu, an analyst at The Chicago Corp. in New York.

Observers point to vendors such as Compaq and Hewlett-Packard Co., which have grabbed market share from IBM with aggressive price cuts, reliable availability and short product cycles.

“Even if you have a good story to tell — and IBM doesn’t right now — with the changes going on at the executive level, it is hard to communicate that story, let alone deliver on it,” said Ted Julian, editor at “The Gray Sheet,” an industry newsletter published by IDC.

Jim Manzi, chief executive officer at Lotus, resigned earlier this month; Chief Financial Officer Edwin Gillis left in August; and K. C. Branscomb, senior vice president of business development, resigned last week.

The rumor mill also had been churning about the prospects of Chief Technology Officer John Landry, but last week he was named strategic consultant to IBM, advising both Lotus and IBM.

It took a change of focus at Wang — from its bankrupt minicomputer past to itssoftware sales — to attract Weiler’s attention.

“If you told me earlier when I was at Lotus that I would end up at Wang, I would have expressed some surprise,” Weiler said.

The Billerica, Mass.-based firm hopes to double its software sales from $21 million this past fiscal year to about $40 million by the end of next year, said Dan Casey, Wang’s president and a former vice president of Lotus’ spreadsheets division.

IBM's new leader, Robert Stephenson, said the company is taking a leadership role.

The latest recipient of another high-level Lotus executive departure is Wang Laboratories, Inc., which snapped up Robert K. Weiler, with headquarters in Billerica, Mass., last week after he left the IBM fold.

Weiler, who was senior vice president of worldwide sales and marketing at Lotus Development Corp., will lead Wang’s growing PC imaging and software business. Deborah Wesemer has taken over Weiler’s duties at Lotus. She formerly was in charge of Lotus sales for North and South America.

“I decided to leave Lotus at the end of August,” Weiler said. “I like being at a company where what you do day-to-day has a direct impact on the business,” he said, referring to his desire to take on a leadership role.

Weiler said he didn’t think his departure and other recent management exits would seriously affect Lotus’ future.

IBM will split its various PCs, servers and notebook products into three specific manufacturing categories based solely on demand and manufacturing priorities.

A substantial panning of system configurations to reduce product clutter and user confusion. For instance, IBM will offer computers in the first quarter of 1996, he said.

“IBM is still following rather than leading, they are getting more in tune with price changes,” said Eric Libow, manager of PC support at Alamo Rent A Car, Inc. in Fort Lauderdale, Fla. He added that IBM is “finally getting the message” that it needs to make a more streamlined commercial product differentiation.

But some observers remained skeptical. "The basic problem is..."
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Delay forces change in IBM storage plans
New Ramac on deck as Seascape slides

By Craig Stedman

The tide isn't coming in as planned for IBM's multipletform Seascape storage devices, and the change is forcing a major course correction as the computer giant struggles to stay at the crest of the mainframe disk market.

Engineering delays on the multipletform Seascape architecture, which will connect multiple disk and tape controllews in a fault-tolerant ring that supports both mainframes and other servers, have caused a chain of events at IBM:

• Seascape deliveries have been postponed from the middle of next year to 1997.

• The delay is pushing IBM back to the drawing board to design a 390G-byte version of its Ramac mainframe disk array for shipment next year. Ramac work was supposed to end with a 180G-byte model that became available last week.

• IBM also is resurrecting plans to double the amount of data its 3990 Model 6 disk controller can handle. The increase to 3600 bytes was scrapped earlier this year to save IBM's storage budget for Seascape-related work.

Analysts said they don't expect Seascape and its Seastor storage controller to hit the beach until mid-1997 — which would be a year behind schedule. IBM already has lost its dominant position in mainframe disk shipments and is running neck and neck with EMC Corp. Relying on the aging 3900 controller for almost two more years will further test IBM's ability to retain customers.

"You have to give IBM credit for keeping the 3990 alive, but the bottom line is that it's an outdated architecture," said David Velante, an analyst at International Data Corp. in Framingham, Mass.

Kept waiting
Barnett Banks, Inc. in Jacksonville, Fla., has almost a terabyte of Ramac capacity installed and expects to buy an equal amount of Ramac 2 by the end of 1997. But Seascape's delay will force the bank to postpone its plans to merge its mainframe and Unix storage under a single management scheme, said Michael Pudy, manager of resource management at Barnett's information systems unit.

"Strategically, what we'd like to do is have one central location for all of our data," Pudy said. "This definitely pushes some of our time lines off, and that costs us money from a management perspective."

Other users were more sanguine about the Seascape delay. "If they got it [out next year], I'd love to have it," said Gerard Higgins, assistant deputy vice president for information services at Nynex Corp. in New York. "But I think I can live with [Ramac] for quite a while."

Storage issues affect users from mainframes on down. See Closer Look, page 39.

-- Kim S. Nash

Novell to feed NetWare's Internet-hungry users

By Kim S. Nash

Novell, Inc. users holding their breath for NetWare-based World Wide Web servers can exhale.

The vendor plans to unveil tomorrow a series of Internet products based on source code licensed from a start-up in Bedford, Mass., according to source familiar with the deal.

Novell will rename and resell 10-month-old American Internet Corp.'s SiteBuilder Web server starting in the first quarter of next year, the sources said. A Novell official confirmed that the company will sell Unix and NetWare server products at the Internet World show in Boston this week but declined to provide further details.

Ignored no more
The estimated 45 million NetWare users have been largely ignored when it comes to Web technology, analysts said.

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Novell plans to resell American Internet's SiteBuilder Web server early next year; American will sell the product beginning in December.

Product: SiteBuilder
Platforms: NetWare 3.11, 3.12 and 4.x
Administration: Can be managed from NetWare, DOS or Windows PCs
Price: $1,495, $1,995 with application development tools from Vermeer Technologies in Cambridge, Mass.

Microsoft Corp.'s Windows NT: Boston Edison Co., for example, has had nowhere to turn to fulfill its plans to build internal Web sites for human resources, news posts and other applications, said John Dubiel, manager of planning and technology. The utility, which runs 100 NetWare file servers, jumped at NetWare Loadable Module on Novell's operating system, Version 3.x and higher. It was written for NetWare, unlike the rival product from Process Software, which is a port of a Unix version of Process' Purveyor server.

Help wanted on the Web, plus Halloween tips. See page 54.

Oracle users balk at change in show

By Dan Richman

Some users and business partners of Oracle Corp. are worried that the company's quest for customer accounts may wreak the annual education-oriented Oracle Users Week (IOUW).

A marketing event called Oracle Open World is scheduled to make its U.S. debut next fall in San Francisco to compete with each other," said Mike Corey, chairman of the International Oracle Users Group-Americas, the national Oracle user group.

Oracle Chief Executive Officer Larry Ellison confirmed that IOUW and Open World will be combined next year but said, "We're not doing away with user week at all."

Pairing the events might work out fine, or it might limit IOUW's educational content and diminish its independence from Oracle's corporate agenda, said several user group officials who asked to remain anonymous.

Conflict of interest?
"Oracle already goes ballistic if we make presentations on PowerBuilder [a tool used by Oracle developers but owned by rival Sybase, Inc.] or on older versions of its products," one group official said. "If Oracle were in control of IOUW/Open World, it would probably eliminate those presentations."

Zack Nelson, Oracle's vice president of marketing, said the company wants to sponsor a single, national event for the national user group and other Oracle user groups, such as applications users. He said the user group would retain control of presentations relevant to them.

Oracle user group officials say IOUW is an intensive, education-oriented gathering of committed Oracle users who pay about $1,000 each to attend the weekendlong gathering. About 8,000 people attended IOUW in September, and many stayed for the entire conference.

Oracle Open World has been a marketing-oriented event held without the user group's input. For the past few years, it has been held in Japan and attracted as many as 30,000 people.

Even some of Oracle's vendor partners said replacing IOUW with Oracle World would be a mistake.

"Stressing quantity of leads over quality isn't the game anymore," said Cameron Jenkins, vice president of marketing at Acucobol, Inc. in San Diego, an Oracle business partner.
The TPC-C™ benchmark is the industry standard test for measuring database On-Line Transaction Processing (OLTP) performance. On July 24, Hewlett-Packard published the record-setting 5369 tpmC Oracle7 benchmark.

## Oracle7 Performance

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These are the top 20 Oracle, Informix and Sybase TPC-C benchmarks as of September 29, 1995.

Oracle7's superior OLTP performance is the result of an advanced architecture with features like non-blocking consistent queries and unlimited row-level locking—features that Sybase and Informix don't have. For proven scalable performance on SMP, clustered and massively parallel systems, call Oracle at 1-800-633-1071, ext. 8101.
'Net providers will overhaul network

Fast switches are in; router role is recast

By Bob Wallace

Explosive growth in Internet use has spurred demand for higher-speed access pipes to the 'net, forcing major Internet service providers to install high-speed switching systems.

That was the impetus behind last week's announcements from UUNET Technologies, Inc. and Netcom On-Line Communications Services, Inc. that they will overhaul their router-based network infrastructures in favor of Cascade Communications Corp.'s high-speed switches.

Analysts labeled the strategy, claiming users have everything to gain and nothing to lose.

"The switch approach lets Internet service providers easily scale up their networks and offer reliable services, whereas routers typically don't scale well and can cause problems transmitting over head," said John Morency, a principal at The Registry, Inc., a consultancy in Newton, Mass.

"Cascade switches support higher performance than even high-end routers. And by optimizing their networks, Internet service providers realize savings that can be passed along to users."

Problems with routers in large networks aren't unusual. It was a router anomaly that caused a networkwide brownout on the Internet in late August [CW, Sept. 11]. Lending further credibility to the switch approach, MCI Communications Corp. opted for Asynchronous Transfer Mode switches rather than high-end routers to form the backbone of its recently announced network for the supercomputer centers, which were the first tenants on the Internet.

User said Internet providers have no choice but to move to the higher-speed switched network architecture.

"This is a must-do for providers because, from a user perspective, the winning provider will be the one that delivers the service at the quickest speed and the lowest cost," said Barbara Maaskant, director of information services at the Rollins School of Public Health at Emory University in Atlanta. "Users are already showing signs of becoming frustrated with bottlenecks and bandwidth limitations."

Ongoing construction

Bandwidth on the Internet can be compared to the country's highway system. As more and larger on-ramps have been added, and as traffic has increased, the need to expand the highways has become a pressing issue.

The Internet comprises large routers linked by the copper cables, and the company plans to reach the Internet from 300 cities worldwide within the next two years.

Performance Systems International Network (PSINet) already is installing Cascade switches in its network. Analysts said other service providers still rely on the router-based approach, but their migration to the switch-based approach is inevitable.

"You can't keep pace with one or two high-end routers if your network isn't too large," said Christine Beckart, director of broadband consulting at TeleChoice, Inc., a Verona, N.J. consultancy.

"But once an Internet provider's network approaches the size of UUNET's or PSINet's, you need switches to consolidate traffic and control [WAN] costs."

Help wanted cooperative may bump up Web usage. See page 54.

News

Phone service jockeying continues

AT&T Corp. plans to ask Connecticut regulators to let it offer local telephone service for business and residential customers starting early next year as part of a nationwide push into local markets. The AT&T filing is part of a larger push for position as Congress moves toward a deregulation of phone service that would allow regional Bell operating companies to enter long-distance markets and let interexchange carriers invade local markets.

AT&T filed for similar permission in California Sept. 1, and it has already won permission to provide service in Chicago and Grand Rapids, Mich. Gaining regulatory approval is a minor hurdle compared with hammering out the details with the local phone company. For example, AT&T has been unable to reach an agreement with Ameritech to allow delivery of service in Chicago and Grand Rapids.

Notes 4.0 enters final beta

Lotus Development Corp. has released the final beta version of Notes 4.0 to 10,000 business partners. This is the final beta phase for the product, which is set to ship to year's end.

Cisco to buy NT!

Cisco Systems, Inc. last week continued its buying binge with an agreement to buy Network Translation, Inc. (NT), a Palo Alto, Calif.-based maker of address translation and Internet firewall equipment. No sum was specified.

Libel suit dropped

New York investment firm Stratton Oakmont, Inc. last week agreed to drop its $200 million libel suit against Prodigy Services Co. in White Plains, N.Y. In a carefully worded statement, Prodigy said it was "sorry if the offensive statements" posted on Prodigy's online service harmed the plaintiff's reputation. However, Prodigy will still try to overturn the New York court's prior ruling that Prodigy is a publisher liable for its on-line content.

Netscape cuts prices

Mountain View, Calif.-based Netscape Communications Corp. cut its prices by as much as 50% on its Unix-based and Microsoft Corp. Windows NT-based World Wide Web servers last week. The NT version of Netscape's Commerce server went from $1,495 to $1,295; the Unix version dropped from $5,000 to $2,995. Netscape's Communications server for NT was reduced from $780 to $495, and the Unix version fell from $2,950 to $1,295.

Maxtor in buyout discussions

Troubled hard disk maker Maxtor Corp. revealed it is in acquisition discussions with Hyundai Electronics Industries Co. Hyundai Electronics is a subsidiary of Korea's Hyundai Business Group, which owns 27% of the San Jose, Calif.-based company. Separately, Maxtor said it lost $414.5 million on sales of $281.4 million in its second fiscal quarter. It lost $54.7 million on sales of $171.4 million in the same quarter last year.

KnowledgeWare suits settled

Sterling Software, Inc. in Dallas said last week it had settled a class-action lawsuit filed by shareholders against KnowledgeWare, Inc., for $17 million in cash and stock. Sterling acquired KnowledgeWare in November 1994, but the settlement will be paid by KnowledgeWare's insurers and from stock placed in escrow at the time of the merger.

Digital info via TV

The Internet Group, a consortium led by Intel Corp. of hardware manufacturers, software developers, broadcasters and cable companies will soon provide PC users a way to receive digital information, such as software, Web pages and magazines, over a broadcast television signal. En Technology Corp. in Keene, N.H., plans to ship the first products based on the Internet Group's technology by January.

EMC buys McData

EMC Corp. in Hopkinton, Mass., has signed a deal to buy McData Corp., a maker of network switches for connecting host systems and storage devices in data centers. Ironically, McData's main product is a switch for IBM's EasyNet fiber-optic interconnect, and IBM is EMC's archival in the mainframe disk market.

EMC to open up Symmetrix

EMC Corp. in Hopkinton, Mass., next week will open up its Symmetrix 5000 mainframe disk arrays to data from pieces of not-so-big iron, sources said. Thanks to a new SCSI interface, Symmetrix customers will be able to attach both mainframes and Unix systems to a single array. However, storage capacity will have to be partitioned between the two boxes because EMC doesn't enable them to share the same data.

News Shorts

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MGZ's CIO calls it quits

Edward N. Altman, Metro-Goldwyn-Mayer, Inc.'s vice president of MIS since January 1994, leave the company Nov. 3. Altman said he has completed his mission at the Santa Monica, Calif.-based studio, and will begin looking for a new information systems position in the entertainment industry.

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News

By Neal Weinberg

WASHINGTON

Data General Corp. drew a technology road map last week that takes the company from the dead-end Motorola, Inc. roadmap last week: Pentium-based Aviion departmental and enterprise servers. It will add Pentium Pro processors early next year; machines with commodity, four-processor motherboards from Intel by midyear; and systems that link multiple motherboards by the end of 1996.

Attendees at the North American Data General User Group here said they wouldn’t necessarily place their orders at the show; but they were glad that an upgrade path had been cleared.

Larry Spanier, manager of information systems at F. E. Moore Co. in Chicago, said he has stayed with DG’s older MV systems because of the expense involved in moving his custom applications used to design items such as choir robes.

“What I heard today is very significant,” Spanier said. Because DG’s switch to Intel opens up a new world of applications, Spanier said he is leaning toward the new Avions. “It’s not if, but when,” he added.

Similarly, James B. O’Loughlin, director of IS at L. S. Starrett Co. in Athol, Mass., said he has been wrestling with the issue of moving off his proprietary MV system. “We know we have to move forward,” O’Loughlin said. “But what’s the carrot?”

The IS director said the new manufacturing applications written for the Intel architecture could be the deciding factor. DG is “paving the way for the future; the only thing is I have to catch up with it,” he added.

Not everybody is thrilled with DG’s move to Intel, however. “For me, it’s a problem,” said Eric Raskin, president of software. “It’s like pulling teeth to get people to develop software for the 88000 chip now,” he said.

Receptive crowd

But the overall reaction has been positive, said Thomas Bounds, president of Bournemouth Computer Products, Inc. in Mague, Miss., and vice president of the DG user group.

Many of the older MV customers are “not in as big a hurry” to move off their platform, Bounds said. But newer customers will be moving rapidly to the Intel-based Avions, especially because the new systems run Microsoft Corp.’s Windows NT.

DG says its new servers will run more than 15,000 applications, including all the leading database and enterprise software. That includes 7,000 shrink-wrapped Windows NT applications.

Users were also pleased with DG’s financial results, which were announced last week. Snapping a long losing streak, DG turned a $1 million profit in its fourth quarter, with revenue increasing from $283 million to $313 million.

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Win 95 bug fixed
Client security gap affects few users

By Laura DiDio

Microsoft Corp. acknowledged last week that a bug in Windows 95 and has since fixed, a security problem with the file and printer sharing facility in Windows 95 clients.

The potential security loophole could have affected, and actually could still affect, a small percentage of Windows 95 clients attached to Windows NT and Novell, Inc. NetWare-based servers. “Businesses that turned on the Windows 95 File and Printer Sharing capability could have unwittingly created a situation where unauthorized network users or hackers could gain read-only access to Windows 95 PCs, including sensitive corporate data,” said one network administrator at an East Coast financial institution, who asked not to be identified. The administrator became aware of the potential flaw two weeks ago.

The fix for the security short-fall is a set of free updated network drivers, which Microsoft released on various on-line services last week, said Windows 95 product manager Bob Bennett. Those services include CompuServe, America Online, Prodigy and The Microsoft Network. Users can also call Microsoft’s FastTips line at (800) 956-4200.

Bennett emphasized that only those users who physically enabled the File and Printer Sharing capability in Windows 95 are affected. “To the best of our knowledge, few, if any, users were affected,” Bennett said.

To be susceptible to the security flaw on NetWare and Windows NT Server networks, users would have to configure their Windows 95 PCs to share files and printers with other network users employing File and Printer Sharing. They would also have to manually enable the remote administration feature or install Microsoft Remote Registry Services, Bennett said.

Microsoft also issued an update last week to correct a similar problem with Windows-based networks and Samba Corp.’s Unix shareware network client called the Server Message Block (SMB) client. The bug in the SMB client lets users send illegal networking commands. “The Samba client is the only known SMB client at this time,” he said. Bennett.

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By Dan Richman

Racing to keep up with the competition, Informix Software, Inc. last week said it will buy Stanford Technology Group, Inc., a multidimensional database tool maker in San Francisco. Stanford Technology makes MetaCube, a product that lets users view data in three or more dimensions — such as by time, place and product — rather than the two dimensions that relational database management systems typically allow (see related story, page 61).

Informix’s purchase, to be completed as a stock swap, follows Sybase, Inc.’s recent purchase of similar technology and Oracle Corp.’s acquisition of a company specializing in an alternative technology based on a multidimensional database management system.

Informix plans to integrate some features of MetaCube into its RDBMS, said Marianne Elkholy, Informix’s director of data warehousing and retail strategy. She wouldn’t say when the integration would take place or which features would be integrated.
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* And for volume deployments, our “Gold Disk” licenses offer significant savings.
Users: Revamped Paradox 7 easier to use

By Cheryl Gerber

If Microsoft Corp. hasn't already stolen the show, then Borland International, Inc. may have a shot at capturing some of the desktop database market with the Windows 95 and NT version of Paradox. Slated for introduction today, the product will ship in December.

By all accounts, Borland has eradicated in the 32-bit beta version of Paradox 7 every weak point in its predecessor, Paradox 5. "It's a huge product overhaul," said Dan Ehmann, a consultant and president of Kallista, Inc. in Chicago and a Paradox beta tester. Beta testers said the chief im- provement in Paradox 7 is that it is easier to use. Borland's extensive use of Wizards, which are equivalent to Wizards in Microsoft's Access, has made the product easier for less-experienced users as well as developers to use. The import/export process, electronic-mail merging and the formation of charts, tables and reports are examples of more than a dozen pro- cesses that have been automat- ized by Experts.

Paradox 7 also tout more than 100 developer productivity tools for visual and rap- id application development. The 32-bit version is integrated not only with Novell, Inc.'s PerfectOffice suite, with which it is bundled, but also with Microsoft's Office 95.

Better than Access?

Some Paradox beta testers are Access users. They said they couldn't help but compare the two database products. "Paradox 7 is a better upgrade than Access 7, and the reason is for- ward compatibility," Ehmann said. "The transition to Paradox is easier because the current version of Access has undergone a language change, while the Paradox language hasn't changed in the 32-bit version. But some who prefer Paradox to Access said, nonetheless, that Microsoft has irreversibly captured the market. "As good as Paradox 7 is, it might be diffi- cult to sustain applications written in it [if the number of de- velopers drops in the future]. It's tough to find a Paradox de- veloper these days. Many of them have moved to Access, PowerBuilder or Delphi develop- ment," said Frank Andersen, a systems analyst at Peter Pan Seafoods, Inc. in Seattle and a Paradox 7 beta tester. However, some beta testers said finding Paradox developers depends on where you are. "Seattle is a tough spot for anybody who's not Microsoft," said Charlie Russe, systems ad- ministrator at New United Mo- tor Manufacturing, Inc., a General Motors/Toyota joint ven- ture in Fremont, Calif. "I have no trouble finding Paradox de- velopers here."

Borland has established a loy- al base of Paradox developers since it released the product in 1985. And the Borland develop- er community has continued to grow, said Richard Gorman, vice president of Borland product marketing and management. Attendance at the Borland de- veloper conference in San Diego in August — 2,200 developers — was up 30% from 1994, he said. Nonetheless, one analyst said times could be tough for Bor- land. "It'll be hard for a stand- alone database to beat a data- base bundled in a suite as successful as Microsoft's," said Chris Le Toqc, principal at Sof- Tracks Software Research in Los Altos, Calif. "Access is kicking serious butt in the desktop database market. It has grabbed the focus away from Borland. Paradox has to grab attention [back] by delivering differentiated fea- tures and distinguishing itself as more geared to the developer community," Le Toqc said.

However, when Paradox 7 ar- rives in PerfectOffice 7 for Win- dows 95, the database will finally compete with Access on a level playing field. But the delay of PerfectOffice 7 until the first quarter of 1996 could delay that competition.

Toshiba rolls out the notebooks

Toshiba continued its product rollout last week with a line of Pentium chips aimed at the sub-$5,000 segment of the market. Although he declined to reveal exact pricing, Len Herbstman, Toshiba's senior product manager for the new Satellite Pro Series, said the 410CDT, with an active-matrix color screen, will cost less than $5,000. The 410CS, with a dual-scan color screen, will cost less than $4,000. Pricing will be available in early November, Herbstman said.

Toshiba is waiting to an- unless pricing on the Satel- lite Pro series and the new high-end Tecra 700 notebook series "because we wanted to see where our competitors are putting pricing," said Tom Scott, general manager of To- shiba.

Toshiba's new Satellite Pro models have a 13.4-in. screen, a 90-MHz Pentium processor, support for two Type II PC cards or one Type III PC card, a removable floppy disk drive and CD-ROM module and 64 bytes of RAM. The new systems will ship in November.

The difference a year makes

Laptop sales to overcome slump and hit record high in 1996

By Mindy Blodgett

Despite a slowdown in the pace of laptop shipments, analysts expect explosive growth in the sector next year as more users turn to notebooks as their primary computing environment and vendors make Pentium chips standard in the mobile units.

Demand is also expected to climb as high-end features trickle down to the value end of the market. That could push laptop growth to the highest numbers in the past couple of years, analysts said, though they declined to name specifics.

However, some who prefer Paradox to Access said, nonetheless, that Microsoft has irreversibly captured the market. "As good as Paradox 7 is, it might be diffi- cult to sustain applications written in it [if the number of de- velopers drops in the future]. It's tough to find a Paradox de- veloper these days. Many of them have moved to Access, PowerBuilder or Delphi develop- ment," said Frank Andersen, a systems analyst at Peter Pan Seafoods, Inc. in Seattle and a Paradox 7 beta tester. However, some beta testers said finding Paradox developers depends on where you are. "Seattle is a tough spot for anybody who's not Microsoft," said Charlie Russe, systems ad- ministrator at New United Mo- tor Manufacturing, Inc., a General Motors/Toyota joint ven- ture in Fremont, Calif. "I have no trouble finding Paradox de- velopers here."

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News
FCC to keep tight rein on frame-relay pricing

But cost to users likely to remain about the same

By Neal Weinberg

If you're considering frame-relay service for sending data across a wide-area network and you're hoping rates will drop when the telecommunications carriers file formal rates with the Federal Communications Commission later this year, don't hold your breath.

If you are a large user adept at power negotiations, now is the time to link a deal for frame-relay service. But don't forget a clause that lets you renegotiate in the off chance the new rates are lower.

And if you are a smaller company just window-shopping, it may make sense to wait for the new rates to come out so it will be easier to compare prices.

Those are the recommendations of telecommunications analysts who are trying to predict the effects of the FCC's recent ruling that carriers must file formal frame-relay rates in the next 60 days.

Currently, frame-relay service, unlike long-distance service, is unregulated. Carriers voluntarily publish list prices that are mere jumping-off points for hammering out customized contracts, according to Rick Malone, an analyst at Vertical Systems Group in Dedham, Mass.

When the formal tariffs are approved later this year, the FCC said, carriers must file detailed rate structures that are conducive to apples-to-apples comparisons, consumers want to rock the boat by offering new customers better deals.

The plus side of the FCC ruling is that "it's always nice to have a level field where you don't have to be a power negotiator to get frame relay," said Tim Burke, an analyst at Yankee Group in Boston. The downside is an additional layer of government regulation, he said.

Analysts agreed that actual prices will remain about the same. Carriers will honor current contracts and will not want to rock the boat by offering new customers better deals.

"Price is very important, but it's not necessarily the only or most important factor," Smith said.

The FCC ruled that frame relay, which breaks up transmissions into discrete packets, is a basic data transport service rather than an enhanced service, and is thus subject to tariff regulation.

The FCC also said the carriers must unbundle frame-relay service from frame-relay equipment.

And Mike Smith, an analyst at Datapro Information Services Group in Delran, N.J., said there is more to a frame-relay contract than price. Carriers offer managed services that include value-added features such as network management, service and repair.

What to look for in the fine print when purchasing frame-relay service:

- Check the frame discard rate to ensure essential data is not lost
- Be sure the frame delay rate is adequate in case of congestion
- Make sure the frame burst size is appropriate for your needs
- OLAP might not need multidimensional databases anymore. See page 61.
Warehousing

CONTINUED FROM PAGE 1

By using an internal World Wide Web architecture rather than a traditional LAN, the company has avoided having to write client programs for each of its PC and Macintosh user groups. Instead, Web browsers from Netscape Communications Corp. provide a consistent, cross-platform interface for the 175 to 200 users who will access the warehouse by the end of next year.

An internal Web application runs over the Internet infrastructure but resides behind a company's own security layers, which protect it from random 'net surfers.

The goal of Cracker Barrel's project is to give us access to financial information systems and bug fixes — sounded unique.

According to Lawler, a technical consultant at CrestCo Ltd., a financial information systems firm that tracks London Stock Exchange trades, some Tandem users who ignore new operating system releases risk losing support services because Tandem provides prompt help-line assistance for only "the last two or three releases." Users on older versions have to wait for help, he said.

In agreement

Other users echoed some of Lawler's concerns.

Giancarlo Scaini, systems manager at Societa Per I Servizi Bancari (Society for Banking Services) in Milan, Italy, said Tandem's release practices create a need for his company, which administers consumers' debit-card transactions for Italian banks.

"So many releases in such a short time — it's in conflict with continuous availability," Scaini said. "We would have to bring a system down to test [new software]. It's important that we have continuous availability." Mark Pietlisha, manager of Tandem systems support at Wells Fargo Bank in San Francisco, said Tandem users have seen a drop-off in support since 1993, when the company started emphasizing telephone assistance instead of site visits by systems experts.

Several major newspapers team up to offer help wanted ads on the Web. See page 34.

Tandem's quarter off, Treybig steps down

Shrinking profit margins and disappointing fiscal 1995 profits prompted a top-level management shake-up at Tandem last week, including the replacement of founder James Treybig as president and chief executive officer.

Tandem said it earned $19.8 million on $604 million in sales for its fourth quarter, compared with net income of $71 million on $640 million in sales for the same period a year ago. Earnings for fiscal 1995 were $107.5 million, down from last year's profits of $170 million.

That hurt

The company cited the delayed introduction of its Unix-based Integrity servers that hurt quarterly sales to telecommunications customers, a key Tandem market.

The company also realized lower-than-forecast revenue for its product line. And Tandem's networking products subsidiary, UB Networks, suffered declining sales, the company said.

Treybig announced he is ending his 20-year tenure as Tandem's president and will step down after the company names a replacement in the next several months. Once that happens, he will become chairman of the board at Tandem.

In addition, two other top longtime Tandem executives — Chief Operating Officer Robert C. Marshall, a 20-year veteran, and Donald E. Fowler, general manager of the solutions products group and a 10-year veteran — will retire in December, the company said. Thomas J. Perkins, the company's current chairman and an original venture capitalist investor in Tandem, will remain on the board of directors.

James Johnson, chairman of The Standish Group International, said Tandem has struggled with the problems faced by a proprietary systems vendor trying to move to the open systems products demanded by the marketplace. But Tandem had been sluggish to move, he said.

David Lawler, president of the International Tandem Users Group, said the management changes caught users by surprise. But he added that the moves signify Tandem's commitment to move into a world of open systems.

"People see it as a healthy move. Tandem is well positioned in technology terms, and they see that the significant changes in the sort of senior executives announced will be good for Tandem," Lawler said. "People needed to see they're actually willing to change the culture of the company."
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Think Compaq can beat HP PCs for network-ready features and prices? Prepare to have that idea shattered.

You should ask what Compaq means by 'network-ready.' For instance, are their PCs easiest to set up in multivendor networks? Is their management solution industry-standard — and can it manage all brands of PCs, not just their own? Are all management features available under Windows 3.1? Are they free? In HP's case, the answers are all yes.

In addition, HP ranked best overall among desktop personal PC users in the 1994 J.D. Power and Associates Customer Satisfaction Study. So call 1-800-322-HPPC, Ext. 9396, for more information and the name of your nearest HP dealer. We're more network-ready than anyone.

HP mouse and keyboard. †Source 1994 J.D. Power and Associates PC Customer Satisfaction Study. Study conducted among business users and based on 1,528 user respondents. MS-DOS is a ©1985 Hewlett-Packard Company PPG423 Intel inside
pentium
Oracle Web package raises Internet ante

WebSystem could replace network software at user sites

By Dan Richman

BOSTON

Oracle Corp. is expected to raise the stakes here today in the Internet game with the debut of a free World Wide Web browser and software that adapts its relational database management system to Internet use.

Analysts and users said the products in Oracle's WebSystem suite, and similar products from competing vendors, are significant enough to herald a major change in client/server computing. That change will be the shift toward using the Internet instead of conventional networking software, which may culmi-
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In Dante's *Inferno*, the damned in the seventh circle of Hell must stand neck deep in boiling lava. Not that things are quite that bad in today's business world. At least you can get GroupWise—the groupware solution from Novell. Its Universal In Box helps you control the flood of information by letting you see and manage E-mail, appointments, faxes, even voice mail—all from one place. And with GroupWise you have the option of using a laptop, phone, or pager to retrieve your messages no matter where on earth (or in Hell) you are. So follow the lead of over 5 million users who are already being kept in the loop, and out of limbo. — To learn how other companies are staying on top, check out [http://www.novell.com](http://www.novell.com) on the Internet, or call us at 1-800-778-1851.
NT server routing tool ships

By Bob Wallace

Eicon Technology, Inc. has become the first internetworking vendor to ship a product said to enable Microsoft Corp. Windows NT servers to support the wide-area network routing functions of stand-alone branch office routers.

With built-in routing, users can cut LAN congestion by going directly to the servers, rather than over LANs, to access files. Built-in routing can save users hundreds of dollars per site by making stand-alone routers unnecessary.

Eicon's product, called WAN Services for Windows NT, comes just months after Compaq Computer Corp. teamed with Cisco Systems, Inc. in a similar effort, but those companies didn't announce a delivery date. Microsoft has also jumped on the bandwagon with plans to build routing features from Bay Networks, Inc. into its Cairo operating system that will ship in mid-1996.

The Eicon approach differs from Microsoft's project in that Microsoft is building routing directly into the operating system. "This gives you a much tighter coupling than using cards with their own software," said Skip MacAskill, a senior research analyst at Gartner Group, Inc. in Stamford, Conn.

Novell, Inc. became the first major server vendor to build routing into its servers in the early 1990s.

Users said they see benefits besides cost savings by integrating routing capabilities into NT servers.

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You see, they may be Compaq servers. But they are Compaq-Microsoft-Oracle-SAP-Intel-Novell-SCO-Sybase-Cheyenne solutions. (We just couldn’t fit all those logos on them.)

COMPAQ

Has It Changed Your Life Yet?
Business execs fault IS info gap

Survey says IS fails to provide accurate cost data, performance measurements

By Mitch Wagner

Computerization continues to fail to provide business executives with the information they need to make important management decisions.

That grim observation came last week from a Price Waterhouse survey conducted among about 200 executives from all areas of business, including marketing, financial functions and information technology.

"It comes down to communication: Are the IS people communicating with the business folks?" said Winthrop Cody, vice president of information systems at Copeland Associates, Inc., an investment company in East Brunswick, N.J.

He and other IS professionals at a recent annual Society for Information Management conference last week in Orlando, Fla., said the findings struck a familiar and disillusioning chord.

Several said the reason behind the lack of good business information is that IS managers haven't been able to find out what kinds of information business executives really need.

"IS professionals are not marketing and financial professionals," Cody noted. "There have got to be people in those areas that can define their needs."

Only 13% of executives in all business functions said they had good information to anticipate the needs of their markets. The executives surveyed also cast doubt on the accuracy of cost data, integration of financial and other business data and the extent to which performance measurements are actually tied to business strategies (see chart).

The survey was conducted in conjunction with Lawson Software in Minneapolis. Lawson makes client/server business software.

Separation anxiety

Information technology often fails to provide good business information because IS departments are isolated from the rest of corporate culture, said Brian Coffman, director of the management center for CNI Group, Inc., a real estate investment firm in Orlando. Coffman, an assistant to CNI Group's chief executive officer, is working as a facilitator between the IS department and other business units in his company.

"Most of the time there is a definite boundary between any business units but especially for IS people," Coffman said. "It's often difficult to communicate outside in a walled-off IS unit."

James Krueger, director of corporate information services at Hydrite Chemical Co. in Brookfield, Wis., said IS managers must get beyond tending to their systems and talk to business executives to define what the company's needs are.

Krueger said Hydrite is struggling to close the gap between user needs and what IS delivers.

"We spend the greatest amount of time at work involving the user, finding out what they need, more than what we spend on technology," he said.

Ask for what you want

Mantra-media consultant Dudley Cooke, president of the Executive Insight Group, Inc. in Bryn Mawr, Pa., said the problem with information quality often arises because businesspeople don't ask for the information they need.

"It's easy to say you didn't get the information you wanted," he said. "But did you ask for it?"

Joseph Felieu, manager of the San Mateo, Calif. service center for the U.S. Postal Service, said he found the results of the Price Waterhouse survey disheartening. "It's certainly not a formula for a long career life if your internal client is saying that about you," he said. "That's disillusioning."

'HOT' multimedia software gives users competitive strategy tool

By Tim Ouellette

Don't look now, but your competition may be ready to Crush you.

Crush, a multimedia software offering from Hands on Technology, Inc. (HOT), promises to help companies develop marketing strategies based on market factors and internal data.

The package lets users segment markets, define trends, prepare competitive positioning maps and create marketing strategy reports. Users enter their own data into various templates and can also import data from databases, spreadsheets and on-line services to the templates.

Throughout the process, video clips and multimedia case studies can be viewed to provide background information and tips on how to get the most out of the software.

The strategy of targeting business users may be a wise move if Burlingame, Calif.-based HOT's claims — that the $490 package has $1 million in product orders already — are true.

But don't believe the multimedia hype just yet.

"It is a good start, but it has a ways to go," said Scott Nelson, research director for marketing tools and analysis at Gartner Group, Inc. in Stamford, Conn. He said the user interface can be confusing, and the inclusion of a proprietary database format can limit some use of the plan results. He ticked off a number of features that he said would make the product more useful. These include providing customized data sets for different markets, which can be obtained by downloading from HOT's World Wide Web site (http://www.hot.sf.ca.us) or adding a planned metrics module.

"There are still no real shortcuts to going through and thinking hard about your marketing situation; it doesn't really come through with a silver bullet," said Stephen Barrager, an analyst and beta user at Strategic Decisions Group, a management consulting firm in Menlo Park, Calif.

But Barrager was positive about having a mix of video clips and an actual working application. "It has a much different feel to it than a normal how-to package. For a start-up company it would be right on the money" because it provides the benefit of learning well-known marketing strategies without paying for a consultant, he said.

"If you are in an industry like high technology, just keeping up with the competitive environment is a monstrous job," Nelson said. Crush can benefit firms that don't have a good handle on their market planning process, including small high-tech start-ups, he added.

Crush's multimedia display makes it easy for users to highlight market trends in a number of categories that affect their businesses.

News

OCTOBER 30, 1995

HOT'S multimedia software gives users competitive strategy tool

By Tim Ouellette

Rick Davis, HOT's marketing director, calls Crush a real-time insight tool because users can update their strategies instantly based on new information. They can still use the multimedia features to get background information and create better presentations.

More important, users can step into their competitors' shoes and look at their own strategy.

Crush is one of the first multimedia titles to target business users instead of consumers. To make updating the video clips and adding new data sets easier, the application part of Crush is loaded onto a user's PC, while the multimedia content remains on the CD-ROM.

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Computer Industry

By Michael Goldberg

SANTA CLARA, CALIF.

Since introducing ServerNet systems technology in July, Tandem Computers, Inc. has pledged to make it an industry standard by selling it to other systems makers. And while no one is crowning Tandem as the next rising giant, other industry players are starting to listen.

For example, last month, NEC Technologies, Inc. joined with Tandem to build a fault-tolerant server with ServerNet inside to run on Microsoft Corp.'s Windows NT operating system. The server is due in the middle of next year.

And two weeks ago, Compaq Computer Corp. said it would team with Tandem to produce low-latency clusters of Compaq servers using Peripheral Component Interconnect cards with ServerNet hardware and software. Compaq hopes to unveil PC server clusters late next year or early in 1997.

ServerNet, which was designed to be an express train for data that doesn't require CPU processing, has piqued the curiosity of other potential buyers, claimed James Treybig, president and chief executive officer of Tandem.

In one of his last official interviews as CEO here last week, Treybig said the firm will announce another deal, similar to the Compaq one, "with another major company very shortly."

For $2 billion Tandem — traditionally an enterprise server maker for financial and telecommunications companies that need fail-safe systems — the Compaq deal means changing from a specialty shop to a mass-market retailer.

"ServerNet puts us in an entirely different game," Treybig said. He said he will announce soon the formation of a technology and components unit at Tandem to mass produce ServerNet hardware and software.

Treybig said he is pursuing this not unlike the way microprocessor companies license their chips. "Intel has leg up on rivals and will until the second half of next year. See page 41.

Intel has leg up on rivals and will until the second half of next year. See page 41.

Industry starts to take heed of Tandem's ServerNet

Tandem’s James Treybig says ServerNet will push the company into the retail realm

By Jakubam Vijayan

It seems like Intel Corp. is aggressively dominating the chip industry at driving at least one pair of rivals into each other’s arms.

Advanced Micro Devices, Inc., the largest manufacturer of Intel clone chips, last week announced it will acquire tiny rival NextGen, Inc. in a move aimed at bolstering AMD’s competitive position against Intel.

"The acquisition" puts AMD in the game," said Tony Massimini, an analyst at Semico Research Corp. in Phoenix. The result could be more low-cost alternatives to Pentium and Pentium Pro-class systems by late next year, observers said.

Cherished chip

The $860 million acquisition will give AMD instant access to NextGen's recently announced Nx896, its sixth-generation processor technology. The Nx896 reportedly may rival Intel's next-generation Pentium Pro.

The move eliminates any need for AMD to continue with its own struggling sixth-generation project that targets the Pentium Pro. The company is seriously behind in its plans to launch even a fifth-generation Pentium rival; the delay was expected to have a domino effect on the sixth-generation project.

AMD said it will drop the last project immediately. Instead, it will introduce to market NextGen's new version of K6.

Some in the industry also see the merger as a tacit admission of AMD's continued inability to clone Intel chips without using Intel copyrights.

AMD's K5 chip represents the company's first original clone design, but has encountered compatibility problems with standard x86 software have already pushed the launch of the chip well past its mid-1996 schedule. AMD's president and chief executive officer of Tandem will become a commodity ingredient provider for AMD and continue to operate out of its Milpitas, Calif.-based headquarters.

All future products will be merged with AMD's brands. As a result of the merger, the Nx896 chip will be manufactured on a sophisticated 0.35-micro pre-production process at AMD's new billion-dollar Fab 25 plant in Austin, Texas.

"NextGen is a great fit for us. It gives us a very experienced design team; it gives us a very competitive sixth-generation product," said an AMD spokesman.

NextGen, which was the first vendor to announce Pentium clone products last year, also was the first to announce a Pentium Pro-class product this year. As a result, it has been severely hampered by the lack of its own manufacturing capability. It has had to rely on third-party foundries to do its manufacturing.

Despite rounding up more than 100, mostly very small, customers worldwide, fewer than 100,000 of NextGen Pentium clones are estimated to have been sold so far. Intel is estimated to have sold more than 30 million Pentium chips.

The pending merger of the two chip makers will unite the following strengths:

- Advanced chip technology
- Design and development talent
- Strong marketing and distribution
- Financial strength
- Substantial manufacturing capacity
- Capacity

NexGen gives clone maker needed ammo

Windows NT is working to

Dueling dowsies

By John Surace

Jobs in the race: The pending merger of the two chip makers will unite the following strengths:

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Keycode #12070
Blind worship?

Someone here in the office recently asked me why we didn’t play the story of Jim Manzi’s exit from IBM/Lotus on page 1 instead of page 6.

I said one had to read only the first few paragraphs of the story, where our reporter noted that big Lotus customers were quite indifferent about Manzi’s leaving. Our own poll of big Notes customers showed conclusively that what users will or won’t do with Notes deployments will be affected little, if at all, by Manzi’s departure.

Coincident with the news of Manzi’s resignation, attention turned to Ray Ozzie, the chief Notes engineer who industry pundits and the press have linked to the success or failure of Notes. Will Ray leave IBM/Lotus once his commitment to bringing out the next rev of Notes is complete? Isn’t Ozzie the guy that Bill Gates labeled as one of the five top something-or-others in the world?

Who cares? The media and the industry pundits, that’s who. This industry, in its passion for hero-worship, has formed mantles of invincibility around certain individuals, mantles that don’t match the real importance of these people to vendors and the products they produce.

Lotus for years has said its future has been staked unquestionably on Notes. Do you think for one minute that the board of directors of a billion-dollar company (bought this summer by IBM for $3 billion) would bet its future on one individual, a person who could walk out the door and be killed by a drunk driver?

Idolatry has deep roots in this industry. Years ago, it was assumed that the departure of Gene Amdahl, the creator of the 370 architecture, would sound the death knell for IBM’s large systems business. Sure it did. A few years later when Gordon Bell, the father of the PDP-11 and VAX computers, left Digital, the same dirge was played. That was just before Digital mounted the most impressive growth record in its corporate history.

I am not trying to take anything away from the people mentioned here; each is extraordinarily gifted. But their importance to their companies has to be kept in perspective. At times the racket made by analysts and, regrettably, by the media makes that a difficult task.

Manning Web isn’t as easy as it looks

I don’t completely agree with your “Web wise” article [CW, Oct. 2]. Hypertext Markup Language (HTML) generators will no doubt be added to every word processing program, but there will always be a place for programmers who can design a Web page.

Web pages can be interactive, for example, allowing a user to enter information to generate a query and return a document with useful information. This type of interactivity will take someone with programming knowledge on many fronts, and an understanding of how to design a Web page that handles forms would be essential.

Things like virtual reality mark-up language and Sun Microsystems, Inc.’s Hot Java will make designing a Web page a little more complicated than just firing up your word processor and dropping in a few bit maps to get a decent HTML file.

Will Microsoft learn from its errors?

“What? Microsoft weak?” [CW, Oct. 2] was a fascinating piece. Not highlighted in your article, and perhaps not in the book, either, is how Microsoft will cope with failure. Learning is about failing. If you go from success to success for years and years, you build up enormous potential for failure.

To use a boxing analogy, how strong a chin does Microsoft have? If the computer industry holds any lesson for us, it is that knockout blows always happen eventually, and occasionally they self-inflicted.

Digital’s knockout blow was denial about Unix. IBM’s hubris was pretty much across the whole spectrum. But these blows aren’t always terminal. Digital and IBM got up off the canvas to fight again, weaker but perhaps wiser, and each of them with new managers.

Microsoft, at 20 years old, is no longer a spring chicken. I, for one, would pay good money for a ringside seat at the fight of the century between Microsoft and the No. 1 contender, whoever that might be.

Eric Leach
ELM Ltd.,
Middlesex, England
100010.3012@compuserve.com

OS/2 overlooked

I was very surprised there was no reference to OS/2 in your article “Intel’s P6 chip falls short of expectations” [CW, Sept. 25].

The article says Pentium Pro runs 16-bit applications slowly and Windows 95 users probably wouldn’t benefit from it because of the 16-bit code in Windows 95 and limited availability of 32-bit applications. OS/2 is a mature, 32-bit operating system with an abundance of 32-bit software. I expected to see reference to its ability to handle 16-bit Windows applications with this Pentium Pro “problem.”

James Veit
Bartlesville, Okla.
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Verbatim

From a report by analyst Stan Dolberg at Forrester Research, Inc., urging information systems departments to focus on customer-oriented systems:

Many large corporations have an internal focus that puts them in danger of losing market position. By failing to directly connect customers to back-office systems, these companies cede competitive advantage. Information technology must support marketing's need to quickly snap together new customer applications at "market speed."

Reinventing the back office for connecting to customers should be on the horizon for many organizations. Smart companies will recognize that rethinking the back office for connecting to customers is an important priority for the next decade.

Information officer's priority list... must have the facility to at least calculate the development of all "passive" components of the operating system information, and access remains vital to all companies. Cisco Systems is particularly adept at connecting to customers and access remains vital to all companies. Cisco Systems has developed a consulting business to help companies integrate customer information with back-office systems.

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Factoring in the year 2000:

- Worried about YYYY date fields showing up as 000? Afraid to ask the chief financial officer for somewhere between $2 million and $20 million to fix the two-digit year problem?
- We in the IS field know the truth. The danger that date-critical calculations will go haywire is real, it's cataclysmic, and we're toast. Everything from legacy to LAN may be flat on its back. But you can't expect most folks to appreciate the impact of something that is more than four years away. Heck, my dry cleaner has trouble looking beyond next Tuesday.

So don't lose sleep or hair over the Y2K problem; there are a bunch of ways out of this mess. Show no remorse, have no regrets and choose your strategy from the list below.

1. Retire. Get out of the business and make it someone else's problem. This may be the most common solution: IS executives will bail out in droves. Come the third quarter of 1999, the world will be devoid of IS managers and just in time for us to finally get something done.
2. Relegate. Another popular option is to assign the problem to someone else. Bury it within the ranks. Stick in some subordinate. Or, better yet, impose it on an innocent contractor. Look at the high price of Y2K work. There's the burden of firing the contractor when the contract is not met. And the cost of paying the contractor to do the same work. The contractor will probably split the difference on the back end.

Stanley Kubrick's 1968 epic movie 2001: A Space Odyssey was special because it rigorously attempted to extrapolate the technology of the day and depict the advances we might create. The film is often cited as one that will inspire future generations of designers and engineers. Stanley Kubrick's 1968 epic movie 2001: A Space Odyssey was special because it rigorously attempted to extrapolate the technology of the day and depict the advances we might create. The film is often cited as one that will inspire future generations of designers and engineers.

For knowledge, an even more sophisticated level of understanding that we characterize as wisdom involves such philosophical attributes as the humbling awareness that the models we've constructed will not always hold true. Wisdom requires the intuitive ability, born of experience, to look beyond the apparent situation to recognize exceptional factors and anticipate unusual outcomes.

These elusive characteristics are rare in humans and totally nonexistent in our machines. Before AI researchers can hope to develop applications that emulate this level of understanding, they will have to achieve a far more profound understanding of human thought processes. Beyond that, we'll need computers with more processing power — by many orders of magnitude — to approximate the capabilities of the human brain.

Today, we're about as far from achieving either of those objectives as space travel to the moon is from interstellar voyages. Each is a challenge of mind-numbing scale; yet, given the plodding progress of rocket science, my money's on information technology's getting there first.

Hopper, a former chairman of AMR Corp., is the Sabre Group, which is principal at Maxwell D. Hopper Associates, Inc., a consultancy in Dallas, OcTober 30, 1995.
Lotus Organizer 2.1.

Because WEDNESDAY'S no good for BOB.

There's some kind of cosmic waffle rule that applies to business meetings: if you reschedule once, you will have to reschedule a dozen times. Because if it isn't Bob, it's Joan, or Gayle or Jorgé. And meanwhile, the perceived importance of any meeting is inversely proportional to the number of times it is pushed back. It's been proved.

And that's why there's the new Organizer™ 2.1 with group scheduling.

Organizer makes setting up a meeting easy. You choose your attendees from a point and click list. You see their availability. Once you've selected a time and location and posted your invitation, Organizer makes it easy for your invitees to accept, decline or send a delegate.

Organizer works in conjunction with cc:Mail™ or Notes™ for users in workgroups or across entire organizations.

Of course, Organizer is famous as a personal information manager—and now it goes a step further, adding group scheduling that's easy to install, use and support.


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Get a grip on storage management

Managing data on multiple desktop PCs can be like trying to get dressed when your wardrobe is scattered across several rooms in overflowing drawers and closets.

Many client/server users are confronted with an out-of-control storage management mess, with overloaded servers supporting growing populations of desktop PCs that often are stuffed with a gigabyte or more of mixed corporate and personal information.

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Many possible solutions

Corporate America is dealing with this problem, or in some cases isn't dealing with it, in various ways.

Most organizations end up with a policy like Stone Container's in which they "encourage users to put important data on the server or back it up on their local drive," Wilson said. But leaving end users in charge of critical data doesn't guarantee that the data will actually be backed up.

At Brewers Retail, Inc. in Mississauga, Ontario, the company has "given each user what is essentially a private, server-based virtual network drive and has encouraged them to store all their important data or large volumes of information on those drives," said Pomp Mallick, the company's information systems director. As a result, "nothing really valuable is sitting on anyone's desktop," he said.

Still, short of mandating diskless workstations—a situation that would force users to store data on common network drives—most organizations can't ensure that critical corporate data never resides on end-user desktops. And despite the risk that situation presents, few companies have the staff or budget to develop and implement effective PC storage management policies.

"We do not manage [storage] down to the desktop; we're having a heck of a time managing it at the network level," said Larry Lemay, a network engineer at Computer Language Research, a Dallas-based corporate tax processor. With 1G- to 2G-byte disk drives becoming common on workstations and those drives typically holding 20M to 300M bytes of "real corporate data," protecting that data has become a major issue for the firm, he said.

Lemay and other users described the following four alternative desktop storage management strategies:

Storage management, page 41

Intelligent agents at work

Since no existing software is up to the job, Publishers Printing Co. is having a third party develop a custom application that will track individual files, using software agents running in the background.

Proactive data management is literally "a huge issue" for Publishers, which "can't have [printing] presses waiting for anything," said Hank Hensel, network manager at the speciality printing firm. The company has about a terabyte of storage space to manage across 25 servers and 250 workstations.

If employees can't get the information they need and deliver it to the printing presses at exactly the right time, the Sheperdsville, Ky-based printer faces expensive downtime.

The custom application, which will run on Unix and PC platforms, will also manage storage space on servers. This way, the software will "marry hierarchical storage management to a workflow process," Hensel said.

"I need to conserve disk space, but data has to be already on the drive when I need it, and I deal with 300M- to 400M-byte files. The only way to do that is with a very sophisticated data management tool," he said.

The company also is seeking to eliminate situations in which a server failure causes one user to pull data to a PC to work on it, and users on the next shift can't find that data.

"We will track where the data was saved to, who was working on it, how long they had it and how it was changed," Hensel said. Today, data is tracked by a bar-code system that depends on "wandering" of bar codes on employee badges and removable disks. Data ultimately will be tracked and moved electronically.

—Steve Moore
Sure, you might get lucky. On the other hand, you've got a lot to lose. That's why, when purchasing software, you'd better know exactly what you're getting into.

For example, Lawson Software supports all the leading client/server platforms. So no matter what hardware system you move to next, we'll be running on it. And you can migrate through technological changes and upgrades without additional licensing fees.

Finally, twenty years of experience has resulted in some pretty amazing functionality. Ask our users. Call Lawson Software at 1-800-477-1357 for accounting, human resources, distribution and materials management. We're making it as painless as possible.
Flood of next-generation chips predicted

Intel, Cyrix, AMD to release high-speed processors next year

By Jalal Arida

By the middle of next year, users will have a flood of microprocessors to choose from when a variety of next-generation chips hit the market.

These chips will be faster, smaller, consume less power and be packed with multimedia capabilities. They will be aimed at the portables, commercial desktop and consumer segments, industry analysts said.

"1996 is going to be the year of the Pentium-class processor. Prices have gone down, the market is evolving... and Pentium is going to be the generational processor that almost everybody will be using," said Mike Griffin, an analyst at In-Stat, Inc. in Scottsdale, Ariz.

This means users can expect relatively less-expensive alternatives to Pentium-based systems, particularly in the consumer market.

LeMery, who runs the bench tests for Intel, said the upcoming Pentium-class chips will range in speed from the relatively less expensive Alternative A to the high-end Alternative D. Alternative A will fit in the Pentium class better than today's mobile Pentiums but at much higher clock speeds, the report said.

Pushing Pentium performance further on the desktop and portables will be Intel's so-called SGCC technology. This is an enhanced Pentium design with larger on-chip caches, lower supply voltage and new multimedia extensions.

In the forecast

Also due to ship in volume next year is the sixth-generation Pentium Pro, slated for launch Nov. 1. The chip will be initially positioned in the high-end Microsoft Corp. Windows NT-based workstation and symmetric multiprocessor environments. Intel declined comment on future products.

Meanwhile, rival chip maker Cyrix Corp. in Richardson, Texas, will produce a version of a fifth-generation multimedia chip. Aimed mainly at the consumer market, the chip will have an initial clock speed of 120 MHz, a PCI bus interface, an integrated graphics accelerator, a 16K-byte cache and new multimedia extensions.

"The window of opportunity [in the Pentium market] is moving fast, and all these vendors are trying to get products that will fit in the Pentium class before it starts hitting its peak," said Tony Massimini, an analyst at Semico Research Corp. in Scottsdale, Ariz.

Other chips scheduled to ship next year include the following:

- AMD's recently announced K6-400 MHz version of its K5 technology for the entry-level desktop.
- IBM's 8088 processor.
- The 150-MHz K5 chip from NexGen Inc. The sixth-generation chip has been renamed the K6 following the acquisition of NexGen by Kyocera Advanced Micro Devices, Inc. last week (see story page 32) and will be aimed at high-end commercial desktop and mobile market segments.

- AMD's long-delayed K5 Pentium clone, a 150-MHz 486DX4 chip mainly for the mobile market, as well as a 75-MHz version of its K5 technology for the entry-level desktop.

Storage management

CONTINUED FROM PAGE 39

- Equipping each workstation with its own backup hardware and software that users must remember to invoke.
- Installing shared departmental storage servers on which all or select data on LAN-attached PCs is backed up regularly by users or a local administrator.
- Making users responsible for loading their data at regular intervals onto large domain servers that central administrators back up as a central repository over the corporate LAN or WAN.
- Purchasing or developing complex software for automated, remote backup of all workstations via the corporate LAN or WAN.

Unfortunately, each strategy has significant drawbacks, users said.

The first approach becomes more costly with each added PC, yet users fail to do backups. The second calls for secure management of growing collections of backup tapes for each department, and the third and fourth solutions can bog down networks.

With 500M to 500M bytes of data to back up on each of the 1,500 workstations at Computer Language Research, "we're talking terabytes of data. And you just can't go across the wire with that type of data on a constant basis" when the corporate network consists of 4M and 16M bit/sec Token RINGS, Lemay said. The firm currently requires users to load their own data onto large network servers and is searching for a more effective, permanent solution, he added.

The rapid rise of client/server computing has made PC storage management difficult even for large organizations with comprehensive technology management strategies. "Seventy percent of the [desktop data management] solution is in end users' hands," and today's sophisticated, independent-minded PC users "have to be approached in the right manner and shown the pros and cons" of new corporate data management practices, said Paul Jones, general manager of information services at Unocal Corp. in Annheim, Calif.

But currently, "there is not a best practice for backing up to the desktop" largely because doing so "is all wrapped into security, virus protection, informational espionage and social engineering" issues, he said.

Backup isn't the only problem with PC-resident data. IS staff also want to make sure that PC disks are sized properly so that they aren't overflowing or too empty. But cheap disks have made that a low priority for now.

After working with a benchmarking firm to determine best practices for storage management, Pacific Gas & Electric Co. in San Francisco concluded that "while there are some cost savings to be achieved by managing data storage utilization on file servers, we are far less certain about managing data storage utilization on the desktop itself," said Nancy Wong, manager of the utility's computer and network operations.

A key problem cited by users is the lack of "space management software" that can track new files as well as additions to existing files on servers and PCs, as well as tools that manage the storage system. Pacific Gas & Electric Research must manage 'literally millions' of files and would "run out of space just keeping a history on that," Lemay said.

In the mainframe world, Lemay added, "there were tools that could readily tell you where the storage consumption culprits were. Despite a year-long search, he said he isn't "aware of any software out there in the LAN world that will help."
You brought them Windows and e-mail and the internet. Isn't it time you brought them and

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EPSON COLOR INK JET PRINTERS. It's not easy to drag the hesitant masses into the future. But it sure is fun. Seeing their eyes go wide. Hearing their expressions of murmured awe. You're standing on the mountain; you can see the promised land. So, where will you lead them? How about into a world of inspiration? Of expression. A world of 720 x 720 dpi of intense, Photo Quality color, and laser caliber text. It's Epson's world. All it takes to get there is about $449 and a little vision. Call 1-800-BUY-EPSON x3400 or see http://www.epson.com.

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Solutions for a small planet™
NT aims for high end

By Jean S. Bozman

ike Chicago's fog in the Carl Sandburg poem, Microsoft Corp.'s Windows NT is creeping into the high-end enterprise server market on little cat feet.

Sales of Microsoft's Windows NT Server are booming for departmental servers; larger systems, however, lack needed support. The lack of such support means big data warehouse and mission-critical transaction systems will continue to run on more processors, users said.

**Scaling up is hard to do**

Scaling up a system to run on more processors is a challenge for any operating system vendor, whether it is IBM, Hewlett-Packard, Sun Microsystems, Inc. or Microsoft.

For example, IBM added Unix SMP servers just last year and extended them to eight CPUs this summer. Windows NT, launched in July 1993, runs comfortably on four CPUs and even up to eight CPUs, Microsoft officials said. But 16 CPUs is still a reach, they said.

In comparison, some Unix systems have been scaled up to 32 or even 64 CPUs, analysis said.

Industry observers said Microsoft must work with hardware vendors to overcome potential bottlenecks in SMP servers.

Key areas for scrutiny include cache memory, main memory and the speed of disk I/O. If any of these parameters isn't right, problems could become flooded with data, Dan Kusnetzky, an analyst at International Data Corp. in Framingham, Mass.

Mike Nash, Microsoft's group product manager for Windows NT Server, said it isn't fair to compare how NT and Unix handle CPUs. The important thing, he said, is that NT can handle many CPUs.

"The NT server; the applications and the scheduler don't worry about how many CPUs are in the system," he said. "That's transparent to them."

—Jean S. Bozman

**ABA proposes controls on electronic signatures**

By Gary H. Anthes

A legal framework for using digital signatures has just been published by an American Bar Association (ABA) committee. Its authors say the framework will act as a catalyst for adopting the technology and lead to more secure electronic commerce.

They also said the draft guidelines, which are open for public comment until Nov. 30, should serve as a foundation for the development of electronic commerce legislation. That may help head off a legislative Tower of Babel that the states are now creating, some observers said.

Digital signatures use cryptographic key pairs — one private and one public — to create tamper-proof messages. They aren't used to encrypt messages, which contains confidentiality but to ensure message integrity by providing a way to prove a message or file hasn't been altered in transit.

Digital signatures also ensure "nonrepudiation," protecting the recipient against a sender who falsely claims that he never sent a message.

The committee's 100-page document is essentially a long list of legal and technical definitions with amplifying explanation of the definitions. For example, it defines the required properties of a "secure key pair" and offers references to other works on the topic.

The guidelines are intended to "establish a safe harbor, a clearly secure, computer-based equivalent to pen-and-ink signatures," the draft said. The digital signature equivalent should minimize electronic forgeries, enable authentication of computer documents, facilitate electronic commerce and add legal support to technical standards for messages authentication, the committee said.

"The guidelines are intended to stimulate a lot of thought as to what digital signatures are, how they are to be used, what the legal consequences are and how one might want to design a certificate system," said Kenneth C. Bass, an attorney in the Washington office of Venable, Baetjer, Howard & Civiletti and a member of the committee drafting the report.

The ABA paper devotes a lot of attention to the legal duties and liabilities of "certification authorities," which maintain directories of public keys.

**Entry-level RAID**

Storage Dimensions Co. in Milpitas, Calif., has introduced SuperFlex 1000, an entry-level RAID storage system that initially will support Novell's NetWare. The 33-GB system costs $7,035.

**Performance problems?**

Landmark Systems Corp. in Vienna, Va., has announced PerformanceWorks, a suite of client/server performance management software that lets administrators troubleshoot slow response times, analyze performance trends and do capacity planning. The software can gather performance data about an application's use of a Unix or PC system's CPU, memory and other resources. Starter kits are available now and cost $7,500.

**SGI adopts new licensing**

Silicon Graphics, Inc. has adopted Globetrotter Software, Inc.'s Flexim software license manager for use with its systems. Flexim replaces Gradient Technologies, Inc.'s NeLS software as SGI's licensing system. SGI also will use Flexim, a software asset management utility developed by Globetrotter.
START WITH THIS BOX AND YOU CAN THINK OUTSIDE ANY OTHER.

WITH YOUR IDEAS PART OF THE BIGGER PICTURE, YOU HAVE ACCESS TO THE WORLD ON THE INTERNET.

CHANGE IS THE KEY TO INNOVATION WITH THE WINDS OF INNOVATION.
Introducing the Z-NOTE® GT, an advanced performance notebook PC, optimized for multimedia.

With endless features and the power of Pentium® processors, the Z-NOTE GT gives your company the tool to do anything you can imagine. Sales presentations fly with hardware MPEG support which allows for 30 frames per second, full-motion video playback. Graphs and charts pop in high-resolution color on oversized 11.3” SVGA displays (select models). And the power comes from where you need it with our ingenious SmartBay which lets you swap CD-ROM for FDD for optional 2nd HDD for optional 2nd battery. All told, the Z-NOTE GT is the multimedia solution for your company. Because you’ve never seen a notebook computer that can take you so far.

**SPECIFICATIONS**

- 75 or 90MHz Pentium processor
- PCI Bus architecture
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### Document-filing products keep HP current

**SureStore server, jukebox among latest releases**

By Stewart Deck

Hewlett-Packard Co. recently marched out a full load of storage products, including disk drives, a digital/audio tape drive and new tape storage systems. Leading this parade of products is a line of document-filing storage products, including an optical jukebox.

Hewlett-Packard is the No. 1 U.S. provider of optical storage products, according to a recent study by International Data Corp. In an effort to maintain its top position, the Palo Alto, Calif.-based company unveiled SureStore Archive Server and SureStore Tape Archive Server, company employees who need copies of a specific form had to call someone in the graphics department. That person frequently had to burrow through stacks of paper to find the form, Matthews said.

If they couldn't find it, "they'd have to go out the graphics plates, print a bunch of forms and then put most of them on a shelf somewhere," he recalled.

With the Archive Server, the forms are stored as images that can be retrieved and printed, Matthews said.

### Big help

The Archive Server also has helped Gene Lester, president of North Texas Computer Service, Inc., streamline his business processes.

"The server "knows where everything is," Lester said. His company keeps images of configuration files on the Archive Server.

Lester said the server has forced the company to decide what will be stored on-line and what will be kept offline.

But making those decisions is far more enjoyable than having to "go back again into the computer room and manually change the external optical disc," he said.

### Arcland's FlowModel tool helps firms chart workflow

By Tim Ouellette

Companies looking to map their business processes now can test these processes at the same time with a new low-cost software bundle from Arcland, Inc.

The FlowModel 2.0 + Benchmarking package from the Malvern, Pa., firm lets users model processes and link related data directly to objects in the chart. Users can then analyze the efficiency of each process.

With FlowModel's data exporting feature, users can include the addition of a strong benchmarking capability, analysis and users loaded the strength and flexibility of the product.

Albany National, a paper product manufacturer in Albany, N.Y., uses the $895 Solutions Pack to document existing workflows and manufacturing process flows in relation to the firm's recent ISO certifications, said Michael Moriarty, supervisor of pressing research and development.

FlowModel 2.0 was designed to work with Microsoft Corp.'s Office suite and runs under Microsoft's Windows 95. It lets users link data to flowchart objects.

The software also provides a complete view of the process, ranging from events to relationships to associated data and applications.

### NT servers

**CONTINUED FROM PAGE 45**

Allchin, senior vice president of Microsoft's business systems division in Redmond, Wash. The next scheduled release of NT will be sometime next year. Cairo, the object-oriented version of NT, will be out in 1997, analysts said.

Allchin said NT already does well on eight CPUs. He agreed that NT needs to scale higher but refused to specify how and when that would happen.

However, the clustering of multiple NT servers, due to start next year, will ease scaling issues for NT, he said.

### Temporary option

Clustered smaller NT servers may compensate for individual NT servers that have reached their capability limits, users said.

Microsoft is working with Compaq Computer Corp., among other vendors, to do exactly this. At the same time, Microsoft and its open systems partners, such as Digital Equipment Corp. and AT&T Global Information Solutions, will work to make sure NT does even better on SMP scaling by 1997, analysts say.

### Bunch of boxes

"The problem is that [NT] just runs out of speed at six to eight processors, so you have to go to a plethora of small boxes in clusters," said Colin Carpi, president of Chartwell Advisory Services, Inc. in Pensacola, Fl.

The firm is building a large financial information services network.

"The idea of clustering NT servers is fine with Carpi. "It does [depend] on having very high bandwidth on your network," he said.

"The concept is to make a big machine out of a lot of little ones, but it's a different architecture. I think this makes all of them have a lot of different kinds."

**Signature**

**CONTINUED FROM PAGE 45**

The keys are issued in tamper-proof certificates that also contain the key holder's name, address and other information.

The certificates can help facilitate trusted business transactions between parties that may or may not know one another.

VeriSign, Inc., one such certificate authority, said the ABA guidelines are a welcome relief from a plethora of conflicting ideas about digital signatures.

Web Augustine, vice president of marketing at the Redwood City, Calif., company said some states have already enacted legislation and more are in the process.

"There are many different interpretations of how digital signatures are and how they can be used," Augustine said.
After a decade of breaking down functional barriers in companies, why do we continue to keep structured and unstructured information apart? Relational databases are stuffed with structured information that is hard for non-technical business professionals, such as salespeople and managers, to access and use. Yet, unstructured information stored in e-mail messages, faxes, spreadsheets and word processing documents is an equally valuable source of corporate knowledge.

As demand for more strategic use of information grows, IT departments must respond with new business applications that unify structured and unstructured information and make it available for day-to-day business use.

Until now, the challenge has been how to leverage information in relational database management systems (RDBMSs) for a wide range of client/server applications. Recently, the rules have changed again. Today's critical applications must meet even tougher requirements: sophisticated workflow processing, enterprise-wide connectivity to customers and suppliers, and support of increasingly mobile users. The sticking point is that transaction-oriented applications are frequently difficult to enhance and modify, and are not architecturally designed to support these new application requirements.

Groupware has emerged as a technology that complements the strengths of RDBMSs. Most people know that groupware is designed to manage and distribute documents anywhere in the enterprise, but far fewer are aware that groupware can give users access to both structured and semi-structured information, regardless of location or computing platform.

To integrate effectively with RDBMSs, a groupware product must:

- Offer a variety of straightforward database connectivity options
- Provide robust support of distributed workgroups and mobile users
- Enable workflow automation to move information through a business process.

Lotus Notes: A Hub, Not An Island

Lotus Notes™ is the tool of choice for building high-return applications that leverage relational and non-relational information. With a variety of data integration products to choose from, developers can now extend groupware applications to include relational data. For many business professionals, Notes™ easy and intuitive user interface becomes the central launchpad to a universe of vital business information. For developers, there are flexible options for integrating data at the application level or even at the server-to-server or transaction level.

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Micromuse cools network cacophony

By Patrick Dryden  

In large distributed environments, "conso- late chaos" can cause central manage- ment staff to miss critical alerts. Client/server envi- ronments generate tons of in- formation about networks, sys- tems and applications. Users and analysts say revamped monitoring software from Mi- croscope USA can help adminis- trators make sense of it all.

Netcool/Omnibus collects da- ta from element managers and management platforms, filters duplicate alarms and correlates events so that support staff can define and manage specific functions. That means router and electronic-mail teams, for example, can have their own vir- tual network monitors that warn them when a certain ser- vice is in jeopardy.

Version 3.0, introduced last week at Enterprise Manage- ment Summit 95 here, boosts performance, scalability and ease of operation through a complete rewrite of the prior Netcool/Omnibus software (see page 58).

Needle in a haystack

One beta tester praised the en- hanced command interface be- cause he could type in a rule or point and click to diagram a relationship for controlling alarms, according to Jill Hun- tington-Lee, an analyst at Data- pro Information Services Group in Delran, N.J.

Huntington-Lee said that is the kind of help needed to con- trol growing networks.

"So many alarms happen in a command center that the staff needs a way to make important events rise above the noise," she said. "Writing scripts to filter alarms can take months, but Netcool/Omnibus does it on the fly and can work across plat- forms." Broad platform support let a beta-tester, whose corporate policy prohibits identification, run the monitor on Hewlett- Packard Co. HP-UX systems.

Digital adds firewall offering

By Michael Goldberg

Accessing the Internet for private communications is an alluring prospect for users looking to save money on leased lines while harnessing the reach of a vast public network. For those con- cerned with confidentiality and informa- tion security, however, the Internet looks more like a jungle than an interstate.

Digital Equipment Corp. has entered the growing field of vendors offering firewall and tunneling products that claim to employ data encryption and user detection techniques to create "virtual private networks."

In May, Digital introduced a series of firewall products to regulate access from the Internet into a private network. Last week, the Maynard, Mass., company unveiled two tunneling products — the Internet Group Tunnel and the Internet Personal Tunnel — that can transport data across the Internet and through firewalls made by Digital and most other vendors.

Observers said Digital's approach of separating the two technologies — the pro- tective firewalls and enabling tunnels — is a departure from the status quo, whereby both capa- bilities are bundled into one package.

"Right now, tunneling is looked at as a value-added feature that's embedded with some other features," Digital, page 58.

ISDN, I presume? Livingston drops prices to rock bottom

By Bob Wallace

Livingston Enterprises, Inc. last week announced Integrated Services Digital Network (ISDN)-based remote access products that analysts said include the industry's lowest priced ISDN PC card.

Users say low-priced cards, combined with Microsoft Corp.'s recent commitment to support ISDN in its Windows 95 operating system and the Federal Communications Commission's efforts to reduce ISDN prices, are making ISDN very attractive.

The product family includes a $299 ISDN modem card for In- dustry Standard Architecture bus PCs, an ISDN branch office router with an ISDN interface for $1,159 and a remote access server that can support 10 ISDN lines starting at $4,490.

"The PC card is easily the cheapest I've seen, with most similar products [priced] well over $400," said Mike Finneran, president of dBrn Associates, Inc., a Hewlett Neck, N.Y., firm that specializes in ISDN educa- tion and consulting. "And the price for the router seems very low."

Users said Microsoft's sup- port for ISDN in its operating system eliminates the need for ISDN-specific applications. Now any applications written for Windows 95 will be compatible with ISDN.

"What a difference a year makes. We're excited and think ISDN's on the right track. This market is really going to grow rapidly," said Bill Horel, chief of the General Services Adminis- tration's communications branch in Philadelphia.

A very big drop

The Pleasanton, Calif., compa- ny's announcement means users can get the performance in- crease of ISDN — more than four times that of dial-up lines — for several hundred dollars less per unit.

At $1,159, the Livingston ISDN router costs $600 less than a similar product from router market leader Cisco Systems, Inc.

Though not yet ubiquitous or consistently provided by ven- dors, ISDN Basic Rate Interface (BRI) service is available on more than 50% of each regional bell holding company's (RBHC) total network lines (see chart).

The products include the fol- lowing:

- The 128K bit/sec. Power-Link128 ISDN Modem for PCs with AT buses costs less than a V.34 modem, which only gives 28.8K bit/sec. performance.
- It supports Intel Corp.'s Plug & Play feature, which means the device automatically config- ures itself once it is installed.
- The product will ship in Decem- ber.
- PortMaster ISDN Office Rout- er has one Ethernet, one BRI and one dial-in port. It supports multilink Point-To-Point Proto- col, which lets the device com- bine the BRI's two B-channels to form one 128K bit/sec link. It will also ship in December.
- PortMaster ISDN Communications Servers were designed for large central sites and can be equipped with two-port BRI modules. They support as many as 2064K bit/sec channels from remote users and come with 10 dial-up ports for users looking to support a mix of access links.
- PortMaster ISDN Communicati- ons Server will ship next month for $4,000 with five BRI ports and for $6,060 with 10 BRI ports. Users can add five-port BRI modules to Livingston Port- Masters for $1,985 each.
Newspapers turn to Web for on-line help wanteds

By Gary H. Anthes

After a decade of small steps and measured returns, the newspaper industry recently got into the on-line recruitment advertising business in a big way.

Six of the nation’s largest daily newspapers posted 21,000 help wanted ads to a common World Wide Web site, CareerPath.com. The Internet service, which is free to job seekers, includes a flexible search engine to locate jobs by geographic region, job category and keywords in job descriptions (see related story below).

The newspapers are part of the New Century Network, an Internet content development and distribution consortium founded in May by nine media companies. The newspapers are The Boston Globe, Chicago Tribune, Los Angeles Times, The New York Times, San Jose Mercury News and The Washington Post.

Analysis said the on-line service is unlikely to bring the newspapers significant revenue anytime soon. Rather, they suggested, the newspapers see the Internet as one way to protect their $13 billion annual classified advertising market.

Some of the newspapers, such as the Mercury News, won’t charge their print advertisers anything extra to post the recruitment ads on-line. The Chicago Tribune will add a $1-per-line surcharge to print ads that also go to the Web site.

“I don’t see how they will make money from this,” said Gary Arlen, president of Arlen Communications, Inc. in Bethesda, Md. “But it is real important that they figure out how to do electronic classifieds, both from competitive reasons and market expansion reasons.”

Arlen said computer access provides advantages over print media for classified advertising. “Say I am in Washington, and I’m looking to move to Chicago. I can automatically search for a home in the $400,000 range with four bedrooms, and so forth,” he said.

“This is an investment in the future,” said Miles Groves, vice president of marketing and business analysis at the Newspaper Association of America in Reston, Va. “If we don’t develop our editorial and advertising products on-line, someone else will.”

More than 100 U.S. newspapers have Web sites, and more and more are putting local classified ads on them, Groves said.

Follow the money?

Timothy Landon, a vice president at the Chicago Tribune, said the newspaper has had an on-line publishing venture under way with America Online, Inc. for some time. “We haven’t made a ton of money,” he admitted. “It’s been hard to make revenue in the electronic market.”

But that is beginning to change, Landon said. He said the Tribune set up a Web page for local recruitment advertising six months ago. Sixty percent to 70 percent of its advertisers pay the $1-per-line surcharge to get their ads on the Web. “It will be a significant revenue stream for us this year, hundreds of thousands of dollars,” he said.

The newspapers issued a statement saying they eventually will accept ads for Internet-only display. They also said they will enhance CareerPath.com to include company profiles and “alerts,” which would notify an employer or job seeker when a candidate or job with a certain profile comes on the market.

Where it’s at

Six newspapers put 21,000 help-wanted ads on-line at http://www.careerpath.com. Users could select any or all of the newspapers, any of dozens of job categories and keywords for searching for job descriptions.

For example, a search of The New York Times’ recruitment ads for job descriptions containing the word “computer” turned up 877 jobs in 57 categories from “accounting” to “warehousing.”

A click on “management” displayed four detailed job descriptions in that category, such as one from Dollar Rent-A-Car Systems, Inc. seeking someone knowledgeable about “car rental computer software.”

But looking for “chief information officer” in all six papers turned up no hits after two minutes of searching.

The search engine ran out of gas after four minutes looking for “programmers” at all six papers. It displayed the message, “The search engine is unable to complete your query. Try submitting your query again.”

— Gary H. Anthes

Surfing on CompuServe

ComputerServe, Inc. in Columbus, Ohio, has announced Spyte, a $4.95-per-month program that lets subscribers surf the Internet. The program, which is due to be available by year’s end, includes three hours of dial-up Internet access per month plus the software to make it happen. Additional hours are $1.95 each.

Secure middleware offered

Working Set, Inc. in Lexington, Mass., has announced DataRamp, middleware designed to give users secure Internet access to data stored in corporate relational databases.

DataRamp uses encryption technology from RSA Data Security, Inc. in Redwood City, Calif.

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— Gary H. Anthes

Briefs

Find a bug, win a prize

Netscape Communications Corp. has announced a "bugs bounty" program that rewards users who find bugs in beta copies of Netscape’s Navigator 2.0 Internet browser. The first people to report a problem to the Mountain View, Calif., vendor can get cash, coffee mugs and other Netscape paraphernalia, depending on the severity of the bug. See http://www.netscape.com for more details.

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Enterprise Networking

Vines users seed regrowth of association

New England customers join to restore Banyan liaison

By Laura DiDio

BOSTON

A new Banyan Systems, Inc. Vines user group has taken root in the same Northeastern soil where a predecessor shriveled and died.

The New England Enterprise Vines User Group held its first meeting two months ago. The fledgling organization fills the void left two years ago when the Massachusetts Banyan User Group (MassBUG) disbanded due to lack of support, said Bob Whelan, assistant director of networking at Northeastern University in Boston.

Whelan and a core group of eight other regional Banyan customers were the driving force behind the new organization. They said they needed a way to get technical updates to regional users between the semiannual Association of Banyan User International (ABUI) meetings.

Plenty of interest

Whelan’s contention that there was a “real void left by the dissolution of MassBUG” was a “real void left by the dissub-group was run by the common- ship during phone conversations across Massachusetts and neighboring states went to each of the gatherings. Topics discussed included the technical ins and outs of Vines 6.0 and the integration of Vines with Microsoft Corp.’s Windows NT and Windows NT Client.

“Feeling that with technology changing so rapidly, it was a necessity to restart the user group locally,” Whelan said. He said networks are getting “more complex by the minute,” and quick feedback is a must.

Other users agreed that the new group helps them.

“Tm all for it,” said longtime Banyan user Richard Kesner, chief information officer at Babson College in Wellesley, Mass. “ABUI is great. But there are a lot of Vines users in the academic community who can’t afford the time off or the money to travel to events in major cities or for local user group meetings.”

Bill Sheehan, senior technical support specialist at Boston-based Shaller and Webster Engineering Corp. and former presi- dent of MassBUG, noted the need to exchange technical information is “greater than ever.”

“The only people who have a handle on the vagaries of the technology are my fellow network managers who are working in the same trenches I am,” Sheehan said. He said the first two meetings served as “mini-tutorials,” which were especially valuable because he was able to learn from others’ mistakes.

Second time’s the charm

Sheehan and Whelan noted that the New England Enterprise Vines User Group won’t fall prey to the same pitfalls that punctured MassBUG.

MassBUG, the users said, died not for lack of interest, but rather because of meeting locations. Many users thought the group was run by the commonwealth of Massachusetts because the meetings were always held in downtown Boston, according to Whelan.

This time around, Whelan, Sheehan and the other six members of the Enterprise Vines User Group Steering Committee polled the perspective membership during phone conversations on a variety of topics and decided to rotate meetings around suburban campus sites.

The next meeting is slated for Nov. 16 at Analog Devices, Inc.’s headquarters in Norwood, Mass. Anyone interested in attending may contact Whelan at (617) 373-4238 or electronic mail at rwhelan@neu.edu.

Digital

CONTINUED FROM PAGE 53

firewalls. This approach allows Digital, in theory, to say to users, you don’t have to replace your firewall, you just have to install [Digital’s] tunneling feature,” said Tim Stionce, an analyst at Aberdeen Group, Inc. in Boston.

Digital’s Group Tunnel software costs $4,995 and was designed for Digital servers running the Digital Unix operating system. Future versions will run on both Morpe’s Windows NT, a spokesman said.

Matt Manares, manager of information security technologies at the Secure Systems Center of Computer Sciences Corp., works with businesses setting up computer systems linked to the Internet. He said he will recommend Digital’s tunneling products for companies linking branch offices and telecommuters to home office networks via the Internet.

Manares said he is worried, however, that tunneling technology in general makes some firewalls too porous. It may allow penetration into areas of a private network the owner did not intend visitors to see.

Micromouse

CONTINUED FROM PAGE 53

"This provides centralized alarm control for 4,000 devices that form a WAN for more than 10,000 employees," said the corporate network manager. "We tried some other correlation engines, but they were too hard to use or too expensive.

He said Netcool/OMNibus "massages" thousands of alarms gathered by the HP OpenView enterprise management platform from element managers for hubs, routers and WAN links.

Without Netcool/OMNibus and its intelligent filtering, the alarms "would soon fill the console screen," the user said.

The software’s default set-

ings and customizable approach can help a management team eliminate excessive training, said Sylvia Clark, senior ana-
ymyst at Aberdeen Group, Inc. in Boston.

A matter of time

Only those organizations with very large, complicated networks need Netcool/Omnibus now, Clark said, but more users will need help weeding out alarm storms as their networks grow more complicated.

To broaden the tool’s appeal to Unix-leery managers, a version for Morpe Corp.’s Windows NT is under development, said Mike Silvey, marketing vice president at Dallas-based Micromouse.

Netcool/Omnibus costs $25,000 for the server with a new SQL-compliant data repository. Probe software kits to gather data cost $7,500 each, and the client software costs $7,500 per concurrent operator.

Security Dynamics Technologies, Inc. has introduced SecurID Key Fob.

According to the Cambridge, Mass., company, SecurID Key Fob is part of a family of network user authentication products that protect and manage access to computer-based information resources. It is a lightweight, water-resistant token designed for securely accessing net-
works from environments outside the corporate office.

The product also works in conjunction with Security Dynamics’ hardware and software access control products in order to authenticate users’ identities. It provides network access with pre-verified users and locks out hackers and trespassers.

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OLAP vendors at loggerheads

By Dan Richman

Everyone seems intrigued by on-line analytical processing (OLAP), a technology that lets end users scrutinize data with unprecedented thoroughness. But a major schism is forming among vendors over how best to deliver that technology.

One camp comprises vendors of multidimensional data-base management systems (MDBMS). MDBMS vendors were the first to popularize the term "OLAP," forming the OLAP Council in Boston to promote this technology and putting their products on the market about two years ago. These products use their own data stores—often proprietary—into which data must be copied or moved before it can be analyzed. MDBMSs are quick because they use pre-aggregated data, or data that has been summarized or pre-calculated in some other way.

Another way

An emerging alternative to MDBMSs is what Bob Moran, a senior analyst at Aberdeen Group, has dubbed "relational OLAP" technology that provides multidimensional analysis against data that remains in a relational database management system. This category of OLAP products works with wares from Sybase, Inc., Oracle Corp. and others.

MDBMS-based OLAP products have some limitations. Pre-aggregation limits their query flexibility, and it is widely reported that they bog down approaching 506 bytes. They also lack the security and administration features of major RDBMSs; that limitation becomes more critical as MDBMSs grow in importance in an organization.

Further, MDBMSs require additional training and expertise to set up and administer. They have limited ability to drill down into the data and show end users how a conclusion was reached. And MDBMSs need dedicated tools, although the OLAP Council last week announced a draft specification for an application programming interface that allows tools to access all compliant MDBMSs.

Relational OLAP products have their own set of pluses and minuses. There is no need to copy or move the data into a specialized DBMS, no need for pre-aggregation and no additional administration. They can also use a variety of tools. Sites retain full control over access and security, and the only limit on a database's size is that of the RDBMS.

On the downside, relational OLAP products often run more slowly than MDBMS-based products. Some MDBMS advocates even go so far as to say RDBMSs are inherently technologically infeasible of providing OLAP.

Users of both types of products tout the virtues of their OLAP, page 64

DB2’s radical redo

IBM updates database to stay in step with the times

By Craig Stedman

Mainframe DB2 is about to shed some of its dowdy legacy trappings and take on a more with-it database look. IBM’s signature relational database will get a major makeover when a long-promised update finally shipping late next month. Version 4.0 of DB2 for MVS is a key piece of the computer giant’s campaign to dress up System/390 mainframes so they don’t look like out-of-place rubes in these client/server times.

The new version adds support for stored procedures and other modern features that until now have been the province of rival databases running on smaller systems. It also lets clustered System/390s share pools of DB2 data; those shared data pools are a key requirement for moving IBM’s so-called “parallel sysplex” clustering technology beyond a hardy band of early adopters (see chart).

More is better

The sysplex concept provides a way to spread applications across multiple mainframes to get more raw power and protect against system crashes. Sysplex customers who are beta-testing DB2 Version 4.0 said the data-sharing support allows them to install IBM’s new air-cooled 9672 models, which aren’t powerful enough yet to take on heavy workloads by themselves.

Toronto Dominion Bank installed the new DB2 release in August and plans later this year to start sharing branch banking data between a 15-processor air-cooled system and one of its more expensive water-cooled ES/9000s, said Phil Zita, sysplex project manager at the Toronto-based bank.

“We were heading toward exceeding the capacity of our single [ES/9000s], so we needed to go to horizontal growth instead of vertical growth,” Zita said. Data sharing “lets us exploit [air-cooled technology] to get at the cost breaks” that stem from IBM’s switch to CMOS DB2, page 64

What is OLAP?

On-line analytical processing is a data analysis technology that does the following:

- Presents a multidimensional, logical view of data to the end user with no requirements as to how the data is stored.
- Sorts, forecasts, tracks trends and performs other complex analyses.
- Lets users move from one query to another and get results quickly and easily.

A query that doesn’t require OLAP is “How many shoes did we sell last month?” One that does is “How many size 10 shoes in red did we sell last month in the Midwest, the Northwest and the Southeast, compared with that same month last year, actual vs. budget?”

The above definition comes from the OLAP Council, a vendor group in Boston. Another, far more complex, definition is available from database theorist E. F. Codd; it contains 12 criteria for a technology to be considered OLAP [CW, July 26, 1983].— Dan Richman
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According to independent computer consultant D.H. Brown, IBM's AIX® is the best-rated UNIX operating system. And when you also have SystemView® for AIX monitoring as well as managing complex networks, your system will easily be able to grow right along with your business, without having to increase the size of your staff.

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Large Systems

Start-up hopes for room in reporting tool market

By Dan Richman

A 2-year-old Silicon Valley start-up is betting there is room for its forthcoming reporting products even in a market crammed with 25 competitors.

Actuate Software Corp. said its suite of six reporting tools differs from competing products — particularly SQR Workbench from Management Information Technology, Inc. in Long Beach, Calif., and Focus from Information Builders, Inc. in New York — in two ways.

One difference is a small database accompanying each report that allows users to analyze the data it contains. That isn’t possible with conventional, standalone reports. The second difference is that after information systems personnel or power users construct reports, end users can break apart their functional components and reassemble them to fit their changing needs.

These are genuine distinctions, even in a crowded market, users and analysts said.

“I was extremely impressed by the technology. It was better and different than other products of the same type that I’ve seen,” said Craig Johnson, a manager of technology planning and development at Kaiser Permanente Health Plan, Inc., a health maintenance organization. Kaiser Permanente is evaluating Actuate’s wares.

By year’s end, Actuate will ship three products: Developer Workbench ($1,895), which will enable developers to create functional components called Report Objects in a dialect of Basic; End-User Desktop ($199), which end users can use to create ad hoc queries; and Viewer (free), which end users can use to access data with Report Objects.

The company will deliver by April 1 its End-User Workbench ($599), which lets power users customize Report Objects; Reader ($695), which allows Report Objects on a network; and Administrator Desktop ($599), the user interface to Actuate’s products.

Actuate’s products can run under Windows or in a client/server configuration with Windows NT, a server running under Hewlett-Packard Co.’s HP-UX, IBM’s AIX, Sun Microsystems, Inc.’s Solaris for SPARC, and Microsoft Corp.’s Windows NT. The products natively access data in Sybase, Oracle, Informix and Microsoft SQL Server and offer Open Database Connectivity access.

OLAP vendors at loggerheads

CONTINUED FROM PAGE 61

choices. “We chose Beacon from Prodeon [Software Corp.] because it will go against any database we want, even [Microsoft Corp.’s] FoxPro,” said Jerry Colfer, director of sales technology at Johnson & Johnson in New Brunswick, N.J.

“I’ve heard the arguments in favor of a unified front end and MDDBMS, but I haven’t seen anything to support their higher-performance claim.”

Eric Khusman, a vice president at Cantor Fitzgerald Securities in New York, praised Arbor Software Corp.’s KDBMS as efficient and rapid and said he isn’t sure he could get similar performance from relational OLAP.

Decision time

There is no clear difference in cost between the two camps, and there are plenty of details that make product comparisons difficult. So how to choose?

DB2 gets radical overhaul

CONTINUED FROM PAGE 61

strings of database procedures in DB2 will reduce the need for client-level coding, and the ability to break up queries into parallel tasks should help speed processing, Gerberich said.

Marist, which has a single mainframe, began implementing DB2 in September for an application that lets faculty members use video in their teaching. The college is using an earlier release of DB2 but will go to Version 4.0 as soon as IBM tests the database with its digital library products, Gerberich said.

The data sharing and parallel querying enabled by DB2 Version 4.0 gives IBM “a mammoth server capability” that makes System/390s more amenable to data warehousing and other decision-support applications, said John Young, an analyst at The Clipper Group, Inc., a consultancy in Wellesley, Mass.

But IBM must overturn the perception that warehousing data on a mainframe “just isn’t cool,” Young added.
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C++ slowly makes the grade in IS shops

By Frank Hayes

C++ is still a relatively unpopular language in corporate development departments, but it's gaining ground. Forrester Research, Inc., Cambridge, Mass., surveyed 50 Fortune 500 companies and found that 20% of their development shops are using C++. While C++ is not as popular as other languages like Cobol, Visual Basic, or C, it is gaining ground in the corporate development world.

Fad or not?
While C++ is used in 20% of the large corporate development shops recently surveyed by Forrester Research, Inc., in Cambridge, Mass., others still dismiss it as a passing fad. "Our MIS department doesn't know the first thing about C++," said Jim Cash, general manager for technical services at Co-Steel Raritan, Inc. in Perth Amboy, N.J. "The only thing they know is that it's the third letter of the alphabet." Nor is C++ universally embraced among financial organizations. "We've looked at object-oriented languages, but this stuff just isn't ready for prime time," said a first-deputy financial officer at Mt. Sinai General Hospital in Mount Clemens, Mich.

Productivity gains doubtful
Yet another problem for C++ is that, while it is a powerful language for building client/server applications for Macintoshes and Windows-based PCs, it is still just another language that isn't likely to dramatically boost programmer productivity.

Beginner jitters
While C++ is a relatively new language, many programmers are not used to learning it. "Mainframe programmers don't want to learn assembler all over again," said Mark Simons, vice president of operations at Integrated Software Solutions, Inc. in Ellicott City, Md. As a result, many IS shops are building Windows-based applications using visual rapid-development tools such as Powersoft Corp.'s C++, page 72.

@ Talkback@cw.com
Do you think C++ is ready for prime time? Is it used at your workplace? What does C++ need to make it something you would use? Send your thoughts to us at talkback@cw.com. Please include your full name. We will publish a sampling of reader opinions in an upcoming issue.

Successful crime fighting takes street smarts, intuition and plenty of legwork. At the Hillsborough County Sheriff's office, first it takes Mapper, the venerable Unisys Corp. application development tool. "When we recently asked [50 large organizations] what they wanted to build, most said assembler," said Sandy Taylor, an analyst at The Standish Group International, Inc. in Dennis, Mass.

Sheriff's office fights crime with help from Mapper tool

By Neal Weinberg

Successful crime fighting takes street smarts, intuition and plenty of legwork. At the Hillsborough County Sheriff's office, first it takes Mapper, the venerable Unisys Corp. application development tool. J. R. Kennedy, commander of data operations at the 900-deputy, Tampa, Fla.-based sheriff's office, has a SWAT team of 10 programmers who write between 10 and 15 applications a year using Mapper.

According to analysts, Mapper hasn't made much of a dent outside Unisys' installed base. But users such as Kennedy, who has a Unix system mainframe, say Mapper is just the ticket. "Mainframe programmers don't want to learn assembler all over again," said Mark Simons, vice president of operations at Integrated Software Solutions, Inc. in Ellicott City, Md. As a result, many IS shops are building Windows-based applications using visual rapid-development tools such as Powersoft Corp.'s C++.

Results: A computer-aided dispatch system that eliminates the need for 26 additional dispatchers, saving $3.1 million annually. And an electronic incident report system that handles 125,000 documents a year, saving $45,000 a year.

Hillsborough County Sheriff's Office
Tampa, Fla.

Challenges: To use database management applications to improve efficiency and control costs.

Solution: Unisys Mapper application development and decision-support query system.

Results: A computer-aided dispatch system that eliminates the need for 26 additional dispatchers, saving $3.1 million annually. And an electronic incident report system that handles 125,000 documents a year, saving $45,000 a year.
No, I didn’t get lunch. Or dinner. All I got was 13 hours with a pile of documents, each with its own set of editorial comments. Which meant I had to coordinate hundreds of comments on a dozen plans that had now become a rainbow of highlighter marks and chicken scratches I could hardly read let alone agree with. So there I sat, page by page, plan by plan, muttering things under my breath while time passed and the sun went down and the cleaning guy packed up his floor polisher and went home, while I sat at my desk looking frantically for those sourballs I had in my sportcoat pocket. Because a guy’s gotta eat, you know?
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Latest Smalltalk version eases developers' woes with large apps

By Frank Hayes

Smalltalk applications are big with corporate developers—and that's a problem. Smalltalk is gaining popularity in information systems departments because it lets developers produce applications faster than with other object-oriented languages such as C++, users say. But Smalltalk also tends to generate much larger applications than C++, and it generates them as single, big programs that require significant amounts of memory and disk space.

And deploying those big Smalltalk applications can be a real challenge.

"You can't just distribute a 12MB byte client [program] to all the systems on a network very easily," said Matt Rosen, assistant director of technical services at San Joaquin Delta College in Stockton, Calif.

Hoping to ease that problem, Smalltalk development group Digitalk, Inc. in Sunnyvale, Calif., has rolled out a new version of its VisualWorks Smalltalk development system. VisualWorks 2.5 lets developers break an application into a set of smaller components. That removes a major stumbling block for corporate developers, making it much easier to slim down fat clients, users said.

With the release, developers can leave out unneeded features from Smalltalk applications. For example, if only Windows-based PCs are used as client systems, developers can remove support for Macintosh and Unix users. Developers can face the same sort of challenge with objects that face the same sort of challenge with objects that make the code smaller, said John Shoun, an IS adviser at Nortel, Inc.'s object technology center in Research Triangle Park, N.C.

And when it is time to distribute enhancements and bug fixes, developers can choose to change only the individual components that are affected.

"You don't have to deploy the application as a single large image. That really simplifies updates," Shoun said.

VisualWorks 2.5 also adds support for foreign languages as well as improved performance with Oracle Corp., Sybase, Inc. and IBM DB2 databases.

C++ is typically used in system-level work, while Smalltalk is used to do business applications.

Mapper

CONTINUED FROM PAGE 69

PowerBuilder and Microsoft's Visual Basic, he said.

Still, C++ is gradually being accepted in corporate development shops. The biggest factor behind this simply may be that these shops are learning how to use object-oriented languages such as C++, Object Cobol and Smalltalk.

"Some of the C++ products give you a good baseline, but I know developers working on mobile digital terminals be-

cause officers who work different shifts in the same geographic area needed a way to pass on updates. The sheriff's office also operates the county jail, and Kennedy worked out tracking systems that keep an eye on everything from supplies to the whereabouts of prisoners on an hourly basis.

Ready and willing

Police officers aren't required to come in and do database searches, Kennedy explained, but his staff of developers are waiting to help. And deputies who routinely use the system quickly become proficient, he said.

In some aspects of his operation, Kennedy uses the latest technology. He has a frame-relay network connecting 12 locations, from substations to three geographic areas needed a way to pass on updates. The sheriff's office also operates the county jail, and Kennedy worked out tracking systems that keep an eye on everything from supplies to the whereabouts of prisoners on an hourly basis.

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Giant home center retailers must deliver know-how with their vast inventories. But is information technology . . .

the right tool for the job?

Richard Nawrot, senior vice president of IS at Payless Cashways, says his chain's information-intensive service efforts might benefit from technology

By Brian McWilliams

With their broad interiors, low prices and vast selection, home improvement centers such as The Home Depot, Inc. appear to follow the strategy of Wal-Mart Stores, Inc., Costco Wholesale Corp., BJ's Wholesale Club, Inc. and other warehouse-format retailers.

But these home centers, which cater heavily to do-it-yourselfers, face a different challenge than other brightly lit repositories for commodity products.

"We bundle what we sell with know-how. In a lot of ways, we're in the service business," says Ron Griffin, chief information officer at The Home Depot in Atlanta. That means The Home Depot, the market leader with sales of $12.4 billion last year, needs to give its customers a lot of information.

While information systems managers across the home center segment share that view, they don't agree on the role information technology should play in delivering such customer service. On page 80, technology proponents and skeptics have their say.
There are two history making software launches this year.

(Ours is the one without the $200 million ad budget, the British rock band and the 70 million potential users.)

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It's the personal touch that counts

Home centers today rely primarily on salespeople, not technology, as conduits for value-added information. By and large, that approach has worked. The Home Depot's orange-aproned sales associates played a major role in helping the company earn Fortune magazine's Most Admired Retailer award this year.

Count The Home Depot's CIO Ron Griffin among those who doubt whether the expense of service-oriented systems will translate into improved service levels or increased business.

"Retail is detail," he says. "You differentiate yourself through quality of execution."

The Home Depot has historically eschewed glitzy customer service applications, such as kiosks, in favor of what Griffin calls invisible applications. These include inventory management and labor scheduling systems.

IS operations are humming behind the scenes in The Home Depot's 386 stores in 30 states. The big stores, or boxes, as smaller store operators refer to them, typically cover about 100,000 sq. ft. and stock nearly 60,000 different products. For IS, the focus is on tracking those products.

Griffin thinks home centers haven't taken inventory management to the limit. He says The Home Depot's stock turnover rates are very high compared with those of competitors in the industry. But he says there is room for improvement in areas such as receiving and perpetual systems.

Competitive advantage is ultimately decided by customers," Griffin says. "And what customers value most right now is "retailers who respect their time and save them money," he says.

"We're not going to be an IBM," he says. "We're not going to be a Microsoft."

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Forget restructuring. In his new book, General Motors' IS chief says new technology-based ways of shared decision-making will make organizations really hum.

By Joseph Maglitta

S

till doubt that the old hierarchical, adversarial, gut-driven way of making decisions is a one-lane highway to corporate and professional hell? Then listen to this woeful tale told by General Motor Corp. information systems veteran Vincent Barabba.

In 1978, internal politics and misread customer research killed a GM minivan prototype. (Astoundingly, Ford Motor Co. also made the same mistake.) Too bad, because six years later Chrysler Corp. introduced the hot-selling Dodge Caravan. This botched decision cost GM and Ford billions in sales.

That's the most dramatic — but hardly the only — such example in Barabba's new book, Meeting of the Minds (Harvard Business School Publishing, $27.95, (800) 545-7685), which arrives in bookstores today. The moral: Companies must tune all ears to the market's voice, commit to a common purpose and develop processes and software tools that promote systematic knowledge-gathering and decision-making. Those that fail to do that, he warns, face certain stagnation — or worse.

Computerworld recently spoke with Barabba, a 30-year IS and marketing executive and general manager of GM's Strategic Decision Center in Warren, Mich.

CW: What's the payoff idea for IS managers and professionals in all this?

Barabba: Your job is not just the [information technology] job. Ask, "How does what I do fit into the broader picture in the enterprise?" If you look at things that way, you can ask yourself a lot of questions about how to do your job a lot better.

CW: How does your parallel approach to making decisions differ from old, serial ways?

Barabba: The simultaneous approach says ... even though the concept implementers aren't doing anything in the beginning, they're part of the dialogue with concept generators. They can start thinking about things and give feedback, saying, "That's going to be really hard to make" or "It's not going to last as long." (All) are interacting with the voice of the market. Out of that you get a shared vision. The obvious value is in the time saved. It's also in the richness of the dialogue.

CW: Can you give an IS example?

Barabba: In the systems group, the guys who write code say, "Give me the specs." You say, "I'm not quite sure that I got my idea right yet, but I want you to start thinking about how to do it." They say, "I'm not going to start anything 'til you tell me what the outcome is supposed to look like."

They may have ideas in implementation that would make the idea even better. But if they won't start 'til I finish my specs, we lose a lot of capability. The ability of the downstream group to be flexible, to live with ambiguity, is key.

CW: You also exhort managers to look outside their "silos" for solutions to problems...

Barabba: You come to me and say, "I've got a systems problem." What am I going to do? I'm going to give you a systems solution. But maybe it wasn't a systems problem. Maybe it was a process problem. Maybe it was an external business problem. Maybe it was a customer problem. You've also got to make sure that your customers get out of the silo.

What if I said, "What makes you think it's a systems problem? Let's poke at that a bit." We would make sure that we agreed what the problem is, that we understand it very, very well. We would look at alternative solutions — including that it's not a systems problem.

We can then say all, or any one, of these alternatives are pretty good. Then we ask if we can come up with something even better by combining the value in each of them. In our experience, you always do.

CW: Will adopting this corporate decision style benefit me if I'm a database manager, for example?

Barabba: Definitely. What's the biggest problem right now for people who want to create a data warehouse? Getting everyone who owns the data to agree on the definitions. You go to them and say, "You're going to have to change the number of digits you have in your product description." The data owners say, "You know how much that's going to cost us?"

If you get that kind of mind-set, the likelihood of creating a cross-enterprise data warehouse is very low. But if we have a common process, we will go through the same process every time and use the same data set.

CW: But as a database manager, it's unlikely I'd have the clout to force this process standardization.

Barabba: If your boss was the [chief information officer], I'd go find him and say, "We really ought to go to work on this kind of stuff." Maybe even the CIO can't do it. But you ask, "If we went at it together, who in the company would work on a team to cause this to happen?" Maybe you've got to get a counterpart in some other function and say, "Let's go talk to the boss."

CW: Does this kind of shared decision-making require any kinds of new systems or technology?

Barabba: There's more technological capability out there than we're using. A lot of the new stuff is going to be in groupware. As we create objects, the infrastructure will get faster and the applications thinner.

CW: Does this relate to re-engineering?

Barabba: Re-engineering often results in restructuring. Everybody is going to worry about who they're going to report to next. It can get really ... demoralizing.

Changing the decision-making process is a form of re-engineering. When you get the enterprise process model in place, it really doesn't matter who you report to. If you want to change the culture, go right to the decision process.

Maglitta is Computerworld's senior editor, corporate strategies.
Kevin invented automatic 16/32-bit thinking.

Bob is an architect of IBM Open Class.

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IT Services '95 Conference & Showcase. Washington, Nov. 15-17. — Theme: Professional Service in Multivendor Environments. Topics include: covering services issues, outsourcing, systems and network integration, consulting and re-engineering. Fees: two-day conference, $775 (government, $390); one-day, $450 (government, $290). Contact: Creative Expos and Conferences, Inc., Walpole, Mass. (508) 660-7089.


Business/Buyer Recovery. Atlanta, Nov. 29-30. — Topics include: preparing for business recovery, the plan itself, dealing with the unexpected, recovering PC LANs, dealing with employee stress and ensuring a successful aftermath. Contact: Lynn Ganin, LOMA, Atlanta, Ga. (770) 964-6459.


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Workflow software automates and tracks the flow of documents and work processes through a company. The focus is on how work normally moves through an organization — the process — instead of on the specific information. There is a consensus today that you can break workflow products down into four groupings:

**Production workflow:**
Deals with transaction-oriented, high-value, repetitive processes such as insurance claims or accounts payable. Representative vendors include IBM, FileNet Corp., Wang Laboratories, Inc., BancTec, Inc. (formerly Recognition International), ViewStar Corp., Unisys Corp., AT&T Global Information Solutions, Staffware Corp., Xsoft and IA Corp. Average 1994 price: $1,050/seat*.

**Collaborative workflow:**

**Administrative workflow:**
Deals with low-value processes generally connected to routine office work such as travel expense reporting, budgeting and purchase approvals. Essentially electronic-mail forms. Representative vendors include Reach Software Corp., Delrina Corp., WordPerfect, Microsoft Corp., Jetform Corp. and Banyan Systems, Inc. Average 1994 price: $113/seat*.

**Ad hoc workflow:**
Deals with low-value processes generally connected to routine office work such as FTI routing, review and approval. Lots of ad hoc products are E-mail-based and workflow software is beginning to be offered as a feature function in messaging products. Representative vendors include Lotus Development Corp., Keyfile, Microsoft and WordPerfect. Average 1994 price: $180/seat*.

*Pricing for stand-alone workflow software products comes from BIS Strategic Decisions

BY AMY MALLON, LAURA HUNT AND LORI DIX

What questions must potential buyers ask workflow vendors?

- What are your plans for cross-platform support?
- How can your workflow product be integrated with groupware?
  — Connie Moore, director of workflow, document and imaging strategies, BIS Strategic Decisions, Norwell, Mass.
- Do you support multiple servers?
- Do you have a process mapping interface that graphically illustrates the workflow process?
- Do you use an open database repository to store all rules, routing instructions and workflow definitions? By "open database" I mean industry-accepted technologies such as databases from Oracle Corp., Sybase, Inc. or Informix Software, Inc.
- Do you have the ability to capture and report on runtime statistics such as when every task begins, how much time elapses between tasks, what the workload is for every individual in the work process and what the throughput and transaction volume is? I want to use the information about how the workflow is being executed to modify and enhance operations and processes.
  — Thomas M. Koulopoulos, president, Delphi Consulting Group, Inc., Boston
- How do I get my people to use workflow?
- How can I keep my processes growing and up to date without a lot of redevelopment?
  — Ronni Marshak, senior analyst, Patricia Seybold Group, Boston

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October 30, 1995
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What does the future hold for workflow?

There is an emerging market for workflow as middleware embedded in all kinds of computer systems. In the future, users will buy workflow as part of a bigger suite of software, and they will look at the overall software package rather than workflow by itself. It's happening right now; application software companies such as SAP America, Inc. and PeopleSoft, Inc. are putting workflow tools into their product offerings. Some of the document management products are workflow-enabled now.

Workflow is getting caught up with business process re-engineering, and one of the things that will be happening is business process re-engineering tools will be more closely integrated with workflow.

— Connie Moore

It's absolutely clear that workflow will be embedded as part of an overall business operating system within five years. It's beginning to happen. Microsoft is working with Keyfile to incorporate the Keyfile engine with its Exchange product. Microsoft is also working with Wang, Novell, Inc. is working with FileNet on an upcoming product suite called Ensemble, which incorporates some very basic FileNet workflow technology.

Also, as desktops become more and more object-oriented, some of these objects will take on a knowledge-based component — we call it workflow. The general functionality of taking rules and handling them with an information object, I think, is absolutely a trend. We'll see it on the desktop in about five years.

On the information systems skills side, workflow will demand people who have a greater understanding and appreciation for object orientation and object-oriented standards such as CORBA (the Object Management Group's Common Object Request Broker Architecture) and OpenDoc. A lot of the more advanced workflow tools are heavily object-oriented.

IS will also need to know business analysis. IS people will have to go and work with the end-user organizations directly. These analysts won't just gather requirements, but they will help the end-user organization better understand the process and start making some serious changes to the process if needed.

— Thomas M. Koulopoulos

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Babson College
Wellesley, Mass.
Uses workflow for admissions, inquiry calls, transferring credit evaluations and purchasing and reimbursements. For example, when someone requests a purchase order, it gets processed through the purchasing system and either gets forwarded for approval or sent to a purchasing department processor. That person either accepts the order, forwards it for change or rejects it. The Action workflow engine tracks that activity.

BRETT WALLIS
Lead systems analyst
Integon Corp.
Nonstandard automobile insurance carrier
Winston-Salem, N.C.
Uses workflow for claims processing. FileNet software follows the claim from when it is received through to the claims adjuster. Also for controlling digitized mail through the company, with client software generating some electronic documents that are then routed throughout the company.

FRANK MANCI
Document imaging coordinator
Colonial Savings
Fort Worth, Texas
Uses ViewStar workflow product to manage and track the mortgage loan process. Colonial scans 40,000 loan pages a day.

WHAT IMPROVEMENTS WOULD YOU LIKE TO SEE IN WORKFLOW SOFTWARE?

WALLIS: I would like the "superuser" to be able to control workflow. We would like the user to be able to control workflow. We would like the user interface to be more intuitive, and to run much faster. Some of these programs are very slow and don't perform as well as we would like them to.

BOULET: Don't automate existing manual workflow, re-engineer the process first and then apply the workflow technology.

MANCI: Beware of the cost. Workflow is deceptive; it's more expensive than you think. You are going to have to invest in the database engine. For a truly comprehensive workflow-enabled system, you are going to have to buy seats for every user, which can be very expensive.

Don't underestimate the complexity with software interaction. Without a database dictionary and fairly rigorous control of nomenclature, you are going to get into trouble.

Lastly, you've got to get your IS people to think in very different ways. Users grasp this whole process very easily because it is all process-based, but it is very difficult for programmers who have grown up in a Cobol or AS/400 environment.

WHAT TIPS DO YOU HAVE FOR YOUR COLLEAGUES?

MANCI: If you've got a new vendor or a new product, make sure you see its product in a similar environment handling that level of production. We said, "We'll need to do 40,000 pages a day." It's absolutely clear that workflow will be a part of the overall software package rather than workflow by itself. It's happening right now; some of the document management products are workflow-enabled now.

We'll see it on the desktop in about five years.

On the information systems skills side, workflow will demand people who have a greater understanding and appreciation for object orientation and object-oriented standards such as CORBA (the Object Management Group's Common Object Request Broker Architecture) and OpenDoc. A lot of the more advanced workflow tools are heavily object-oriented.

IS will also need to know business analysis. IS people will have to go and work with the end-user organizations directly. These analysts won't just gather requirements, but they will help the end-user organization better understand the process and start making some serious changes to the process if needed.

— Thomas M. Koulopoulos

RESOURCES

ON-LINE

http://www_is.cs.utwente.nl:8080/
Listing of who's who in workflow re-engineering.
A groupware is set up to answer questions about workflow re-engineering.

http://www_is.cs.utwente.nl:8080/whoswho
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11:30 PM
Firm's working late on big project.
Network's humming along.

11:31 PM
Weird sounds from printer
interrupt your bliss.

11:32 PM
Realize you never learned those words
in fourth-year French.

11:33 PM
But you have IBM printers. You get IBM service.

11:59 PM
They translate over the phone. Printer's saying,
"Refresh my memory."

12:07 AM
Everything looks smart. Including you.
Thanks IBM.

Our printer specialists, master interpreters all, keep you
covered 24 hours a day, 365 days a year. Their reliability is
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Don Desjardins
Recruiting Manager/Information Technology
MCI Communications Corp.

“Just recently we hired 65 professionals from 510 responses generated by just one recruitment advertisement in Computerworld. With a qualified hit rate of 80%, Computerworld advertising generates enough responses to keep nine full-time recruiters busy.”

With some 40,000 employees worldwide and revenues totaling over $13 billion annually, MCI Communications Corp. has established itself as the nation’s second-largest long-distance provider and one of the world’s largest communications companies. The company’s recent alliance with British Telecom further enhances its position to supply a vast array of telecommunication products and services to the global community. To ensure MCI’s competitive edge in the communications marketplace both now and in the 21st Century, Recruiting Manager Don Desjardins advertises in Computerworld to recruit the best IS talent.

“The recent release of networkMCI BUSINESS and internetMCI are just two examples of our software engineers are continually developing and introducing. Building world-class systems and products requires world-class Information Systems talent. In the networkMCI Services and Engineering groups, our culture demands that we employ only the best. It’s this top talent we find and hire by advertising in Computerworld.

“In my mind, Computerworld is one of the best multi-platform, leading-edge information systems publications going. It covers every aspect of the IS world, and its readers are IS professionals with a variety of technical backgrounds. Since MCI’s information technology group develops systems and products on a wide range of platforms, from open systems to large mainframes to the Internet, and recruits for extremely diverse technical environments, Computerworld is a perfect advertising fit. It is the industry-specific publication that targets all the top talent in all the right environments.

“Having just completed a three-year migration of our entire systems engineering group from Arlington, Virginia — one thing is certain: Computerworld recruitment advertising was a key element in successfully identifying and hiring qualified IS developers for Colorado Springs. In point, during 1994 our recruiters hired 1,124 technical professionals into systems engineering without paying a single agency fee. As a result, our cost-per-hire falls well below the industry average, thanks largely to our Computerworld recruitment advertising.

“On a regular basis, our information technology group is in the market to hire a full range of professionals — from entry-level technical IS recruits to senior network, database, and systems architects. Since we’re highly selective, we look to our Computerworld recruitment advertisements to make all the right matches.

“The future is clear. To maintain MCI’s telecommunications leadership position well into the 21st Century, we will continue to rely on recruitment advertisements in Computerworld to enhance our visibility and recruit the hard-to-find, high-quality technical professionals crucial to developing products and systems for our global customers.”
Your career is knowledge.

Your knowledge is power.

Your power is your career.
By Alan Radding

These are good times to be an independent contractor.

"There are more jobs out there, and rates are going up," crow Bob Avalone, principal of MetaProSystems, Inc., a consulting firm in Medford, Mass.

The trends toward downsizing, outsourcing and virtual teams are opening doors for savvy independent contractors. But opportunity alone doesn't make life easy for these computer professionals. Contractors face constant challenges in marketing, pricing their services and keeping their skills current.

"For technical people, the hardest part is -- and always has been -- marketing," Avalone says. "It just doesn't come naturally."

Marketing encompasses more than simply selling your services. It includes handling customer relations, planning ahead and anticipating the skills and services your customers will want down the road.

Timing is critical. "It's feast or famine. The trick is to premarket yourself before your current job ends," says Henry Blake, a C++ programmer in Mesa, Ariz.

Successful contractors perform a balancing act, completing the work they have while putting out feelers for their next project. Many contractors say they can avoid the marketing problem by using temporary employment agencies, popularly known as body shops. These companies handle the initial client solicitation and perform billing and payment, taking a percentage of the contractor's fee for themselves (typically 20% to 25%). But this approach isn't foolproof.

"Now you're dependent on the body shop's ability to find work and negotiate fees," says Brian Camakener, an independent contractor in Newton, Mass., who has gotten about two-thirds of his work through agencies in the past.

In fact, most body shops don't sell the services of individual contractors. They ship a stack of resumes to the client, who picks the ones that seem the best fit and calls those candidates for interviews. "You still end up having to sell yourself," Camakener says. He advises contractors to have their own set of contacts.

The Independent Computer Consultants Association (ICCA) in St. Louis is one place to look for help. For example, local chapters provide a forum for networking among contractors in a given area. Recently, the ICCA opened a World Wide Web page (http://www.icca.org) that lists members and their specialties.

Name your price

Another tricky aspect of marketing is setting your rates. "The thing I found hardest is pricing," recalls Mark Radding, who took a full-time job as senior systems manager at Shareholder Services Group in Boston after seven years as an independent contractor.

Each job and client is different, Radding explains, and he found it impossible to maintain a standard price schedule. At times, he says, he was forced to take a job at a lower rate than it was worth just to stay busy. Ultimately, "you make more money as an independent contractor," Radding says, but the stability is missing.

Camenker says he's found clients like fixed-priced jobs. He estimates the hours involved, calculates a price based on a good hourly rate and adds in enough hours to cover contingencies. All that, and the client still gets the job done for less than if it did the job in-house, he says.

Keeping skills current is another challenge for contractors, especially when technology changes rapidly. "Invest a lot in books and how-to materials," says Jim McKinnis, who runs Jim Consulting in Redondo Beach, Calif. A contractor since 1982, McKinnis keeps tabs on emerging technologies through magazines before he invests in those that seem most promising. He identified Microsoft Corp.'s Visual FoxPro as his next hot technology, purchased the software, signed up for training and recently started his first Visual FoxPro project for a client.

The bottom line: Successful independent contractors think of their careers as businesses that must be managed, and they are the managers as well as the workers.

Radding is a freelance writer in Newton, Mass.
Florida

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For more information, call Lisa McGrath at 800-343-6474 x8201, in MA 508-879-0700.
T he addition of an object-oriented scripting language and new user interface design options to Lotus Development Corp.'s latest Notes release will give developers greater flexibility and creativity in designing Notes applications. But developers certified in Release 3.0 should expect to climb a significant learning curve.

Notes Release 4.0 will be out later this year or in January, according to analysts. The differences between Releases 4.0 and 3.30 will be far greater than those between Releases 3.0 and 3.30.

LotusScript, an object-oriented programming language that many analysts compare to Microsoft Corp.'s Visual Basic, is a significant development tool, being ported across Lotus' entire software suite.

Release 3.30 uses a macro language based on Lotus Forms and functions. Complex applications require developers to write in Notes application programming interfaces (API). "Instead of having a kludgy macro language, developers will have a much more powerful scripting language" with Release 4.0, says Matthew Cain, vice president of Workgroup Computing Strategies Services Inc., in Stamford, Conn. "The Notes APIs have been encapsulated into a series of objects, so instead of writing to the APIs, you can write to high-level objects.

Release 4.0 also will provide developers with a more diversified tool set and user interface options. Cain says. Agent-based technology, for instance, will let developers write applications that alert end users when information of particular interest to them is added to a specified database.

Notes Navigator will make it possible to give users graphical representations of information, such as sales by region. Prior Notes releases could present information only in text format. Encapsulated database calls will make it easier for developers to give users access to outside databases.

"In some programming environments, the user interface is self-defined, so the developer doesn't have any control over the interface," says Ken Lowrie, president of Cognac Consulting Group in Andover, Mass. With Notes Release 2.0, users had forms and views. Release 3.0 added tools such as button capability, pop-ups and the ability to do internal and external look-ups.

"It will make it more challenging to be a good Notes developer because choosing the right tools and the right interface for an application will be even more of an art than it is today," Lowrie says. "With Release 4.0, Notes becomes a richer environment, and with as many design challenges, the solution isn't to use all the tools but to use the right tools."

Lowrie compares using the programming environment of Release 4.0 to the design capabilities of desktop publishing.

"In the hands of a bad designer, desktop publishing tools still don't work well. The more tools you have, the greater sense of an aesthetic you need," he says.

Lotus Authorized Education Centers will offer several courses for certified Release 3.0 application developers, and a new Release 4.0 course, when Notes 4.0 is first delivered to customers, says Terri Purinton, marketing manager at Lotus Education in North Reading, Mass. She can't confirm exactly when Release 4.0 will be available.

A general Applications Development Seminar will show developers how to convert a Release 3.0 application to Release 4.0 and add Release 4.0 functionality. Purinton says. Other seminars will cover the fundamentals of programming syntax, object-oriented programming topics and advanced application development using LotusScript. A complete list of Release 4.0 classes will be available in December. Self-paced, computer-based coursework will also be available.

In the meantime, Notes consultants say application developers who aren't already familiar with LotusScript or Visual Basic should start familiarizing themselves with both environments. "If you are a Visual Basic programmer, you have a huge head start on LotusScript," Lowrie says.

"Notes 4.0 isn't going to change our jobs, but rather the tools we have to do the job," says Jack Rathmell, president of Collaborative Systems, Inc. in Cambridge, Mass.

Goff is a freelance writer in New York.
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<td>Unity</td>
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<td>VSAAM</td>
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<td>192,909</td>
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want to spend a week networking with 200,000 of your colleagues? If so, go to Comdex/Fall '95 in Las Vegas next month. “Big” is the word repeatedly used to describe the annual trade show, and big it is. With more than 1,000 product announcements and thousands more products on display, vendors will try to turn heads their way. And they will do everything imaginable to draw your attention. Vendors also will be fighting the inevitable temptation of the gambling tables for your attention. Computerworld asked attendees what motivated them to become part of the fanfare created by the biggest show in the industry. They offered the following comments:

MATTHEW REYNOLDS
Systems analyst
TRW, Inc.
Redondo Beach, Calif.
“I’m going for fact-finding. There are a couple of seminars that look really interesting. I’m going for informational purposes and to explore and report on new technologies for my company. I’m looking for anything to do with client/server, object-oriented programming and Microsoft Corp.’s Visual Basic programing. I’ll educate the staff on the current technology and different techniques that I pick up there.”

ALAN ALDWORTH
Vice president of operations and development
Tribune New Media/Education
Chicago
“We operate businesses in this industry. I think it’s important to go to the key trade show and walk the floors so we can be aware of everybody in the market and their products. It’s really curiosity and education. It’s good to get a sense once a year of what’s going on. I’m always interested to see what the total industry and marketplace consists of from year to year in terms of companies and products. It’s really an overview of all the players. I’ll watch the product demonstrations, but there are usually lines around the products that are available for testing. I don’t have the time or the patience. If I really want to try it, I can buy it and try it.”

NICK DUNCAN
President
GlobalData
Oklahoma City
“I’ve never been before, and I’m expecting a zoo. I’d like to see some specialized imaging shows. They are applicable to our core business. I’d also like to see the latest in mobile technologies. I don’t come from a technical background, so some of the high-end network stuff isn’t in my realm. I’d like to see if there is anything new from Watermark (Software, Inc.) or FileNet [Corp.], if they end up out there. I’ll be interested to hear what IBM is going to do with Lotus’ Notes. It will be my first time [to Comdex], and from what people tell me, it may be my last.”

DAVID VERGEYLE
President, Chief operating officer
John Ryan Co.
Minneapolis
“We go there to see what the vendors have available. We’re interested in seeing digital MPEG1 and digital MPEG2, display technology and flat-screen TVs. We’re even more interested in what they’re not showing but what they’re talking about and what we can expect will show up in the future. It helps us understand which competitors might be coming to market and what products might be coming out in the future that might obsolete what we are doing today. Going to the speakers really gets to the issue of what new technology they’re thinking about but not showing. We usually come with three or four people and divide the show up. We get together in the evenings to exchange information and decide where we should focus.”

JOHN WISNIEWSKI
Manager of advanced technologies
Wm. Wrigley Jr. Co.
Chicago
“First, I go to Comdex to learn about emerging or advanced technologies. Second, I look at the show as a forum in which I can network with people in the industry with similar technology infrastructures. Third, I go to build better relationships with vendors. I do two things after Comdex: I write a synopsis of what I call the highlights of the sessions, and I put all the information that I gather into folders. I pass it around to my professional peers [in information systems].”

JAN EKONOMY
Director of new business development
NERS Software and Services
Nashua, N.H.
“I can conduct the amount of business at one Comdex show that to do outside would take up to two or three weeks traveling around the country. I spend very little time actually going up and down every single aisle. I don’t go to hear speakers or to hear about the big attractions. I go to conduct business and network. I think the only drawbacks are a matter of logistics. The most challenging part of the whole show is just getting where you need to be in a timely manner. After Comdex, we solidify partnerships and continue to nurture contacts until eventually it culminates into some business that makes sense for both parties.”

ANDREW LICKLY
Third-party product manager
FTP Software, Inc.
North Andover, Mass.
“I’m going because it’s the place where people in the industry meet, and it’s the one opportunity to get everybody in one spot. You can track them down and talk to them [in person]. There is nothing like putting a face to a voice and a name. Comdex is a good place to meet with people to talk about technologies, standards and industry-based topics. I think we’re going to be bludgeoned over the head with Windows 95 products, services and add-ons. I have enormous expectations because Comdex keeps getting bigger. Every year, I try to prepare myself for how big the show is, and still it always surprises me. It is getting to the point where five days of Comdex aren’t enough.”

— Malloy in Computerworld’s assistant researcher.
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Computerworld
OCTOBER 30, 1995

Editorial Index

Companies in this issue
Page number refers to page on which story begins
The investing public has a voracious appetite for Internet-related technology, which comprises 37 Internet-related companies. It is a new options index developed in conjunction with the Internet Index magazine.

The Internet Index is one of two broad technology indexes: the Morgan Stanley High-Tech/25 Index (MSH) and the AMEX Computer and Technology Index (CXI).

For the Internet Index, the AMEX "looked for companies with Internet-related technology that were either hot right now or with technology that is expected to shape the future with Internet-related technology" that were either hot right now or with technology that is expected to shape the future with Internet-related technology. It includes a collection of young, hip start-up companies.

"The Internet Index is an outgrowth of the current market passion for all things Internet," said Dan Noonan, managing partner of public relations at the AMEX. The Internet Index includes Internet service providers, commercial online service companies, Internet tool companies, providers of videoconferencing and interactive television and networking companies (see chart).

The Internet Index isn’t a mutual fund that investors hope will only increase in value. It is an options index on which investors can speculate. If investors think this segment of the market will do well, they can buy contracts accordingly. If investors think this segment is overvalued and could tumble, they can buy contracts for that outcome.

Noonan said it will be interesting to see who invests in the Internet Index. Options investors are traditionally older and conservative, he said, while the Internet's image is a collection of young, hip start-up companies.

"The Internet Index is an...outgrowth of the current market passion for all things Internet," said Harley Unger, a market analyst at Jupiter Communications, Inc. in New York. "Even for those who don’t play the market, it happens to be a great barometer of where our information-based economy is heading."

— Stewart Deck
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UltraSPARC
CONTINUED FROM PAGE 1
will be willing to jump to the new
putting technology at Du Pont Co. in Wilmington, Del.
The UltraSPARC boxes also bring Sun customers to a fish-
or-cut-bait moment. They must
move to Solaris 2.5—a new ver-
sion of Sun’s Unix operating
system that will be introduced this week — to run the Ultra-
SPARC systems. “There’s going to be strong pressure on [inde-
pendent software vendors] and users to finally bite the bullet at
Solaris,” said Gary Weiss, vice president
(streaming) of Sun’s Unix operating sys-
tem at Gartner Group, Inc.
The product rollout will sharpen Sun’s technical edge
after three years of trailing the
RISC chip performance of Unix
rivals Hewlett-Packard Co. and
Digital Equipment Corp.
Sun’s last major overhaul of
its product line was in 1989.
For the UltraSPARC line, Sun
reworked its entire workstation
design, wrapping it around new
processors and rewiring it with fast configurations to handle
multimedia and high-speed net-
work. Analysts expect Sun to
cut prices for its older Super-
SPARC workstations and add
high-end multiprocessor desk-
tops and UltraSPARC servers
next year.
Performance boost
The machines have garnered praise from some beta sites, which reported performance
boosts of two to seven times that of older Sun workstations.
“We had two to four times
improvement in performance on
our imaging application,” said
Lex Hays, a design engineer at Eastman Kodak Co.’s advanced
development product group in
Rochester, N.Y.
First to roll out will be powerfull
midrange workstations (see story at right). Solaris 2.5 for Ul-
traSPARC will be announced at the same time, as will 64-bit
compilers that let users’ 32-bit programs take advantage of the
64-bit chip’s speed.
The jump from older systems running the SunOS operating
system could cause some long-
time users to balk, however.
Many customers had waited for
software vendors to port pack-
aged applications to Solaris 2.x. Today, some 5,700 of the 10,000
plus Sun-compatible applica-
tions run on Solaris 2.x.
But many users haven’t yet
adapted custom applications to
Solaris 2.x. “The problem is the
homegrown applications that
are running,” said Ahmad Stae-
deh, a software engineering
supervisor at Space Systems/Lor-
al Corp. in Palo Alto, Calif.
Still, most hardware
users should reward loyal users, Pen-
as said. “If their hardware
work得好, with Sun’s overwhelming
strength has been its software,”
he said. “If their hardware
work together without un-
expected behaviour, they will be a for-
midable force in the industry.”

W MS windows scale up, too. See
page 45.

Fusion meets need for speed
eta-test sites that have
tried Sun’s Fusion
workstations say they
run 32-bit applications much
faster. This includes even
those that aren’t recompiled for
the new 64-bit hardware, users said last week.
“Our application ran four
times faster than what we
would otherwise run on a 50-
MHz MIIIP/ST at 10,” said
Peter Lombaard, a staff scien-
tist at Los Alamos National
Laboratory in New Mexico.
The laboratory also used
SunPro 4.0 compilers for Sol-
aris 2.5 “that take full advan-
tage of the 64-bit architecture,”
he said.
The first crop of 64-bit workstations will use 143-
and 167-MHz 64-bit Ultra-
SPARC chips, said Andrew
Felt, director of workstation
research at Dataquest, Inc.
OcTOBER 30, 1995

George Hsieh, a consultant to
the field support organization at
Price Waterhouse, specific-
ally sought help managing key
client/server applications. Moni-
toring faults is a first step, but
“I would love to monitor perfor-
mane so we can meet service-
level agreements with clients,”
he said.
Many discussions last week addressed cost factors.
At MCI, the rapid spread of
networks is compelling Sun
and other vendors to demand consistent vendor
pricing. He said he resents “tax-
ations” per number of devices or
users and prefers a way to pay
for overall functionality.
One horror story making the rounds illustrated the costly
mistake of focusing on a man-
agement platform instead of the
total bundle of management components.
A retail organization spent six months evaluating a net-
work management platform, ul-
timately choosing a popular
Unix configuration at a cost of
$800,000 for two thousand servers
with consoles. However, the
networks were distributed for
3,000 managed sites costs 10
times the platform price.
Administrators also be-
moaned their inability to hold on to
that most precious re-
sources: personnel.
“Finding technology is easy. Finding money is hard. But find-
ning, training and keeping expe-
renced people is hardest,” said
Randy Smith, manager of
project manager at United Par-
cel Service, Inc.

Reality check
CONTINUED FROM PAGE 1
“Network and systems man-
age is secondary to getting the
business done,” said Tim To-
karsky, vice president of dis-
tributed systems management
at Merrill Lynch & Co. in New
York. “I want a selection of point
products that we can put in, document-
ed and free application pro-
gramming interfaces so we can build our own solution.”
One hassles with “man-
agement-impaired” products and
vendors brought back
Wedge Greene, senior data ser-
ces engineer at MCI Communica-
tions Corp. in Richardson,
Texas, to this year’s conference.

With support for Micro-
soft Corp.’s Windows
NT high on the list of
many System View
assured attendees at the Enter-
prise Management Summit 95
conference last week that they
will indeed deliver for NT — as
well as for other software plat-
forms.
IBM, for example, is porting
the 32-bit SystemView for OS/2
to Windows NT, said Don Halle,
general manager of IBM’s net-
working software division.
The OS/2 version of System-
View is in beta testing now and is
scheduled for release at
Comdex/Fall ’95 next month.
IBM will also provide a Win-
.dows NT-based client console
that can access a server run-
ning SystemView for AIX. IBM
will soon support Sun Micro-
systems, Inc. platforms next
year, Halle said.
Overall, network and sys-
tems managers were looking for
cleaner, simpler systems for
monitoring and controlling as they
try to delegate control of dis-
tributed environments to more
staff and to remote sites.
The leading vendors — Hew-
ett-Packard Co., IBM and Sun-
Soft, Inc. — have been persist-
ing their Unix base and
watching to see if Windows NT
succeeds, said Charlie Rob-
bins, director of communica-
tions research at Aberdeen
Group, Inc. in Boston.
“Anyone not offering an NT
platform in the next year will be in
trouble,” he said.
SunSoft will ship a version of
its Solstice Enterprise Manag-
er for HP platforms to develop-
ment partners, mostly tele-
communications providers,
in two communications
providers, in two
months.
Simplicity takes longer,
however. A prototype Windows 95
and Windows NT client now
in the lab will let operators ac-
cess a Solaris-based manage-
ment server, but probably not
until 1997, said Walt O’Mal-
ey, senior manager for enter-
prise management products
at SunSoft.
For their part, HP officials
said that once-separate Win-
dows and Unix product groups
at HP now must function as a
single product team to work
with developers and support
users.
Under way are OpenView
versions for Windows 95 in
workgroups and Windows NT
for mainframe networks.
Windows NT-based plat-
forms also are available now
from Digital Equipment Corp.
and will be available next quar-
ter from Cabletron Systems, Inc.
—Patrick Dryden
The Back Page

Sooner better than later on data integrity

Charles Babcock

When you do it up front for your transactional systems, you can invest more time and money later in extracting information from them. If you don't do it up front, you'll be forced to do it on the back end.

Data modelers and database administrators are being coached to prevent contention points from turning into poor data administration. "We're shouldering that responsibility to try to integrate the data for the benefit of the whole company," he says.

***

Moving to Microsoft's Windows NT instead of Windows 95, as was advocated here Oct. 9, remains a hot topic. Kevin War- nock, CEO of Document Automation Systems in San Francisco, adds the following comments:

"One point I would like to make about your Oct. 9 column is that there is no free support for NT. With Win 95, one gets 90 days of free support. For a company that is regularly buying Win 95, the MIS people will be able to always call for support, since at least one 90-day period is likely to be running. I run NT, and love it. But if I run into something I can't solve myself, I will have to pay $150 per event to get it fixed. This is roughly what NT costs! In spite of all this, I still think all companies should switch to NT and go directly to NT!"

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A new breed of chip, the media processor, is about to emerge. It was designed to move sound, video, graphics, modem and phone communications quickly over an Ethernet. Theoretically, inexpensive media processors soon will move gigabits-per-second of data through broadband pipelines, making conceivable an effort by an Intel PC processor look like "sipping through a straw," says John Moussouris, CEO of MicroUnity Engineering Systems, Inc., a chip producer in Sunnyvale, Calif.

Babcock is Computerworld's technical editor. His Internet address is charles_babcock@cw.com.

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Stealing Intel's thunder

Seems like vendors just can't keep their mouths shut when it comes to Intel's Pentium Pro chip. While the chip maker itself has been coy about revealing much detail about the Pentium Pro, some of its major cus- tomers have been eagerly spilling the beans for several weeks now. The dizzying game of one-upmanship reached a crescendo last week, with some vendors finally just tossing their useless nondisclosure agreements out the window and sending in news releases about their planned Pentium Pro products. Intel is going to formally announce the chip this week, like a footnote to the whole affair.

Rolling toward NT

Intel next week plans to roll out a version of its LAN- desk desktop management tools that broadens ad- ministration beyond Novell, Inc.'s NetWare to Micro- soft Corp.'s Windows NT workgroups. Managers will be able to manage Windows NT servers, distribute software and remotely control, inventory and diagnose PCs from a Windows NT console. Interoperabil- ity with Microsoft's Systems Management Server (SMS) fills in server control missing from the SMS, a source said last week.

oops. we give! we give!

The Marketry, a Seattle-based marketing firm we told you about in this column last week, has decided to stop selling lists of electronic-mail addresses culled from Internet newsgroups. A torrent of red hot flame mail forced the company to stop selling the ad- dresses of Internet users after less than two weeks on the market, a Marketry spokesman confirmed. "We decided we don't want to be a pioneer in this area," he said. He declined to say just how many angry E- mail the company and its Internet access provider received when word got out.

Now we know why reporters hate to give out their E-mail addresses to the general public relations press....

The 5th Wave of Rich Tennant

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Calling all champions

IS departments looking to install imaging systems should forget about an exhaustive product compar- ison. The first thing you have to do is get a Champion, according to speakers and attendees at last week's Imaging Expo in New York. The Champion, usually someone in a high-level business management position, is needed to defend the costs and benefits of the imaging system against attacks from other depart- ments in the company.

Say it ain't so, Jim

Lotus is giving Jim Manzi a send-off on the company's Lotus World Web page in the Cambridge, Mass., company's classic, quirky style. The page, dubbed "Jim, you are a visionary," includes baby pictures of Manzi and a hotlinked photo collage of Manzi's tenure at Lo- tus. Each section of the collage is linked to a retro- spective piece on one event. If only Jim had $1 for ev- ery hit on the Web page now that he is out of a job. Then again, he probably does, thanks to IBM!

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They say, “We want client/server.”

You say, “What about the time and cost?”

They say, “We need client/server.”

You say, “What about systems management?”

We say, “What about the S/390 server?” Ah, everybody wins.

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