**Insurer cancels host policy**

**SystemPro network replaces mainframe/mini hodgepodge, slashing costs**

**BY CAROL HILDEBRAND**

COLUMBUS, Ohio — The Midland Mutual Life Insurance Co. is centering into a company gymnasium — putting the final accents on a personal computer-based network that has turned its old data center into a company gymnasium. In the process, the $1 billion company has flattened the organizational and sliced information systems costs by several million dollars.

Gone is a conglomeration of an IBM 4381, two Hewlett-Packard Co. 3000 Model 70s, an IBM System/36 and a Digital Equipment Corp. VAX 6110. In its place is a PC network anchored by 22 Compaq Computer Corp. SystemPros that serve about 315 clients. The system, in place since July 1991, is now getting the finishing touches as the company sends its big iron to the dustbin.

The difficulty of supporting various software packages for each of the hardware platforms played a major role in the decision to downsize. The company converted data from the mainframe applications over to one standard, PC-based VAX insurance application for all its business groups, but it did not attempt to port the host-based software itself.

Jerry Whetnall, assistant vice president of corporate systems, said: "The majority of a dozen-plus users interviewed last week — along with another 256 surveyed by the CW Database Division — said they are no longer comfortable doing business with Wang. For VS faithfuls, including Curt Beaumont, the numbers told the story: hundreds of resumes sent out nationwide in 18 months, scores of job interviews and zero luck. That is how brutal the job market can be for IS executives with mostly mainframe experience.

"Because of my concentration on large mainframes, I became a dinosaur," said Beaumont, 47, who had to leave a 26-year IS career and a $95,000 salary for a $20,000 job as a cell-

ular telephone consultant in Framingham, Mass. Money problems led to the breakup of his marriage and a new self-image. "I've had to downsize myself — my ego, expectations and
dollars."

"Old-timers' wrestle with dinosaur image"

**Second in a two-part series on mainframe computing.**

**BY MITCH BETTS**

F or laid-off information systems executive Curt Beaumont, the numbers told the story: hundreds of resumes sent out nationwide in 18 months, scores of job interviews and zero luck. That is how brutal the job market can be for IS executives with mostly mainframe experience.

"Because of my concentration on large mainframes, I became a dinosaur," said Beaumont, 47, who had to leave a 26-year IS career and a $95,000 salary for a $20,000 job as a cellular telephone consultant in Framingham, Mass. "Money problems led to the breakup of his marriage and a new self-image. 'I've had to downsize myself — my ego, expectations and Continued on page 12

**Users doubt Wang’s comeback potential**

**BY KIM S. NASH**

LOWELL, Mass. — Although Wang Laboratories, Inc.'s Chapter 11 bankruptcy protection filing last week shields the money-losing minicomputer firm from hungry creditors, it also erects a wall between Wang and its customers.

The majority of a dozen-plus users interviewed last week — along with another 256 surveyed by the CW Database Division — said they are no longer comfortable doing business with Wang. For VS faithfuls, including the American Express Co., the Port of Seattle and W. R. Grace & Co., Wang’s $45.4 million operating loss for fiscal 1992 on sales of $1.9 billion and subsequent Chapter 11 filing came as no surprise. It largely served to reaffirm plans to vacate the VS or replace Wang service with that of independent third parties, they said.

"We have a great deal of sympathy for Wang. I offered my condolences to [Chairman] Rick Miller," said Marilyn Phillips, executive director at Haynes and Boone, a $60 million Dallas-based law firm that is downing seven VS models and 340 Wang

**HP aiming stations at office desktops**

**BY MARYFRAN JOHNSON**

CHELMSFORD, Mass. — While Hewlett-Packard Co.’s Unix workstations still play second fiddle to Sun Microsystems, Inc. in mainstream commercial accounts, HP’s workstation division here is hatching new strate-

gies to step out of Sun’s shadow.

An expected Sept. 15 announcement of more powerful new workstations based on HP’s 7100 “Thunderbird” Precision Architecture-RISC chip — which doubles the clock speed of the current chip to 100 MHz — should give the vendor an even more compelling price/performance display for commercial customers.

Even so, only an estimated 15% of HP’s $3.1 billion workstation revenue last year came from sales to business environments. The bulk of the firm’s revenue still comes from scientific and technical workplaces.

"The good news is that most of the commercial workstation opportunity is a green field opportunity," said Gary Eichhorn, general manager of HP’s workstation systems group. "We are seeing a lot more business, more activity, more bids and more long-term projects."

"Wanting it all Commercial users said flashy performance is only a fraction of the larger equation involved in buying workstations. Hardware reliability, long-term costs of ownership, choice of software applications and reputation for Continued on page 14

**INSIDE**


IBM confirms it will use the Mach 3 micro kernel instead of the NT kernel in the next generation of OS/2. Page 4.

Expecting an eight-way mainframe processor this year from IBM? Don’t hold your breath. Page 6.

CA, Novell seek to bring host systems management to networked PCs. Page 10.

IBM and Microsoft reveal battle plans at last week's Windows and OS/2 Conference in Boston. Hoping to increase its value to corporate accounts, Borland offers support initiatives and a priority hot line. User reaction is mixed as IBM announces that it will be late in delivering a mainframe upgrade. DEC announces a family of PCs that will offer upgradeability from 386DX to 486DX by swapping in daughter cards or CPUs. Intecom to announce that it has integrated a variety of features into its Integrated Business Exchange PBX. IBM and Sears team up to form a network outsourcing company called Advantis. Minicomputer users complain and HP listens: The vendor is expected to announce a shift in sales and support strategies to appease small to midsize customers. The Department of Energy and NASA select Sprint to boost bandwidth in three national research networks.

**EXECUTIVE BRIEFING**

Times are hard for IS professionals with mainframe backgrounds. Application downsizing has thrown many out of work and created the worst IS job market in 10 years, some recruiters say. The lucky ones are those who have sharpened skills in PCs and networking, where plenty of opportunity still exists. Page 1.

Wang scrambles to remake itself into a software/service company after filing for bankruptcy last week. Meanwhile, current VS minicomputer users are acting on contingency plans, with many set to move to IBM. Wang hopes its Office 2000 imaging-enabled office automation scheme will bring a smaller, leaner company back to life. Pages 1, 16, 17.

Howlett-Packard cranks up efforts to sell Unix workstations to commercial sites, which today make up only 15% of its workstation business. One example: HP will start pushing client workstations to Severs 860 server customers and the millions of LaserJet printer users. Page 1.

Many IS shops today share a common problem: Technology-cost estimates are missing their marks. A recent study of 115 organizations found that 63% of their projects went over budget. Tips for avoiding this fate include assigning the initial estimate to final developers, conducting feasibility studies and controlling user changes. Page 85.

IBM and Sears team up in hopes of becoming a powerhouse in the network outsourcing market. But the U.S.-oriented, Systems Network Architecture-centric venture may initially be at a disadvantage against global competitors. Page 10.

Microsoft and IBM were looking ahead at last week's Windows & OS/2 Conference. Microsoft is lining up troops to help push Windows NT into the market, and IBM is sketching out plans for OS/2's next generation, which will likely include the Mach 3 Unix kernel. Page 4.

Many user companies are trying to turn huge technology investments into cash by entering a hot new field: computerized distribution logistics. Companies spinning off for-profit distribution units include Roadway, Caterpillar, TNT Transport Group, Carolina Freight and Ryder Systems. Meanwhile, older IS spin-offs enjoy mixed success. Page 81.

A plan by CA and Novell to link up in a "technology sharing" alliance draws excited reactions from users. Initial product plans will tie CA's Unicenter management tools to Novell's NetWare operating system. Page 10. Don't look for a trend in LAN management. The field remains fragmented, with users focusing on tools designed to manage a particular type of LAN. Page 69.

IBM delays its eight-way mainframe, originally planned for delivery late this year, until next year. Customer responses range from ho-hum to "Help! I'm running out of horsepower." Page 6.

Imaging systems are making their mark in manufacturing firms, where they bring efficiencies in the handling of engineering drawings. Page 71.

Graphical user interfaces bring some excess baggage, such as the need for high-performance graphics gear. Page 53.

On site this week: The Midland Life Mutual Insurance Co. believes in simplicity, so it junked a tangle of different vendors' minicomputers and mainframes in favor of a Compaq SystemPro-based local-area network. Page 1. The migration to open systems can be a bumpy road, as Hughes Electronics Space and Communications Division can attest. Page 72. It's a federal government success story at the U.S. Navy's Human Resource Office, where a local-area network-based personnel system is being used as a model for other agencies. Page 61.

**The 5th Wave**

AND THIS IS BUD MELLONICK, WHO WRITES ALL OF OUR NATURAL LANGUAGE PROGRAMS.

GLORI FULTZ.
“These days, the first thing a software company needs is a good pair of ears. That’s what makes CA special. They listen. They care about what I have to say. I’m very happy with how they’ve improved our financial software solution...especially with the changes I recommended myself.”

Listening. It’s one of the most important things we do. And for 16 years, we’ve been doing just that with each of our clients. From the smallest of businesses to over 95% of the Fortune 500. We’re committed to doing whatever it takes to make them happy. And they keep telling us how.
SCOTT VALLEY, Calif. — Borland International, Inc. this week will launch a series of support programs as part of an initiative to increase its presence in corporate accounts.

The software vendor will begin offering support contracts, including options for a compact disc (CD) read-only memory-based technical support database, a priority hot line that provides fast access to senior technical support engineers and a support hotline service on CompuServe.

This week’s programs are expected to be the first in a series of marketing initiatives aimed at boosting Borland’s presence in corporate accounts and by new marketing alliances with systems integrators and by a series of complimentary technical sessions.

Among the programs to be launched are the following:

- The CD-ROM program, called Borland KnowledgeBase CD. It gives customers and government customers access to technical information on Borland products.

- Borland’s preferred CD information on its application products and another that supports its language products.

- The Borland Priority Hot Line, priced at $500 a year for its database and spreadsheet products and $750 a year for Borland C++, object-oriented programming language, gives customers toll-free phone access to a technical engineer. The Borland VIP CompuServe Bulletin Board (a $500 per year) allows users to access all Borland forums and a special message board, and it includes a guaranteed four-hour response time to questions.

- The Borland Premium Support plan, which includes a comprehensive package of toll-free support, the CompuServe Bulletin Board, and access to Borland KnowledgeBase CDs. The toll-free support and bulletin board include separate contacts for each of four Borland product groups: Borland C++, Windows for OS/2 Professional, and Quattro Pro and C+++. It is priced at $3,995 per year.

Borland to flesh out IS initiative

BY MARK HALPER

The company unveiled price reductions of 10% to 35% for its mail-order SunExpress products and began shipping the first in a series of multimedia, online training tools for first-time Sun users.

IBM, Microsoft reveal plans for next-generation systems

BY ROSEMARIE HAMILTON

BOSTON — IBM and Microsoft Corp. used the Windows & OS/2 conference here last week to reveal more of their battle plans for the desktop.

IBM, riding high on its claims of 1 million OS/2 2.0 shipments,

said work is under way for the next-generation OS/2 and that the company will likely proceed with the Mach 3 microkernel from Carnegie Mellon University instead of the Microsoft Windows New Technology (NT) kernel.

NT "is out of the question," while the Mach kernel is the "likely foundation," ... to move to an architecture of portability and much more object-oriented technology," said Fernando Sarrat, assistant general manager in charge of market development in the Personal Systems Group.

"This move will move them somewhat more toward the Unix camp and could give them a more portable operating system," said Bill Higgs, a vice president at Computer Intelligence/Inforcop in Santa Clara, Calif.

The micro-kernel architecture will allow IBM to build a common service layer on which the "OS/2 personality and AIX personality" could be built, Sarrat said.

Microsoft, meanwhile, said it is putting together an NT infrastructure that will help propel the 32-bit operating system into the market.

Dwayne Walker, the company’s director of Windows NT and networking products, said the up-front work could be "a longer-term experiment," meaning the lag between new software is shipped before users are hesitant to embrace it.

Microsoft will unveil details next month on partnerships, channel strategies and training plans, Walker said. For instance, Sequent Computer Systems, Inc. announced plans to soon announce its support of NT to run on its multiprocessor systems.

"They are putting in place the business strategy," he said, noting Microsoft has developed its own and competes with Rambus.

Sun cuts sales tags

BY MARYFRAN CONNORS

MOUNTAIN VIEW, Calif. — Sun Microsystems, Inc. was active last week on several fronts, rolling out announcements on price cuts, multimedia training tools and its own "right sizing" project with Oracle Corp.

The company unveiled price reductions of 10% to 35% for its mail-order SunExpress products and began shipping the first in a series of multimedia, online training tools for first-time Sun users.

Sun also highlighted its in-house "right sizing" project with Oracle. This joint development effort is part of the next generation of Oracle’s financial and manufacturing applications, which are said to cost less than 50 Sun manufacturing facilities worldwide by 1994.

Aimed at Microsoft, Walker’s response was: "As long as they can run Windows apps, they have our support."
LOOK WHO'S COOPERATING ON A COOPERATIVE-SERVER DATABASE

"Oracle's always been the leader in building database technology. One of the great things about Oracle's approach is that they're hiding the differences between all the machines out on the network running on various platforms."

Bill Gates
Chairman and CEO
Microsoft Corporation

"The fundamental problem with early client-server database management systems is that applications cannot access data on more than one server without a lot of extra programming. This programmatic approach to accessing data on multiple servers is in stark contrast to the totally automatic approach provided by ORACLE7."

Larry Ellison
President and CEO
Oracle Corporation

"ORACLE7's breakthrough in hiding technological complexity is analogous to the ease-of-use breakthroughs accomplished by the introduction of the Mac in 1984."

John Sculley
Chairman and CEO
Apple Computer, Inc.

"With HP systems and ORACLE7, our customers will have the desktop to high-end performance they need for a fraction of the cost of mainframe computing solutions."

John Young
President and CEO
Hewlett-Packard Company

The world's largest database company introduces a revolutionary new technology called a cooperative-server database. A cooperative-server database hides the complexity of computer networks by enabling applications to access data located on multiple computers just as if all the data were stored on a single computer. In this way, a cooperative-server database simplifies application building and improves decision making by making access to information easier...much easier.

ORACLE
Software that runs on all your computers.
IBM 8-way processor delayed

BY JOHANNA AMBROSO
CW STAFF

SOMERS, N.Y. — IBM will not deliver a mainframe upgrade in the fourth quarter as originally planned. IBM also will unveil the new processor sometime early next year.

Speculation varied about why the date slipped, with some observers pointing to possible technical problems and others saying that the decision had more to do with marketing. A company spokeswoman confirmed that the much-vaunted eight-processor model will not be announced until next year and said that the new processor is "not late. "We have not committed to customers either announcement dates or delivery dates of the eight-way." Customer reactions were mixed. Some said they were fast running out of patience, and power, would soon need to make a decision about what to do and might look at the IBM machines as alternatives. Others said the slipage would not affect them.

Doug Underhill, vice president at CSX Technology in Jacksonville, Fla., said the delay would have "no impact" on his shop. "There is an appeal to being able to pack more work loads into a single processor. But it wasn't something that I need right now. "

Observers cited different causes for the delay. Jim Cassell, an analyst at Dean Witter Reynolds in New York, suggested that the delay might be due to technical problems in getting the MVS operating system to run across eight processors as a single unit. "IBM engineers have told me that they've had difficulties getting MVS tuned for the eight-way," he said. "But Amhdal has said 'No way,' so I don't know who's speaking truth. "

Nevertheless, Steves said, he still expects IBM's new machine to be introduced in February and to be available by March.

Humana cuts back, plans IT spin-off

Humana, Inc. last week disclosed that it would trim its administrative staff by 400 — a move that will likely affect information systems operations, according to a company spokesman. The health-care firm will launch an information technology subsidiary Oct. 1 that will offer quality assurance, technology assessment and management of clinical information systems to the hospital industry. The mid-month retirement of Humana IS director Fred Pirman Jr. is unrelated to either the layoffs or the new unit. However, Pirman's office will remain vacant until the effect of both moves on internal IS can be determined.

Toshiba joins notebook price war

Next Monday, Toshiba America Information Systems, Inc. will attempt to shed its premium price image in the notebook computer market, according to sources close to the company. Toshiba plans to introduce three new systems, including an Intel Corp. 80386SX-based notebook with 2M bytes of random-access memory and a 60MB hard drive and two systems based on the 25-MHz 386SX. Street prices could start as low as $1,500.

Short takes

Last week, F. Grant Saviers, recent vice president of DEC's PC systems group, left the company to become chief technology officer at Adaptec, Inc., a Milpitas, Calif.-based vendor of Small Computer Systems Interface host adapters for PCs... Autodesk, Inc. divested itself of two companies that made up its Information Systems Division: American Information Exchange (Amix) and Xanadu Operating Co. Amix will continue its operations as an independent purveyor of digitally stored information; Xanadu, an on-line site to clinical systems to the hospital industry, will be shut down. "We were building a Tower of Babel," Whetnall said. "I wanted to get to a single platform." Whetnall added that although the company did take a financial hit when it had to buy out the leases on the big boxes, it made the money back within 18 months. "If I had stayed with the old system, my data processing expenses this year would have been about $6 million," he said. "With the downsizing, it's just under $2 million. You can cost-justify this stuff real easy." With the downsizing, the company was able to pack more work loads into a single processor. But it wasn't something that I need right now."

Insurer cancels host policy, chooses SystemPro network

CONTINUED FROM PAGE 1

In the past year, insurance companies have experienced both an increase in claims and a drop in new business, which has put a premium on reducing the costs of processing. According to a recent survey of chief information officers by the insurance industry's Information Systems/Technology Management Group, about 50% of respondents said that they were considering alternatives to their existing systems. The survey also showed that about 70% of respondents were looking for ways to reduce the amount of manual processing required.

The impetus for that reorganization came from the chairman of the board at the company, which had a total of about 150,000 policies last year and plans to grow its business by about 10% this year. Cheryl Currid, president of consultancy Currid & Co., pegged such high-level support as vital. "If you have top management that can make the leap of faith to say, 'Go ahead and try it,' you'll never get out of the starting gate," she said. Whetnall said a major problem with a centralized data center was that when one group had a special need or upgrade, the other units suffered as well. With the new setup, the servers are divided among each group; the auditor that handles standard business applications such as word processors or two servers that run the customized administration software for the insurance business that lets Whetnall try out any fixes or enhancements without having to use the actual production system.

He said the relatively low cost of PC servers enables him to easily afford the redundancy. Dividing his system this way gives Whetnall the flexibility to separately address different business needs, as well as add and subtract staff support and computing power as needed, he said.

The system runs Novell, Inc. NetWare v3.11 over an Ethernet network with a fiber-optic backbone and coaxial connections to the workstations. Whetnall said he is looking to convert to a complete fiber-optic network by next year.

The Midland's 18,000 insur- ance policies, scattered across the country, access the system via a wide-area network linked into CompuServe. "They just put your data into a bucket, send and get routed onto our set of servers," Whetnall said.
Grid convertible revs up pen market

Combination notebook/pen-based tablet may draw sales where other products failed

BY MICHAEL FITZGERALD CW STAFF

FREMONT, Calif. — Grid Systems Corp. will expand its pen computing line in the early fall with a hybrid product that it hopes will succeed where rival Momenta International, Inc. failed, sources said.

The Grid "convertible" will combine a pen-based tablet with a notebook computer, the sources said. Based on Intel Corp.'s low-power 20-MHz 80386SL chip, the device will feature two to three hours of battery life and a 120M-byte hard disk, as well as a back-lit screen. The product will also have two Personal Computer Memory Card International Association drives for flash-memory devices and is expected to be priced at $2,995, the sources said.

Momenta, which was the first company to produce a combined pen and notebook computer system, drew little interest, in part because its sleek machine uses a proprietary operating system and costs more than $5,000.

Surprisingly, the Grid machine is not expected to come with PenRight, Grid's operating environment. Instead, it will offer Go Corp.'s PenPoint or Microsoft Corp.'s Windows for Pen Computing software.

Sources described the system as between 2 in. and 2 1/2 in. thick, slightly thicker than the normal notebook. From above, a user would see what appears to be just a screen with a pen, but pressing two indentations, one on each side of the screen, tilts the screen up and locks it into place behind the keyboard.

"It's a no-compromises notebook that also comes with a pen," one source said.

Kenneth L. Dalaney, Grid's director of laptops/pen-based marketing, refused to comment on specifics but did say, "We will have a pentop product by the end of the year."

Sources close to Momenta, meanwhile, said the company has ceased operations. One source said Momenta has not declared bankruptcy but has fired all but one employee and is trying to sell its technology.

Last week, Momenta's phones were being answered by a Momenta-employed receptionist, but Angelo Pazzani, Momenta's spokesman, did not return repeated calls.

DEC to give PCs modular upgrades

BY MELINDA-CAROL BALLOU CW STAFF

MAYNARD, Mass. — Digital Equipment Corp. will announce a new family of personal computers that offer a modular upgrade path across the line.

Dubbed the DECpc LP family, the products can be upgraded from 386DX to 486DX to 486DX2 processors by swapping in daughtercards or CPUs. They range in price from $999 to $2,199.

"While other vendors also have a modular approach, DEC's plan is to offer a single product family, from the low to the high end, that will allow users to make upgrades by merely replacing the CPU daughtercard," said Steve Widen, an analyst at WorkGroup Technologies, Inc. in Hampton, N.H.

DEC will maintain seven worldwide integration centers with inventories of common parts. Users will have fast access to upgraded systems via daughtercards.

Definite draw

Some users praised DEC's pricing and the modularity of the new PCs. "The modularity of the systems would be a selling point for us. To be able to upgrade without trashing everything would be helpful," said John Limongelli, an analyst at Elliot Hospital in Manchester, N.H.

"It sounds as if this pricing brings them more in line with the competition," added Bill Lodge, project manager at Turner Corp., a non-DEC user in New York that recently downsized from IBM mainframes to Banyan Systems, Inc.'s Vines PC networks. "DEC has interesting products coming down the line with the Alpha chip and support of NT, but until now they've never had a serious presence in the PC market."

Others were skeptical, however, about DEC's strategy and its ability to win over non-DEC sites.

"DEC has improved their PC line, but when they pressed us to go with their PCs as a big DEC and big IBM account, we turned around and asked them why we should switch," said a user at a large banking firm who requested anonymity.

"Modular PCs are somewhat attractive, but users also become locked into a vendor's PC line because you can only buy the upgrade from them," added Peter Kantzar, an analyst at the Aberdeen Group, a market research firm in Boston.
PC multiprocessing on horizon if AST rollout is any indication

BY MICHAEL FITZGERALD
CWI STAFF

SANTA CRUZ, Calif. — When AST Research, Inc. showed off its latest server running The Santa Cruz Operation’s (SCO) multiprocessing Unix last week, the infant personal computer multiprocessing business took another step forward.

Analysts pointed to this as another indication that microprocessor-based server sales will soon be capable of truly replacing minicomputers and mainframes.

“PC multiprocessing is an indication that microprocessor-based servers will soon be capable of truly replacing minicomputers and mainframes,” said Leslie Fiering, an analyst at Gartner Group, Inc., in Stamford, Conn. “Users are looking at PC boxes which have horsepower, reliability, scalability and security, and it’s creating a tremendous demand in the marketplace for bringing mini and mainframe stuff down to this level.”

Fiering cited high availability and better system security features and diagnostics tools as important pieces of the large systems world missing on PC servers.

AST and the SCO marked the event as the first time the SCO’s MPX 2.0, a multiprocessing version of Unix, had run on a fully symmetric hardware. AST’s system was designed so that processing tasks are distributed evenly among the available CPUs. True symmetric multiprocessing (SMP) would give a 100% boost in performance for each new processor. AST acknowledged that this performance is not achieved by AST’s MPX 2.0 system security features and diagnostics tools.

The Manhattan SMP supports up to four Intel Corp. 50-MHz I486DX microprocessors and 2 GB of storage. Base price with one processor is $23,995. AST said it has 12 beta-test machines, mostly at software vendors, and will soon start a corporate beta-test program.

Intel gets involved

Among several recent moves for the multiprocessing market was one from Intel, which last week confirmed that it is developing an Advanced Programmable Interrupt Controller architecture that will replace its current 8259A chip. Commands from the microprocessor to the rest of the PC get transferred through the interrupt controller.

Intel said changes in software and the development of more powerful chips is driving the architecture’s development.

For end users in a stand-alone environment based on high-level processors such as the upcoming PS, performance gains will be anywhere from 5% on up, according to Jag Bolaria, an Intel engineer. Far more significant gains will be made in a multiprocessing, multitasking environment, where every switched task means that the interrupt controller gets called into play.

“We'd like the new operating systems, like OS/2, Windows NT and Unix, they're all multitasking, and there really is no interrupt controller for that,” Bolaria said.

He said Intel will release a version of a new Advanced Programmable Interrupt Controller next month, but he said it could change several times before it appears in products.

Intecom ties LAN to phone switch

BY JOANIE M. WEXLER
CWI STAFF

ALLEN, Texas — Former Wang Laboratories, Inc. subsidiary Intecom, Inc. has taken an innovative approach to survival in a long-saturated private branch exchange (PBX) market.

The vendor said it will announce today that it has integrated 10Base-T local-area networking, a Fiber Distributed Data Interface (FDDI) backbone, bridging, wireless hub capabilities and wide-area networking interfaces into its Integrated Business Exchange (IBX) PBX.

The goal is to turn the IBX telephone switch into an enterprise multimedia network backbone that can be managed collectively, said David C. Tucker, director of marketing. The enterprise voice/data/video network-in-a-box is managed by the Hewlett-Packard Co. OpenView product because “HP was the only vendor interested in ultimately managing traffic other than data,” Tucker explained.

Intecom’s InteLAN offering integrates a logical 100M bit/sec. FDDI backbone within the IBX and internally bridges the 10Base-T networks across it to boost performance, Tucker explained. The cost per port is $250, plus about another $100 per workstation for a 10Base-T adapter card. Users, then, pay a premium of approximately $250 a port for 10Base-T networking with the added FDDI backbone functionality.
The architects of software confront the same challenge as the architects of steel and glass: the constant of change. Changes in business. And changes in technology.

There is one software architecture designed to deal with the constant of change: Sybase. Sybase gives you the flexibility to create applications that integrate data sources of every kind—databases, multimedia, real-time sources, even mainframe applications—into a high performance client/server computing environment. The flexibility to modify those applications quickly as your business and computing environment changes. And the flexibility to run those applications on the hardware of your choice: PCs, workstations, minicomputers, mainframes.

This flexibility makes Sybase the most effective technology for building today's on-line enterprise. And gives you a unique ability to adapt to the needs of tomorrow.

Sybase. Client/server architecture for the on-line enterprise.

To find out more about our database, application development and connectivity products, and our multi-vendor consulting services, call 1-800-8-SYBASE.
IBM, Sears blend networking strengths

Joint outsourcing venture Advantis could cement IBM's position in the domestic services market

BY ELISABETH HORWITT and NELL MARGOLIS

SCHAUMBURG, Ill. — Can two less-than-successful value-added network players combine to make one dynamic network outsourcing company? That is what IBM is shooting for with its announcement last week of an agreement to align its network service with that of Sears, Roebuck and Co.

IBM Information Network (IIN) and Sears Technology Services, Inc. will combine to offer everything from network transport and electronic-mail services to designing, implementing and operating a customer's network.

Let's make a $1B deal

The IBM/Sears Advantis joint venture "will be a $1 billion company — and a profitable one" from Day 1, executives at both companies declared. Here's what else it will be:

- An amalgam of IBM's Networking Systems Services Division, including the IIN, internal telecommunications and Integrated Systems Solution Corp. (ISSC) network support as well as Sears' information systems subsidiary, Sears Technology Services Inc.
- Jointly owned by ISSC and Sears, with ISSC holding a majority stake.
- Outsourcing vendor to Sears, including Sears business groups such as Sears Financial Services Group, Inc.; and Dean Witter Financial Services Group, Inc.
- Network service provider to all current IIN and STS customers, with contracts from about 356 cities in 92 countries.
- Staffed by some 3,000 employees: all of STS' current 1,500 plus 1,500 more from the various IBM networking units.
- Market targets will include ISSC's stated target industry stakes.
- The following is a rundown of what is expected from Advantis:

Best of both worlds

IIN users, many of whom have no doubts about the advantages of working with Advantis. Blue Cross/Blue Shield, which evaluated Sears Communications before choosing IIN as its network provider last year, "hopes to take advantage of both firms' combined strengths," said the head of the company's network administrator.

Sears' nationwide network and 1,500-person staff of network experts will position IBM "much more strongly" both as a value-added network that connects companies to their suppliers and customers and as an outsourcer that can meld a customer's network operations into its own, said John Rogers, European director at consulting firm Legawest.

Schatt said that more than a third of the applications being used are Unix-based, and 13.1% of the international value-added network market last year, most of its business was here. Overseas customers still perceived the service as overpriced, said the Yankee Group.

CA to port management software to NetWare

BY MICHELE DOSTERT

NEW ORLEANS — Companies turning to distributed computing could eventually gain the same centralized control and automation of enterprise work procedures long afforded by the glass house if software under development at Computer Associates International, Inc. and Novell, Inc. comes to fruition.

Under a deal disclosed at CA's Systems Software Conference (SSC) here last week, CA will port its CA-Unicenter management software to NetWare servers. CA-Unicenter for NetWare will enable users to manage data, resources and business procedures across computing platforms distributed via networks.

By Thomas Hoffman contributed

From a central CA-Unicenter for NetWare console, for instance, an information systems manager could program, via CA/Novell's OS/2 Presentation Manager interface, specific populations of servers across the network to back them up at a given time.

A year away

CA-Unicenter for NetWare will be available in 12 to 15 months for Novell's NetWare v3.11, according to Kurt Seibert, vice president of strategic business alliances at CA. He said a version for the NetWare 4.0 operating system will appear "almost simultaneously."

"We're a Unicenter for MVS customer, so we think it's wonderful," said John Hager, director of network management at General Electric, one of Advantis' early customers.

"Our main interest right now is to centralize control [of the LANs], and what CA is doing now [with Unicenter for NetWare] will allow us to do that," Loveless said.

Officials at both vendor companies said there would be little coordination between the CA-Unicenter for NetWare and Novell's own NetWare Management System (NMS), designed that the CA/Novell product manages the business processes and data that run over the hardware/software network infrastructure, which is kept up and running by network management systems such as Novell's NMS.
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MAINFRAME METAMORPHOSIS

NEWS

Wrestling with dinosaur image

Claude Edgell

Programmer Welch took an AS/400 course after she was laid off in 1991 — and six months later, she had a new job.

By the numbers

<table>
<thead>
<tr>
<th>Year</th>
<th>Employed programmers (in thousands)</th>
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<tr>
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Downward spiral

The number of employed programmers in the U.S. dropped sharply in 1991.

- Pan Am Corp. in New York had an IS staff of 500 before it went bankrupt and ceased operations last December.
- According to the U.S. Bureau of Labor Statistics, the number of employed computer programmers fell by 48,000 last year because of the economic recession and corporate restructuring. It is not known how many of these programmers were in vendor or user organizations.
- Another clue is that the number of IBM and plug-compatible mainframe staff in the U.S. has declined 12 months down the road.

For every Tuesday night at The Knights of Columbus Hall in Ridgewood, N.J., a group of about 85 unemployed IS professionals meets to talk shop. The group consists of companies that are hiring. They also discuss discrimination.

"We talk about the kind of people that get hired, and they're definitely not people over 40," said John Sampson, meeting coordinator for the group, known as MIS Network Associates.

Older employees — those with mostly mainframe experience and higher salaries — tend to be the first laid off and the last hired, he said. "Discrimination based on age is pervasive," he said.

But other observers disagree. One IS career expert said there may be instances of age discrimination in the IS field, but it is not widespread because talent is what really matters to employers.

Nevertheless, the IS field is beginning to see its first layoffs arising from age discrimination. Earlier this year, 11 former IS employees of Eastman Kodak Co. claimed age discrimination in a legal dispute over their transfer to an outsourcing vendor.

In 1989, 24 laid-off workers of the Hartford, Conn., area — including several IS professionals — filed suit against Pratt & Whitney, charging age discrimination.

"I felt very strongly there was age discrimination there, just looking at the cross-section of people who were let go," said 47-year-old Frank Colangelo, who spent 23 years in IS at Pratt & Whitney and is a plaintiff.

The company said its layoffs were conducted in a fair and humane manner.
As far as performance is concerned, our new 7637 Model 20 DASD has you covered—with the latest 3.5" disk technology supported by the very first 3-year warranty in the industry. Combine that with our superior engineering and architecture, and you have the best 9336-compatible DASD on the market today.

We begin with the most advanced 3.5" 1 GB disk drives ever made. With features that include a super-fast 9.8 ms seek time, read-ahead cache, magnetoresistive head Nanoslider and 256KB segmented data buffer. Add to that, options like controller cache memory for faster throughput and dynamic sparing for maximum system uptime—both market firsts from IPL. All at a lower cost per MB than IBM's 9336 Model 20. And all fully compatible with IBM architecture and diagnostics.

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Wang shuffles execs
Attrition and restructuring at bankrupt Wang Laboratories, Inc., has already begun. Ken Oline, a 12-year Wang veteran, resigned late last week as Wang's head of Europe, Africa and Middle East operations but will stay on as an outside consultant. Joe Tucci, executive vice president of operations, will now oversee those offices out of his ed headquarters in Lowell, Mass.

Sematech to lose federal funds
Federal funding for the Sematech chip consortium will be phased out during the next five years, according to a report from the U.S. General Accounting Office. The announcement was made even though Sematech — with $100 million a year from the U.S. Department of Defense and a like amount from Middle East operations but will stay on as an outside consultant late last week as Wang's head of Europe, Africa and Middle East operations but will stay on as an outside consultant. Joe Tucci, executive vice president of operations, will now oversee those offices out of his ed headquarters in Lowell, Mass.

High-performance advances
The White House Office of Science and Technology Policy announced last week both the creation of the National Coordination Office for High Performance Computing and Communications and the appointment of Dr. Donald Linberg as its director. Linberg will remain director of the National Library of Medicine at the National Institutes of Health. The new office is to coordinate the administration's multiagency effort to build a 1G bit/sec. National Research and Education Network and TFLOPS/sec. supercomputers and to coordinate that effort with Congress and the public, the White House said.

NET adds frame relay
Network Equipment Technologies, Inc., last week added frame relay networking capabilities to its T1 and statistical multiplexers. Users will reportedly be able to initiate frame relay transmission at the desktop, ship it over low-speed links to the corporate backbone, then leverage high-speed T1 and T3 (45M bit/sec.) links to ship data to user destinations.

Bell Atlantic offers net integration
Bell Atlantic Corp., last week entered the network integration market with the formation of Bell Atlantic Network Integration. The business unit will provide planning and needs analysis, product integration and network implementation services through its existing network of 338 field service offices.

CA extends scheduler
In addition to its alliance with Novell, Inc. (see story page 10), Computer Associates International, Inc., last week unveiled plans for several new systems-related products. CA-7 for AS/400, an automated scheduling system for IBM's Application System/400 minicomputers, extends production control automation across multiprocessor environments, including IBM mainframes. It costs $15,000. CA-RSVIP is a $6,000 storage reporting facility for IBM MVS operating systems that utilizes VTAM and several system catalogs. CA-EXamine/PC is a personal computer-based auditing tool for identifying an organizational PC hardware and software inventory. Volume pricing varies from $8.50 to $22 with a minimum of 250 licensed PCs.

Short takes
As expected, Banyan Systems, Inc., announced that it plans to offer Open Systems Interconnect (OSI) support as a series of software options for Vines for The Santa Cruz Operation's (SCO) Unix [CW, Aug. 17]. ... The U.S. Department of Transportation's FAA has extended its service contract with Unisys Corp. for an additional five years. The $201 million pact calls for Unisys to provide information services, operations research and engineering support. ... Robert Fabish, founder and former president of Tivoli Systems, Inc., has left the company to develop and market computing services and software to help corporations make the migration to open systems.

HP to revamp customer service
Answers small-user complaints that support suffered after shift to VARs
BY MARK HALPER
HP is expected to heed their call by disclosing a shift in its sales and support program at the Interex users group meeting here at At issue is a change implemented by HP last December in which the vendor began funneling sales of less than $100,000 through resellers rather than the company with which they did business. Ironically, HP said the shift was intended to boost support to what was termed the "B" and "C" accounts. But, as HP's chief of sales for the Americas, Manuel Diaz, conceded last week, the best-laid plans of mice, men and computer vendors go oft astray. "This kind of transition takes longer than you think it will," Diaz said.
Diaz is expected to announce at the HP user conference a plan to form what he calls an integrated sales team that will combine resources from HP's direct-sales force, telephone sales support staff and VARs.
Diaz said HP will have the team in place by Nov. 1 and he is "very much hoping to remove some of the problems" that the smaller accounts have been experiencing. One of the consequences of the December change was that users who were accustomed to visits by sales representatives were moved over to VAR and telephone support. The loss of face-to-face contact with their sales representatives left some users feeling unsupported.
"A lot of customers used to having a salesperson calling on them regularly are having to deal with a telemarketing person and are not happy about that," said Jane Copeland, president of Austin, Texas-based software developer Holland House, Inc. and head of the advocacy committee for Interex.
Meanwhile, HP's support organization, called Worldwide Customer Support Operations, last week announced new programs that it said will enhance support across the entire user spectrum. The new program is intended to simplify service choices and increase the number of personalized service options, the company said.
The program gives users several support options, including an assigned support team and HP response center. It also offers support in areas including multivendor networks, software and on-site licenses.
"In the battle of the HP Premier Account Support program launched last May for users of the Open Systems Business System, a high-end mini-computer that HP introduced at that time.

New Orleans — Some small to midsize Hewlett-Packard Co. minicomputer users are up in arms, saying the quality of support has declined since HP switched to a value-added reseller (VAR)-oriented sales strategy last year.
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"We've had a very good experience with HP," said John Reitman, manager of treasury technology at Royal Bank of Canada's trading room in Toronto. Still predominantly an IBM mainframe shop, the bank has a niche of 125 HP Series 300 and 400 workstations in Toronto.

"There were times earlier on when we could see some type of engineering company making a transition," Reitman said. "But today, we only hear from a lot of software vendors who are taking the 700s as a development platform." Several users said that while the Series 700's leading price/performance now gets HP in the door, it is often other factors such as hardware reliability and service and support that tip the scales in its favor.

At Citibank NA's Treasury Risk Management Division in New York, for example, HP won a new account based on its well-reputed support capabilities and its application performance.

"On Wall Street generally, HP never had a real presence. I think that's starting to change a bit," said John Martino, vice president of software development at the Citibank division.

CONTINUED FROM PAGE 1
service and support count just as heavily.

Today, with hardware prices dropping, applications multiplying and new users moving away from frame minicomputer vendors, HP and other work- stational ock on commercial desktops. The changing HP workstations includes:

- Targeting new applications in specific markets such as telecommunications, retail, financial services and customer service, rather than wasting efforts trying to dislodge Sun's installed base. Already counted among HP's telecommunications customers are GTE Telephone Operations, AT&T, West, BellSouth Corp. and Northern Telecom, Inc.
- Training the sales force to push the Series 700 workstations to two overlooked customer bases: sites with HP 9000 Series 800 and 9000 servers and HP LaserJet printers.
- Phasing out, during the next several months, its high-end servers in the Series 700 line. This will eliminate a confusing overlap with the low-end Series 800 servers.
- Increasing investment in third- party software suppliers, ease-of-use software and Unix system administration tools.
- Producing low-cost, high-volumeware systems that surpass the power of Intel Corp. high-end personal computers and sell in the $3,5000 to $5,000 price range.

"HP is doing well on commer- cial desktops. I would rate them second to Sun, which is far and away the leader," said Thomas Fin- chary, president of Summit Strate- gies, Inc. in Bos- ton.

In the battle against Sun, ana- lysts and users said HP's advan- tages are its lead- ing position in Unix multituser systems with the Series 800 and a thriving X Win- dow System terminal business that is now 20% of its desktop volume.

The downside for all the workstation vendors is the mi- nuscule market share — esti- mated at less than 1% — for Unix-based desktops in the PC- dominated commercial world.

Solid figures are hard to come by, but industry analysts predict that growth rates in the busi- ness/profession software market could exceed 50% annually during the next few years.

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Users doubt a Wang comeback

Bankruptcy blues
Dissecting Wang's predicament

**Assets:** $1 billion
**Debt:** $1.3 billion
**Layoffs:** 5,000 worldwide, with 1,500 at headquarters
**Recent stock price:** 38c
**Timetable:** Hearing scheduled for today to map out spending allowances for daily operations

```
Wang Laboratories, Inc.

Storage Technology Corp.
Memorex Telex Corp.
Alliant Computer Systems
Floating Point Systems, Inc.

Revenues and asset figures at time of filing

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<th>Year</th>
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<th>Net Income</th>
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<td>$47M</td>
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*The company is largely liquidated (case still in progress)*
```

Users doubt a Wang comeback

**Continued from page 1**

terminals and personal computers for a series of local-area networks.

For example, an IBM RISC System/6000 version of Pace, Wang's database/software development system, still hasn't been sold, although the company has been promising it for several months. The product is due out before the end of 1992, according to Miller.

Still, Drumm said he is disillusioned. "They have good ideas, but they're unresponsive to customer needs. They pay us lip service," he said.

"Office 2000 is the right path. Office currently relies on Wang for VS support and will now turn to third parties," Edson de Castro, former chairman of rival minicomputer maker Data General Corp., echoed the general sentiment against Wang by five resellers that as of June 1992 — a year after signing the IBM deal — Wang had sold just 18 AS/400s and 80 RS/6000s. One reseller estimated that since Open/image was unveiled in June, Wang has booked another 300 or so RS/6000s. Wang would not confirm the figures.

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from IBM, related to the three-year, $100 million reseller deal the two companies signed in June 1991. IBM invested $25 million in Wang up front when it signed Wang on as an OEM for the RS/6000 and Application System/400 lines.

But both parties emphasized the deal's vague language last week. There could be an additional investment of $75 million," Miller said.

"It wasn't guaranteed but (was) based on [Wang's] meeting a certain level of sales performance," an IBM spokesman explained. That performance assessment is scheduled for January 1993, he added.

Neither party would enumerate precise sales objectives, but Wang has so far fallen short, according to industry watchers.

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Chapter 11, they'll be a wholly different company," said Henry Creal, an information systems analyst for the city of San Jose, Calif. The new Wang will be much smaller, he said, or it may be bought out by another vendor. "Either way, Wang won't be Wang," Creal said. Miller agreed: "Our focus clearly has to be on software and services," which is a line company officials have been repeating since the debut of Office 2000 in March 1991.

"If anyone can emerge successfully, Rick Miller can," said Matt Gillman, president of the U.S. Society of Wang Users, citing the $575 million debt Miller erased in his three years at the helm.

To survive, Wang must get products out — and fast, emphasized Tom Wilmott, vice president at the Aberdeen Group in Boston. "Wang's words have to ring true from now on, not hollow," he said.

As for the product lines...

While Chairman Rick Miller told Computerworld last week that he has "no plans to sell any part of the business," users and analysts speculated that some product lines stand to fare better than others after Wang's pending restructuring. Here are the consensus predictions:

- **VS line.** Continued incremental upgrades, with no new high-end machine to improve on the top-level VS 12000, introduced earlier this year.
- **PC business.** Opinion is split. Some analysts said that considering Wang's "reasonable" success in the mass merchandising channel, the firm will keep the PC unit going.
- **SIMM.** Wang spent 10 months in court fighting several Japanese manufacturers for patent infringement on single-in-line memory modules (SIMM). Wang won the case in August 1991 and is entitled to royalties from companies such as NEC Corp. and Toshiba Corp. on products they sold containing SIMM technology.

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Wang, which introduced its imaging package for the RS/6000 last month, is at least two months ahead of FileNet Corp. in bringing out imaging for Unix, Wilmott said. "But if they don't have that product shipping in volume by mid-September as promised, they can just hang it up as a company," he warned.

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KIM S. NASH

Will Wang pull through?

Consensus among Wang watchers is that the company will have a tough, if not impossible, time pulling up its bootstraps and trudging away from the stigma of Chapter 11.

Although Wang Chairman Rick Miller pledged continued support and enhancement for the VS line, the majority of users interviewed last week said they are jumping ship now and expect to be completely off VS within two years.

That means Wang has a limited time to tread water on maintenance revenue accrued from existing customers and must get the reorganization going pronto, many analysts noted.

Miller told Computerworld last week that he expects the bulk of the 5,000-person layoffs to be done within 30 days and the rest of the reorganization to be carried out "as quickly as possible."

Life may not be easy, though. Filing bankruptcy protection scaring existing users and repels potential new customers, strong rumors circulating for several weeks before Wang actually filed prompted some worried VS users, such as the American Stock Exchange in New York, to step up contingency plans.

Three VS minicomputer link 300 users at the Amex, which has been migrating applications from the minicomputers to local-area networks during the past two years, said Paul Dougherty, director of data processing services.

"The fact that [Wang] is in Chapter 11 may help accelerate funding," he added.

Besides customer ill will, Wang must overcome other obstacles, according to Edson de Castro, former head of DG, including:

- **The grueling Chapter 11 process.** "The horrendous legal and accounting issues they have to deal with now will take their focus away from where it should be: products," de Castro said.
- **Clarifying Office 2000.** The 18 months since Wang outlined its office automation strategy does not appear to have been enough time for Wang to clearly explain Office 2000.

Overall, analysts were not optimistic about Wang's chances for survival. "I think they're up against one of the most serious turnaround challenges in the history of the computer industry. It would take a Herculean effort," said Mary Rhodes, director of intelligent document management at New Science Associates, Inc., a Southport, Conn., market research firm.

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Fed users to get ATM service from Sprint

WASHINGTON, D.C. — The U.S. Department of Energy and NASA last week selected Sprint Corp. to upgrade three national research networks to Asynchronous Transfer Mode (ATM) broadband service.

The huge boost in bandwidth for those networks will significantly speed progress in meeting the so-called "grand challenges" in science, such as global climate modeling and human genetic research, users at the agencies said.

ATM, which moves data in fixed-length "cells," is an emerging technology that will allow data networks to evolve from T1 (1.5M bit/sec) speeds to as much as 622M bit/sec., the agencies said. T1 can transmit 20 pages of a standard dictionary in one second, while ATM can move up to 8,000 pages per second.

The T1 networks to be upgraded are the DOE's Energy Sciences Network and NASA's Aeronet and Science Internet. Joining Sprint in the $50 million, five-year effort are TRW, Inc., which is providing 11 ATM switches; Digital Equipment Corp., for network management hardware and software and systems integration services; and Cisco Systems, Inc. for network routers.

Sprint said it is rolling out ATM for the DOE and NASA on an "early availability basis," beginning later this year. Commercial availability is not expected until 1994.

"We'd expected to have to build the backbone and then find customers," said Dale Williams, an assistant vice president at Sprint's Government Systems Division. "Now we have the customer, and we have to go build the network."

Wave of the future

"This upgrade may show a path for the way the communications industry wishes to go," said David Nelson, director of scientific computing at the DOE, "like as users, as early buyers, are hopefully accelerating the process but not off toward left field."

Nelson said ATM will allow transfer of large files — "gigabytes heading toward terabytes" — from one research site to another.

He added that it will also enable "video to the desktop" — moving as "packetized" data — allowing researchers to collaborate face-to-face without traveling.

Nelson said the ability to move data at 622M bit/sec. will also enable "metacomputer" in which remote computers can be tightly coupled in real time for cooperative processing.

For example, Nelson said, a Cray Research, Inc. vector supercomputer at the University of California's Lawrence Livermore National Laboratory could share a computational challenge with a Thinking Machines Corp. massively parallel computer at Los Alamos National Laboratory in New Mexico, software permitting. Each computer would then do what it does best, he added.

The ATM network will provide a service to users of the three government networks and will be available to serve commercial users as well, Williams said. A test network is to connect Sprint to a DOE site by the end of the year; a "preproduction" network serving seven sites is to be in place by mid-1993; and a production network for 33 DOE and NASA sites will roll out beginning in mid-1993, according to Nelson.

The project is funded under the government's interagency High Performance Computer and Communications initiative, one component of which is to develop a gigabit/sec. National Research and Education Network.

The upgrade of the three research networks is one step in the evolution to the National Research and Education Network, Nelson said.
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**ADVANCED TECHNOLOGY**

**Users: 'We want our data faster!'**

Project targets goal of making storage devices capable of accessing data more quickly

**BY JOHANNA AMBROSIO CW STAFF**

"Break the bottleneck" is the battle cry of a group of users and vendors working on the next generation of storage technology. The goal is to vastly increase the speed at which people can access their data by up to 50 times over today's systems.

Although the project is initially targeted at the scientific and technical world, some advances are expected to make their way into the commercial arena within five years.

The collaboration is called the National Storage Laboratory and is housed in the University of California Lawrence Livermore National Laboratory in Livermore, Calif.

The venture got under way formally in May, but hardware and software is still being delivered, and the bulk of the three-year project is scheduled to begin early next year, according to Richard Watson, the project coordinator at Livermore.

**Multivendor push**

Six vendors are providing software and hardware, including a 20G-byte disk array from IBM's Adistar storage company in San Jose, Calif.; a solid-state memory device from Zitel Corp. in Milpitas, Calif.; network switches and gateways from Network Systems Corp. in Minneapolis; and UniTree storage software from General Atomics' Discos Division in San Diego.

IBi's Federal Sector Division is the systems integrator, and Ampex Recording Systems Corp. is providing high-speed, high-capacity tape systems.

**Years from market**

Although three years is the time frame for the project to be completed, it may take longer for the technical advances to find their way into the commercial world. "It's a bit early," said James Porter, president of Disk/Trend, Inc. in Mountain View, Calif. "The requirements for numbers of transactions, transfer rates and capacity are stipulated for the most of the computer industry."

"Network-attached storage architecture" is a new approach in terms of connectivity, said Bruce Henry, a senior architect at IBM Adistar. "There's very little invention required here; it's just a matter of applying a new approach in terms of connectivity," said Bruce Henry, a senior architect at IBM Adistar.

In this model, the data storage device — whether it is disk or tape or optical — is attached directly to the network instead of to a server. A lower speed network is used to send messages requesting data; the high-speed network is used to send the actual data.

"Network-attached storage architecture is going to be a major emerging technology in the server world," Watson said. "This is not the first time it's been thought of — it's the first time all the pieces are there to make it work."

This will, however, require more advanced storage management software, such as software that gives you the ability to manage multiple sites from one central control point, rather than what is commercially available today.

Another breakthrough will be needed in the area of storage hierarchies. Today's commercial systems, frequently used data is kept on disk, and less frequently used data is on tape. But if a new type of tape is added, it will require a new hierarchy: disk to new tape, old tape to new tape and so on. Today's storage systems cannot handle this level of complexity.

**Reaching agreement**

Mitsubishi Corp. in Tokyo and VeriVoice Systems, Inc. in Edison, N.J., said they have developed a computer that recognizes continuous Japanese speech. The Japanese Vocestation, demonstrated last month in Tokyo, is intended to help users converse with and control computer-based systems with a natural and accurate interface.

Still, he said, there may be "useful by-products" for the industrial sector in "improving the efficiency of some commercial systems." Ken Hallam, a partner at ENDL Associates, a storage consulting firm in San Juan Capistrano, Calif., said, "The problem here is software. The new storage architecture says that where the data is stored — head, track, sector — is independent of the actual device. But that's not how software is written today; you need to know all those things."

"If a commercial application had very large files and wanted to access them very rapidly, there's no reason why this model wouldn't apply," Henry said. However, he added, that would require that commercial processors have a Hippi channel in addition to a SCSI and other channel-attachment protocols used in many commercial environments today.
Apple announces a between Windo

Apple has long been known for breakthroughs. Apple pioneered desktop publishing. Apple was first to bring the quality of Adobe’s PostScript to popularly priced laser printers.

Apple was the first to make high-resolution scanning as easy as one touch of a button. And Apple LaserWriter printers remain among the highest-rated printers for image quality and durability.

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Lessons

For all sad words of tongue or pen, the saddest are these: "It might have been!"
—John Greenleaf Whittier

When business school professors wish to make a point about lost opportunity, they often refer to the railroad companies. Those companies mistakenly thought they were in the railroad business when, in fact, they were in the transportation business. That erroneous judgment left the railroaders standing at the roundhouse while trucking companies, and later the airlines, roared by them.

Thus was the case with Wang Labs, which last week found itself running for protection from its lenders under the shelter of Chapter 11. Perhaps more than any other foundering computer company in history, Wang lost sight of its business. therein lie the most poignant and wrenching lessons of the 1990s, not only for vendors but also — and maybe even more so — for the people who buy, deploy and manage information systems.

Understand that Wang was not just a case of another minicomputer company blown away in the PC revolution. This is a company that was an extraordinary technology innovator. Its founder invented mass storage. The company brought sophisticated desktop and palmtop calculators to the masses. It completely and irreversibly redefined the way work was done in the office. It was as though the company had stolen a page from the Bobby Kennedy school of thought: "I look at what could be and ask 'Why not?'"

An unforgiving market. An unforgiving industry. An unforgiving global economy. It is an environment in which nice guys who build great companies cannot afford to forget that they are only as good as what they do today.

Is honesty the best policy?

This is regarding "Is cover-up charged in system kill" [CW, Aug. 10]. What really captured my interest is Max Hopper's observation: "Honesty is an imperative in our business."

On one hand, I'd like to see that phrase carved in marble and placed on the lintel of every data processing office in the world. On the other hand, I know that honesty is one of the first casualties (along with quality) when a project becomes shaky.

Fortunately, resuscitating honesty is fairly simple, and the "bean counters" will appreciate that it won't cost a dime. All management would have to do is stop shooting the messenger.

I find Relcom incredibly valuable in setting up appointments, sharing information and simply keeping in touch, as do many of my Russian friends. Incidentally, much of Relcom's funding comes from the banking and exchange communities, which use it to exchange financial information.

Esther Dyson
New York, N.Y.

Relcom: E-mail Russian style

It's great to see coverage of the Russian computing scene, and I applaud John Morrison's efforts to publicize and exploit (in the very best sense) Russia's immense reservoir of programming talent ["Programming perestroika," CW, Aug. 3].

But I would like to put in a good word for Relcom, an electronic-mail network akin to the Internet. Relcom is a highly successful E-mail network, with more than 60,000 users from a community of 500,000 to 1 million personal computer users overall — a very respectable proportion compared with the U.S.

Relcom offers regular E-mail as well as a variety of local and international information services. Part of its success, of course, is that the telephone system as a whole is so bad: You let your computer do your dialing overnight.

I find Relcom incredibly valuable in setting up appointments, sharing information and simply keeping in touch, as do many of my Russian friends.

Computerworld welcomes comments from its readers. Letters may be edited for brevity and clarity and should be addressed to Bill Laberis, Editor in Chief, Computerworld, P.O. Box 9171, 375 Cochituate Road, Framingham, Mass. 01701. Fax number: (508) 875-8893; MCI Mail: COMPUTERWORLD. Please include a phone number for verification.

Bill Laberis, Editor in chief

COMPUTERWORLD

AUGUST 24, 1992
**VIEWPOINT**

**Revising our technology policy**

GORDON BELL

My bottom line for a better technology policy: End the responsibility for technology to industry groups and start centering it on government control and spending and distributing the responsibility for technology to industry groups.

The Executive Branch needs goals, plans with payback and accountability — not policies that enable an out-of-control bureaucracy. One only has to look at the High Performance Computing and Communications Initiative to see how big bucks and concentrated power can induce brain damage and wreak havoc.

In the 1970s and '80s, the Defense Advanced Research Projects Agency (DARPA) supported university research that formed products, companies and even industries. Now DARPA controls the supercomputer market with a massive development and procurement budget, creating many government-dependent companies while concentrating on massively parallel machines that may be minimally useful.

**Ready for action**

I have some suggestions for increasing technology competence and reducing federal R&D spending that can be executed immediately by the Executive Branch.

* Assign technology management responsibility to the Secretary of Commerce equal power on the Cabinet and reorganize the Commerce Department so that people are responsible for industrial segments, not policies. Communications with industry would reduce blunders such as tariffs for the protection of dynamic random-access memory and LCD displays that accelerates offshore manufacturing.

**ört Nuture new ventures in both start-ups and established companies.**

Invent government funds that would otherwise go to agencies with government partners. Industry groups will lead the planning to regain technology leadership, including the formation of consortia or laboratories. Their plans would be self-funding and include redirected government spending.

* Declare a moratorium on the production of reports and the formation of committees on technology and competitiveness. Review reports every year, provided they track government funds that would otherwise go to agencies.

**Give us alternatives!**

I have a right to software that works. Shrivel-wraped software has allowed developers to sell bug-riddled software at no risk to themselves. Developers must be held responsible for correcting bugs.

I will not tolerate or support planned software obsolescence. We are tired of being asked to buy the same program every year. Vendors are earning unfair profits by forcing users to pay for the same functions in a new wrapper.

I have a right to support services. Developers should guarantee access to support. Those who fail to meet minimum requirements should not receive our hard-earned dollars.

I have a right to interoperability. Software and hardware must work together. Developers and manufacturers must guarantee this or come under severe penalty.

I have a right to innovation. Where are the radical new hardware platforms? Where are the bold new directions in software? Where are the major new rewards? Where are the bold new directions in software? Where are the major new rewards?

Bell is a computer industry consultant at large, former head of R&D at Digital Equipment Corp., a member of various boards (including that of the Computer Museum) and winner of the 1991 National Medal of Technology.
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Introduction

Image processing is a critical technology for many companies seeking a competitive edge, and enterprise-wide imaging is already playing a crucial role in some of the world's most successful companies. Despite its advantages, however, imaging has still not established a widespread presence in the U.S. business community. Even though it has gained more acceptance in foreign countries, it still has not fulfilled the hyperbolic claims made in its behalf.

Anemic economic conditions have certainly played a significant role in suppressing the growth of imaging. Although its potential is alluring, its price tag may be daunting. No promise of profits down the road can put nonexistent funds into capital budgets, and the future is now for businesses with their eyes locked on the bottom line.

Information Systems (IS) departments are among those hardest hit by the economic downturn. Frequently denied even the opportunity to have input on hardware and software buying decisions, they are unable to demonstrate the value they can add with imaging if given the chance. As a result, imaging and other new technologies such as reengineering, workflow software and groupware can languish unused.

Many of the negative aspects associated with imaging have been overcome. Networks and image compression schemes are now largely standardized. Further, the price per seat has dropped from $100,000-plus in 1985 to $20,000 in 1992. And the cost per transaction — a truer indication of cost — has dropped even more significantly.

Imaging will flourish when the business community realizes that it is time to reexamine its outdated mores and accept internal change. Imaging can then act as a complimentary technology within enlightened organizations.
IS professionals at home and abroad are under siege. Budgets in many cases are flat if not declining, and the IS influence over IS-related expenditures has been showing a marked decline in recent years. Many companies are throwing around terms such as outsourcing, downsizing and reengineering, in many cases with little thought. Given these difficult times, it is not surprising that many IS professionals simply do not have the time or energy to cope with new technologies such as imaging, workflow software, groupware, et al.

“It's difficult to take a long-term strategic perspective on technology when the alligators are already in your swimming pool,” is the way one IS manager describes his inability to plan for imaging. He is not alone. A worldwide study of 5,000 IS professionals conducted by IDC's Worldwide IT Customer Directions and Strategies Group shows that only 14.2% of IS professionals in the U.S. and 12.6% worldwide intend to implement any significant type of imaging capability in 1992.

Despite this modest forecast, cost-conscious user-company top management must understand that imaging, when combined with a more enlightened approach to business practices in
general, can lift companies into a stronger competitive position. Effecting this kind of fundamental change in the traditional business psyche is difficult at best.

There are several arguments IS professionals give for not implementing imaging:
- Unless imaging can be implemented on an enterprise-wide basis it is difficult to justify the investment from a financial or architectural perspective
- Until imaging is available from system vendors, IS professionals cannot afford to invest significant resources
- On a cost-per-seat basis, imaging is simply too expensive
- Until there is a broad-based set of standards, imaging is too expensive to acquire, maintain and support
- Imaging is only good for specific departments and the onus is on them to interface with IS
- Imaging is flashy while microform technology is cheaper and legally acceptable.

Now that imaging is commonly based on standard networks, uses PCs without any specialized hardware boards, and is available from IBM, DEC, NCR and other leading vendors, the IS justification for not employing imaging on a broad-scale is eroding. Cost/seat prices have fallen from $100,000/seat in 1985 to generally less than $20,000/seat in 1992. Cost per transaction (a truer measure of cost) has fallen even more significantly over time.

The lack of specific ISO and de facto imaging standards is no longer a solid reason for not implementing image systems. There are CCITT Group 3 and 4 standards for compressing images, and many of the de facto standards used in the IS world — SNA, DECnet, etc. — are equally applicable to imaging.

IDC/Avante also believes the issue of imaging versus microform is moot. Microform is a valid technology for the long-term storage and retrieval of documents, and as such will be useful into the 21st century. Imaging is a less expensive way to process documents when they are in their active life cycle. Therefore, imaging and microform technology should be able to co-exist as part of a migration pattern in which active documents processed by imaging gradually become less active, or age to the point where it makes sense to store them on microfilm.

This is not to say that imaging is not effective in a file and retrieval mode, but retrieval rates have to be relatively high to justify the additional costs associated with imaging technology.

The primary remaining impediment to not implementing imaging concerns its applicability to a limited set of line-of-business activities. This is not a weakness but indeed a strength.

Imaging tends to yield the highest paybacks in industry-specific line-of-business activities. For example, insurance companies obtain optimal results by automating underwriting or claims processing functions. Banks typically benefit most from employing imaging in a mortgage loan servicing or credit card correspondence environment.

This is not to say that imaging is not as powerful as mainframes were 10 years ago, it is increasingly difficult to argue for a host-centric, central-control approach to automation. Client/server architectures are marching forth and the commodity pricing of computer power at the desktop and server levels shows no evidence of slowing. Therefore, the role of centralized IS departments will decrease as more and more companies refuse to write new mainframe applications, and more technologies such as imaging and OCR are put on networks. Add to this the pressure for open and standard systems, and it is easy to understand why IS is under siege.

On the bright side, the combination of PCs, LANs and existing network backbones creates the infrastructure IS requires to take its rightfully prominent place in corporate and organizational structures.
Trouble in the Business World

How many people have not heard the term reengineering? Not many. But how many really understand what it entails? The common perception of reengineering is that of gut-wrenching change in business systems and a whole new set of business applications that must be written or rewritten. The fact that business systems were not engineered in the first place hardly seems to matter to senior management hell-bent on reengineering their businesses. What does matter is that more and more businesses are recognizing the need to change.

There are several business factors that suggest that all is not well in the business world:

- The quest for Total Quality Management (TQM) is rapidly becoming a national obsession
- There is an increasing focus on the top-line (market share, revenue growth) as opposed to the bottom line (profit)
- Commodity pricing for PCs, LANs and servers means that the system vendors cannot afford to do business as usual. The major vendors face many of the same issues confronting IS
- Only through a continuous improvement program (CIP) can companies raise customer service levels and product quality while reducing costs and empowering employees.

Is Enterprise-wide Imaging Realistic?

Given the transformations taking place in the IS function, is it reasonable to expect IS to envision and implement an enterprise-wide imaging environment? Perhaps more to the point, does it make good business sense? There is a three-part answer to these questions. An economic response, an organizational or logistical response, and a technical response.

Economically, it may make sense for some companies to employ imaging from an enterprise-wide perspective. The economic argument in some cases may be based on the ability to provide a new product or service that would not be possible without the use of image technology. However, for most companies the capital outlay for an enterprise-wide system must be spread over several years. Since most users must cost-justify the acquisition of image technology, this commonly limits imaging as an all-pervasive data type. Consequently, image technology has been limited to those areas where well-documented financial return was possible. Despite this trend, the shift from imaging in line-of-business applications to enterprise-wide use is slowly taking place.

Part of the reason for starting small may be attributed to simple economics, but certainly the limitations of the technology — most notably, its limitation to a single database domain — and the complexities of completing the necessary up-front analysis have also contributed significantly to the departmental adoption approach of image users.

Organizationally, the hurdles of employing imaging technology on an enterprise-wide basis are formidable. In these lean fiscal times, the frequent senior management philosophy is, "If you are going to fail, make sure you fail small." That is why the first imaging project is often in the area of a company where failure has no price and success has little or no impact. These initial imaging projects are also frequently not transferrable to other areas of the enterprise.

The organizational issues, more than the economic or technical considerations, pose the biggest obstacles to enterprise-wide imaging.

Technically, enterprise-wide imaging is possible. The challenge for vendors and users goes beyond connecting disparate computer architectures, or employing standard and open systems. The challenge is separating those vendors with connectivity from those vendors that can layer an appropriate product set on top of the existing information processing infrastructure.

Most imaging users are automating the paper process. Since paper transactions cross not only LANs and wide-area networks (WANs) and in many cases countries, users need an architecture that not only allows transactions to flow freely but also can track and control transactions. This is where most enterprise-wide efforts begin to falter apart.

The other problem is that image systems tend to be bought and implemented in a helter-skelter fashion by various lines of business. Without some degree of IS coordination, many companies will rapidly acquire imaging systems from several vendors, thereby complicating the drive towards an enterprise-wide capability.

Enterprise-wide imaging involves
Without some degree of IS coordination, many companies will rapidly acquire imaging systems from several vendors, thereby complicating the drive towards an enterprise-wide capability.

more than simply integrating disparate computer architectures. It also requires access and customized views of the associated data and images. The definition of enterprise-wide access is not complex. Once a specific business function is automated with imaging technology, people beyond the newly automated department can also benefit from the imaging database. Therefore, it is necessary to find an economical method that provides casual access to this new database resource. This casual access should involve a consistent front-end that shields the user from the native interfaces.

Providing an enterprise-wide imaging system requires the use of sophisticated folder software, which allows users to view data and associated images for multiple management functions without storing the data and images multiple times.

Most of the system vendors, such as IBM and Digital Equipment, offer imaging based on their existing strategic architectures. For database management systems, this means Rdb and DB2. Networking is based on DECnet and SNA. The imaging system vendors are also catering to standards by supporting common databases, such as those available from Oracle and Sybase. 3COM and Novell are the most prominent network operating system companies. Interactive multiwindow desktop interoperability is commonly offered through Dynamic Data Exchange (DDE) under MS Windows 3.0.

Currently, no single vendor offers true one-stop shopping. The system vendors are trying to address standards. When it comes to workflow software, they fail to understand it from an application and system-resource perspective. The image vendors are closing in on workflow software application solutions, but they are not large enough to convince many large corporations to view them as significant automation suppliers.

THREE ORGANIZATIONAL MODELS

Enterprise-wide imaging systems generally reflect one of three organizational models. The first model is the traditional view. This model has a large number of workstations, is normally constructed with conscious architectural considerations, and is usually compliant with evolving standards such as those proposed by the ISO's Open Systems Interconnect model.

The second model of enterprise-wide architectures reflects the software changes IDC/Avante believes must happen if users are to widely implement imaging. These changes imply the use of folder software to present individual views of the data and images while only storing and manipulating one set.

The third model is based on the premise that the concept of the enterprise is expanding to include not only the user company, but its suppliers, agents, customers and government. All of these groups may be found in a single image implementation.

Today, many vendors and users alike are stuck with the traditional model of enterprise-wide imaging. However, IDC/Avante sees a definite trend towards the second model, particularly in the insurance and healthcare industries. The third model is more applicable to truly innovative companies, mostly found in the financial sector.

VENDOR APPROACHES

Sigma Imaging Systems is one vendor that preaches the gospel of distributed processing and central records control. It strives to leverage its systems at all levels while offering the ability to expand systems incrementally without having to add gigabytes of storage or make other dramatic changes. Sigma has implemented a system at Empire Blue Cross/Blue Shield with these central concepts in mind. The system features 23 Kodak ImageLink 9000 scanners, processes 100,000 documents/day, includes six jukeboxes at three sites: Albany, N.Y., New York City and Yorkstown, N.Y.

The system automates multiple lines of business: medicare, a dedicated state service center and claims processing. The single catalog of images and the various jukeboxes communicate over an SNA network that links all sites. Work-
ATTEND THESE UPCOMING AIIM EDUCATIONAL EVENTS

Electronic Imaging for Systems Analysts: Feasibility, Requirements, and Justification
October 26-27, Chicago, IL
November 16-17, Los Angeles, CA

Imaging User Forums
November 19-20, Chicago, IL

Executive Seminar on Electronic Image Management
December 3-4, New York, NY

For more information, or to register for these events, call the Education Department at 301-587-8202.

YOUR IMAGING CONNECTION
Sharpen your edge.

While some people view imaging systems as just document storing tools, others view them as something much more powerful.

Strategic tools.
Take the Auto Club of Southern California. With 140 people filing 34,000 documents a day in 21 miles of folders, paper gridlock resulted.

“Customer files used to be very inaccessible, sometimes 40 miles away,” they told us.

We suggested ImagePlus, IBM’s imaging offering for work process management. In short, they projected savings of $2 million per year by
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They later added, "ImagePlus let us respond to our day-to-day customers—immediately."

In finance, take the example of Massachusetts Financial Services, which supervises $28 billion in assets for over one million investors.

In less than two years they slashed workflow steps 55% by gradually changing from their wasteful paper chase, to ImagePlus. As for productivity, it jumped 20%.

We have dozens of examples, but all comment on two major capabilities: The fact that ImagePlus is designed to integrate with systems you're already using—from PCs to mainframes.

And that, together with our specialized consultants and network of Business Partners, we can tailor the best hardware, software and consulting services to fit your exact needs.

From insurance and banking to public and health services, IBM imaging technology can help sharpen virtually any industry around the world.

To spark your interest even further, give us a call:

1 800 IBM-6676, ext. 739.
THE PRODUCTIVITY ADVANTAGE

Imaging — the storage and manipulation of documents electronically or on microfilm enables businesses to radically reshape the way they function.

Organizations that deal with checks, insurance claims, legal records, engineering drawings, or simply extensive correspondence can realize significant competitive advantage utilizing imaging systems.

Discover the state of the art at IMC Document Imaging 92, the conference and exposition of Europe.

From September 14-16, Berlin's International Conference Center will host a gathering of key vendors and experienced users of imaging products and services. See solutions in action at the exposition. Profit from the experience of knowledgeable experts at the conference.
The IS Call to Arms — 11 Steps to Change

Unless there is a general call to arms, IS will become a simple maintenance function with some network caretaker services provided by specialists. It will have no opportunity to add value or make critical decisions. The call to arms should include several elements. In order to fulfill them, IS professionals must:

1. Understand the business environments of their companies and determine the appropriate mix of technologies to accommodate those environments.

2. Fully leverage existing IS infrastructures.

3. Recognize that IBM and Digital will be the network providers of choice, while imaging, workflow software and groupware will more than likely come from companies such as Lotus, Plexus, FileNet, Action Technologies, Wang and Computron.

4. Recognize that outmoded development environments must go. Hard coding imaging solutions simply recreate nightmarish support and maintenance scenarios. Instead, users should use automation efforts to ensure that the workflow process is isolated from the business application, and eventually from the data application. The goal is to change the workflow without negatively impacting other processes.

5. Beware of vendors offering a new lease on life through image-enabling legacy applications. This may be a suitable migration strategy for some, but it may leave others in a technology purgatory between the old and new worlds.

6. Break down the communication gap between IS professionals and business people.

7. Be aggressive with major computer suppliers. IS must demand that the system vendors alone, or in partnership, provide the appropriate products and services needed to get IS out of their legacy environments.

8. Implement imaging with an enterprise-wide view in mind while being mindful of the changes enterprises are experiencing.

9. Understand that imaging and the issues associated with imaging are typical of the organizational and technological issues that IS will be confronted with in the next ten years.

10. Shift IS expenditures away from processing transactions and toward automating people and the relationships between them.

11. Recognize that we are in a unique point in automation history. The competitive battleground is not simply quality or the time required to get to market. Instead, the competitive battleground is based on creating value, which, in the words of Russell Redenbaugh, Chairman of Action Technologies, is "the new coin of the realm." As such, we are not so much automating the flow of paper or data. What we are really talking about is an overall automation environment that allows systems to allocate resources dynamically.

in-progress is distributed on OS/2-based systems, but the image catalog — which contains 22 million documents — is on an IBM ES/9000.

FileNet Corp. considers its implementation at Chemical Bank in New York City to be an enterprise-wide system. According to FileNet, the system currently includes two cities, five systems and nine applications. Its users share data and images in a variety of different ways. Application processing, charge-backs and customer service applications reside in one city while the users are in two cities. FileNet says the system qualifies as an enterprise-wide system based upon its having data available to a distributed set of people or multiple applications that may be co-located or distributed.

Wang Laboratories believes there are few, if any, imaging systems that are truly enterprise-wide. In fact, Wang argues there may not even be a demand for enterprise-wide systems in which anyone working in an organization has access to all information. With the exception of small and focused enterprises such as resume access in a recruitment environment, Wang believes the need for everyone to have access to all data is simply not required. Since there is a division of labor between departments, the company maintains that it is unlikely that one form of information has to be accessed by all groups.

Despite this position, however, Wang also believes it is very important for prospective imaging customers to consider the enterprise-wide imaging implications in their up-front analyses because it leads them into considering the possible impact of standards and the implications they may hold for future expanded imaging systems.
Document management is changing. The process can be wrenching and expensive. Or it can evolve the Kodak way: film or digital or both, at a pace to match your needs.

No one document management technology is likely to be all things to all businesses for all time. Kodak gives you choices, with options to change—with a “hybrid” strategy that puts you on the leading edge while retaining your investment in current technology. To see how Kodak can put imaging to work for your business, call 1-800-445-6325, Ext. 950M.
Not surprisingly, IBM has done a lot of thinking about the issue of enterprise-wide systems. The company says enterprise-wide imaging has a lot more to do with the approach than with scale or scope of implementation. It cites a number of notable considerations, including the need for:
- Some element of work management
- An industrial-strength solution
- A conscious set of architectural elements.

### THREE ENTERPRISE-WIDE SCENARIOS

IDC believes there are three possible scenarios for enterprise-wide imaging systems. While all three are different in definition they are certainly not mutually exclusive.

The first scenario includes hundreds of workstations as are found in implementations at USAA of Plano, Texas, and Putnam Investor Services of Quincy, Mass. These systems are absolute in scale, meaning the number of workstations they support can be expanded without limitation.

The second scenario is found in small companies where imaging is pervasive across the entire business. D.B. Kelly, which uses imaging to eliminate insurance fraud in the automobile inspection process, is an excellent example of this approach, which typically calls for fewer than 50 workstations. However, the ratio of workstations to employees is nearly one-to-one. D.B. Kelly is all the more remarkable because imaging allowed it to create a business that was not feasible without imaging.

A third scenario of enterprise-wide imaging comes into play when companies redefine their definition of the enterprise. IBM implemented an internal imaging system to handle customs documentation (IBM was the first company allowed by U.S. customs to destroy the original paper documents). Subsequently, the system is being expanded to include the customs brokers that handle IBM shipments at the different ports of entry.

### GLOBAL IMAGING IMPLICATIONS

IS managers in the U.S. are not alone in the struggle to place imaging, workflow software and groupware in perspective. As Europe marches toward a monetary union, many United Kingdom and European IS managers are also coming under intense pressure to provide a more seamless IS environment on an intercountry as well as an intracountry basis.

Despite the European unification efforts, however, it is a great mistake to perceive Europe as one market. The use and sophistication of imaging in various European countries is as varied as the business problems imaging solves in the U.S. For instance, Spain and Italy frequently implement file and retrieval applications, while Germany uses more workflow technology.

Far from being one market, Europe will remain a series of relatively unique markets well into the next century. Certainly the European Community (EC) simplifies many of the legal issues that U.S. companies must comply with in order to do business in Europe, but the driving factors behind the acquisition of new technology will still be different in each country.

As one European explained it, "We are all part of the EC but that does not mean we are similar or that we necessarily even like each other."

### APPLICATION BRIEF

**The State of Missouri, Employment Securities**

This agency's job is to collect quarterly employment taxes. This means that once a quarter Employment Securities is literally deluged with thousands of checks. The result is that its processing cycle has huge peaks that last for 10 days.

Before implementing imaging, it took 10 days to pull the checks and get them to the bank. Anyone that was available from another department was requisitioned to pull checks because the state wanted to reduce float and make sure it could tell people that their payments had been received. It took approximately six weeks to get the information off the reports and get the basic
Enterprise-wide Imaging

Leading Japanese imaging users in the manufacturing and government sectors frequently rely on electronic filing cabinet applications.

APPLICATION BRIEF
State of Louisiana, Department of Public Safety
The State of Louisiana Department of Public Safety needed to supply information on drivers to many other agencies and departments. Problem drivers are a large part of that information, and tend to remain that way over time as they go in and out of the court system, amass police driving records and have their licenses revoked. Insurance company requests further compounded the state’s information retrieval demands. In this environment, the state typically provides information to six outside organizations. Since placing this information on an imaging system, all files are readily available, and can be easily shipped across communication lines. The state’s goal is to leverage imaging to the point where it no longer needs paper and microfilm, but can maintain information in an electronic folder. It also wants to include arrest histories — which are maintained separately from driving records — and mug shots in these electronic folders.

The state eventually wants this information to be accessible not only by the Department of Public Safety but by the court system and mobile units of the fire and police departments. The agency receives 12,000 pieces of documentation weekly, and has a 12-million-document backlog. So far, 2,000 terminals have been installed to fight the imaging battle.

APPLICATION BRIEF
American Republic Insurance Company
American Republic has $386 million in assets, $150 million in health premium income, $1.4 billion in current life insurance business and 200,000 policy holders. It installed an imaging system in order to bring a higher level of automation to its claims adjustment department in the health claims area. Currently this area handles 1,300 claims per day, which is a 25% increase in volume over last year.

American Republic estimates that its image system will save $1.25 million over the next five years on reduced staffing costs. An additional $48,000 is expected be saved in microfilm equipment and services.

JAPANESE IMAGING MARKET SHARE BY INDUSTRY

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Source: IDC/Arane
Different kinds of data in different formats all over your organization. From computer files to tattered manila folders. What happens when you need to access that information in order to settle a worker's claim, for example? Or if more than one person needs to review the same file at the same time?

The answer is confusion, wasted time, lost resources, low productivity.

Unless, of course, you have DECImage Express from Digital. A technology that lets you convert anything found in paper files - bills, forms, case reports or faxes - into computer images. Thus allowing you and everyone else in your organization to search for, gather and, most importantly, use information to make decisions.
No matter where that information resides or how many systems you have...

With regard to a worker’s claim, this means doctors and hospitals can be paid sooner (with fewer duplicate payments) and everyone served better.

Years of experience with systems solutions, hundreds of strong third-party relationships and our NAS (Network Application Support) technology have made DECimage EXPRESS possible. And they’ve given you the flexibility to start with a departmental solution, then grow as your needs do, adding virtually any new technology you need in the future.

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Whether you're in finance, government, travel, telecommunications or any other service industry, call us at 1-800-448-1494, ext. 139. Ask how our imaging solutions can help improve your business picture today.
Move to GUI can put graphics to the test

BY CAROL HILDEBRAND (CR STAFF)

With graphical user interfaces (GUI) currently hot out of the gates, many users looking to migrate to such operating environments as Windows or OS/2 are discovering that their hardware cannot pass muster. Not only is it a question of CPU, but a GUI also means higher graphics hurdles to clear.

"GUIs are very hot, but there is a lot of demand put on the graphics by them," said Tom Ryan, executive director of the Video Electronics Standards Association (VESA).

Analysts said that you would want to consider the following display resolution and performance requirements for wide-screen Windows capabilities:

- With chip manufacturers coming up with random-access memory (RAM) larger displays are becoming a reality. However, quality color, users are going to need better displays. Many analysts also insist that larger monitors are in order.
- Jon Peddie, publisher of "The PC Graphics Report" in Oakland, Calif., said that for a corporate Windows user, a 17-inch monitor with Extended VGA (1,024 by 768 resolution) would be necessary.
- The next performance enhancement is to use a graphics board that has bit block transfers (bitBLT). BitBLT takes the onus of moving things and icons on a screen off of the host processor and puts it on the graphics board, thus freeing the system from a time-consuming task. A similar enhancement is moving cursor support off of the host and onto the graphics board.
- Peddie also recommends having what he terms an input buffer, which allows the display board to take several instructions at once and hold them until the graphics board can process them, thus cutting down the use of the slow system bus.
- Another hot area right now is local-bus personal computers, in which the graphics board bypasses the system bus to speak directly to the host processor. With the clunky I/O bus out of the graphics board can process instructions at once and hold them until the graphics board can process them, thus cutting down the use of the slow system bus.
- Another hot area right now is local-bus personal computers, in which the graphics board bypasses the system bus to speak directly to the host processor. With the clunky I/O bus out of the way, the speed increase is substantial.
- The local-bus phenomenon has sparked a minitrend, with companies looking to exploit the local-bus capacity. However, VESA is not to run the features list for its local-bus standard by the end of the month, Ryan said. "The local bus really has potential. It will create killer PCs."
- One interesting side effect of the advent of Windows is what happens with graphics display standards.
- Graphics standards were critical in the DOS world, Brigham noted, because application software had to have a driver written directly to the hardware in a standard way. IBM usually set the standard, with the likes of Color Graphics Adapter, Video Graphics Adapter (VGA) and Super VGA making appearances.
- However, IBM's current entry, Extended Graphics Array, may end up as more of a controller than a standard. "With Windows, the interface takes over and you have a Windows driver," Brigham said. "It becomes less of a hardware standards issue and more of a Windows compatibility issue."
- The hotbed of activity in the Windows arena is graphics board and chip manufacturers hustling to provide innovative products in a market that many analysts say is overcrowded. Thus, a user looking to exploit the full graphical advantages of Windows will find a buyers market when it comes time to upgrade graphical capabilities.
- Analysts interviewed last month at the Personal Systems and Software show in Las Vegas said that there is "a real positive impact on the user," Brigham said. "Board vendors are aware of the dynamic change in terms of price/performance. There are a lot of products at very low prices," she said.
- Peddie estimated that there are more than 400 boards on the market for VGA alone.

High standards
- Of the more than 15 display standards, the following are among the major ones that support Windows 3.1 and 4.0 and Extended VGA (1,024 by 768 resolution):
- Name or category       Pixels Lines
- Video graphics adapter 640 480
- Super VGA              800 600
- Extended Graphics Array 1,024 768
- High resolution or Extended VGA 1,024 768

3M to ship 'floptical' disks

BY MICHAEL FITZGERALD (CW STAFF)

ST. PAUL, Minn. — Imagine a floppy disk that could hold 14 times as much information as it can now, in the same form factor. 3M Co. is slated to begin shipping its new 20M-byte 33+ "floptical" disks later this month.

Users will be able to buy them through traditional retail channels. 3M has not set final pricing, but it said it is targeting them at $31.45 a disk. 3M expects street prices to be $105 for a box of five.

Analysts interviewed last week were split on whether they thought flopticals, magnetic disks that rival optical discs in capacity, would become popular.

"It's a niche market," predicted Don Swystun, an analyst at Dataquest, Inc. "It's a good idea, but the price of the drive and media will prevent it from becoming a product for the masses."
Because There Are More of Them Than There Are of You...

The SAS System for Information Delivery

The CEO needs visual checks on all the factors critical to the success of the business. The CFO wants a "small" change in the financial reports. The marketing VP is anxiously awaiting pricing models. And they're still waiting for inventory and quality monitoring systems out on the factory floor. How can one IS manager—with so little time, so few resources, and so many budget constraints—meet the diverse needs of so many clients? The answer is the SAS System for Information Delivery.

Integrated Applications for Enterprise-Wide Productivity

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**Visions of Paradox**

Summer is winding down, but the bulletin boards continue to buzz.

A Paradoxical situation. Everyone on Borland's BORB forum seemed anxious to jump the gun on Paradox announcements - except Borland. Paradox 4.0 is finally being shipped, according to the company. But at least one user on CompuServe claimed to have it a couple weeks ago, much to the surprise of the Borland support staff. After some good-humored hounding, the culprit admitted to his hoax, saying he was only trying to break the tension of the wait for the upgrade.

Other users reported that one hardware vendor was announcing shipment of PCs with Paradox 4.0 bundled well before the database was shipping, and another vendor, Target Software in Allen-town, Pa., posted a note about a third-party dialog box painter for 4.0. Now we'll see if the excitement is justified.

AUGUST 24, 1992


Lindquist is a Computerworld staff writer.
IS YOUR DATA FUTURE PROOF?

Right now almost 90% of your applications use TurboIMAGE database. But, as you move towards relational or object databases, how will you integrate this new technology with your existing data?

WHERE TECHNOLOGY IS GOING, WE'RE ALREADY THERE

Relax. Because now there's a new solution that lets you develop with the database of your choice. You can develop new or maintain existing TurboIMAGE databases and join TurboIMAGE with ALLBASE/SQL and KSAM. Or, convert TurboIMAGE, KSAM or even flat files to ALLBASE/SQL.

Whatever your preference is, we have the solution. It's FOCUS from Information Builders. The leading specialists in distributed information systems. FOCUS offers application development and decision support tools for integrating databases from HP, third parties such as Oracle, and in the future HP's OpenODB.

No other 4GL product comes with this breadth of functionality, bundled with an automatic database conversion tool!

ACCESS ALL OF YOUR DATA

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And because FOCUS provides you with complete application portability and access to over 50 data structures across 35 operating systems, you can port any application to the HP and still have access to your legacy data.

So for guaranteed database flexibility the next step is easy. Call Information Builders, an HP Premiere Solutions Provider, for more information on FOCUS or to attend a FREE Seminar...

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IBI FOCUS
Information Builders, Inc.
The company has managed to squeeze out the fuzzy release date Borland discussed last year, and it's freezing purchases. A new release of Paradox for DOS, but without a new release of Paradox for Windows, which it first demo'd a year ago. Borland’s latest reorganization puts dBase IV into the programming languages group, where it’ll be sold as a tool for professional programmers. That understimates the upgrade potential of dBase’s user base and makes it a second-class citizen to Paradox. To top it all off, Borland is physically split up among more than a dozen buildings all over Scotts Valley, Calif. Isolation dampens morale.

Recommendation to Philippe Kahn: Hire yourself a professional manager. Your company is too big and diversified to be run like a bootstrap operation. The smart people at Borland need to concentrate on products, not reporting structures. A lot of people want Borland to do well, if only to counteract the Microsoft dreadnaught. But even a band of barbarians needs organization.

What’s most impressive about Quattro Pro for Windows is its notebook metaphor. Picture your full year’s worth of expense reports in a single 3-D volume with individual pages for each week.

The smart people at Borland need to concentrate on products, not reporting structures. A lot of people want Borland to do well, if only to counteract the Microsoft dreadnaught. But even a band of barbarians needs organization.

WYSIWIS. The two big bugaboos of electronic publishing are that documents are too big to transfer over a network economically and that a pretty document created on one machine won’t look good on another unless the user has exactly the same software installed.

Now, along comes Adobe Systems with an approach you could call “What You See is What I Sent.” Its Carousel software, due out in early 1993, is the most exciting new technology I’ve seen this year. Interleaf has a similar product called WorldView (shipping now) that’s aimed at the high-end publishing market, but I haven’t seen that yet.

Carousel makes high-quality electronically published documents readable by anyone with an inexpensive software “viewer,” and it’s machine-independent. In a demonstration, Adobe took a desktop-front page of Computerworld, converted it to Carousel format and transferred it freely between different computers — DOS, DOS/Windows, Macintosh and Next. It looked almost exactly the same on all of them.

Carousel uses whatever fonts it can find on the target machine to recreate a page as accurately as possible on the screen or printer. Where it can’t find a font, it mimics it using an Adobe technology that keeps all the line spacing and letter widths intact. You hardly notice the difference.

Best of all, Carousel compresses files by about a factor of 50 compared with PostScript. The Computerworld page took up a minuscule 28K bytes of disk space, including all the graphics. What’s neat about that is that a 28K-byte file is a snap to download from CompuServe or send out over the corporate E-mail system.

Imagine publishing your magazine, newsletter, product documentation, etc., and posting it on a bulletin board or shipping it on floppy disk. Adobe has even built some hypertext features into Carousel that let you skip around a document by clicking on headlines or icons.

Now, whether Adobe can actually sell Carousel in the quantities needed to assure success is another story. As a publisher, I hope it can.

Gillin is Computerworld’s executive editor.

Tax preparation meets CD-ROM

NEW YORK — Research Institute of America, Inc. and Computer Language Research, Inc. recently entered into an agreement to bring to market what the companies claimed is the first integrated compact disc/read-only memory (CD-ROM) software package for small to medium-sized accounting firms.

Research Institute’s electronic research product, OnPoint, will be integrated with EasyGo, a tax preparation package from Computer Language, to create EasyGo with OnPoint, a CD-ROM system that will run on Intel Corp. 80386- or 1486-based machines. EasyGo offers tax compliance, research, electronic tax forms, planning and practice management, all on a 660M-byte disk.

Stephen T. Winn, president and chief executive officer at Computer Language, said EasyGo incorporates all types of tax forms for city, state and federal taxes.

EasyGo with OnPoint is priced starting at $2,000 for four disks. Users will receive monthly updated disks to reflect changes in tax law, according to Louis Luccarelli, president and chief executive officer at Research Institute.

Winn said users who buy the disks before Oct. 15 are entitled to a free Toshiba America Information Systems, Inc. CD-ROM reader.

(Coming August 31, a new idea in network printers from Compaq.)
Delrina readies PerForm Pro Plus

BY CHRISTOPHER LINDQUIST CW STAFF

Toronto-based Delrina Technology, Inc., has taken a slightly different tack on building personal computer-based applications. Companies such as Microsoft Corp. and Borland International, Inc. created development tools by attaching a form designer to a development environment with Visual Basic and ObjectVision, respectively. Delrina has come at it from the other direction. It has added a development language and other tools to its forms-creation package.

The result is PerForm Pro Plus, a forms-based tool that works on several levels to automate form procedures. At the first level, PerForm Pro Plus allows users to create forms either by drawing them on-screen or scanning them in. The forms can then be printed as needed, which saves paper and form production costs. Secondly, these forms can be given "intelligence" that allows them to be filled in on-screen and perform such functions as calculations and data validation. The filled-in form is then printed.

Beyond this, the forms can be attached to various databases, such as Borland's Paradox or dBASE, and used to automatically retrieve and update information. Finally, the forms can be attached to communications media such as electronic mail or integrated into other applications via Delrina's Intelligent Form Language to create dispersed, large-scale applications.

"The product looks quite stunning," said beta-test user Zul Zaver, an information analyst for the city of Calgary, Alberta. "It's a vast improvement over the old version."

In particular, Zaver said he was impressed with the enhanced user interface, which offers better bars, and its increased support for external databases. "I think we'll be able to build far more sophisticated applications than before," he said.

PerForm Pro Plus will be available this month for a list price of $399. The PerForm Communicator E-mail communications module and a server-based SQL product is scheduled to ship later this year.

3M to ship 'floptical' disks

CONTINUED FROM PAGE 53

Mountain View, Calif.-based Disk/Trend, Inc., disagreed. "I expect there is a really good chance a market will develop for these," he said. "It works, it's reliable, and for a lot of folks, it's very handy to have on the computer, and it just might take off."

Performance at a premium

One beta-test user said the product is ideal for him so far, despite its expense. "We use it tremendously," said John Stewart, host of "Radio Computer Magazine," a syndicated radio show. The show runs for 30 minutes, and one minute of sound can consume 6M bytes of storage space, which far outstrips the capacity of a conventional floppy disk.

Floptical technology is similar to the Bernoulli removable storage disks from Omega Corp., but flopticals are smaller and cost less. 3M estimated that 10,000 floptical disks are now installed and that the base will rise to support a $750 million business by 1995. The drives are made by In-syte Peripherals, Inc., which has licensed its technology to a number of vendors. 3M said larger personal computer programs such as OS/2 and Microsoft Corp.'s Windows 3.1, which consume many floppy disks, could be held on one disk now.

Biles releases new version of AIM-Supervisor

Eases information sharing

BY MELINDA-CAROL BALLOU CW STAFF

HOUSTON — Biles & Associates has released a version of its AIM-Supervisor process manufacturing software that was designed to allow users to share information across applications and platforms more easily.

The new version supports both Wonderware Corp.'s NetDDE and Digital Equipment Corp.'s At a Glance software that runs on top of DEC's Application Control Architecture (ACA). Irvine, Calif.-based Wonderware's NetDDE provides real-time process data to any of more than 1,100 DDE applications. At a Glance, which runs on top of DEC's ACA Services, lets users integrate PCs or workstations running VMS, Unix or MS-DOS.

The two iterations of AIM offer varying advantages: The NetDDE interface offers AIM users easy access with their data to any of more than 1,100 DDE applications. The At a Glance interface requires a client/server implementation using ACA Services.

This means that users must write an ACA programming script for each client, but they can integrate data over operating systems that are not DDE-compliant, Biles officials said.

Support for the interfaces is shipping now in a prerelease version, and each is priced at $5,000. ACA Services and At a Glance must be purchased separately from DEC, but NetDDE is included. The AIM manufacturing system runs on VMS and Open VMS, and pricing starts at $16,000.

IN BRIEF

Tandy ships 3800 HD

- Tandy Corp. released the 3800 HD notebook, which uses the Cyrix Corp. CX486SLC chip.
- Texas Instruments, Inc. recently cut prices $300 to $800 for its Mate 3000 and 3000 WinSX products, making pen peripherals and SuperScript makes pen peripherals.
NEW PRODUCTS

Software application packages

Comshare, Inc. has released Commander Version 3.0, an executive management support system. Commander 3.0 has a personal computer-based graphical user interface. The Desktop Builder incorporated into Commander 3.0 is an application builder that includes a new scripting language and graphical script generator, according to the company.

Additional features include remote application management, information and application security and change control.

Commander 3.0 costs $1,500 for a single copy. Volume discounts are available.

Comshare
3001 S. State St.
Ann Arbor, Mich. 48106
(313) 995-0398

Peripherals

The Information Systems Division of Mitsubishi Electronics America, Inc. has introduced Diamond Pro 17, a color monitor for personal computers, Apple Computer, Inc. Macintoshes and Unix-based systems.

The product was also designed for users who want a desktop monitor for Microsoft Corp.'s Windows and Open Look environments. It can be used for computer-aided design, manufacturing and engineering and for Unix users who are upgrading from monochrome monitors, according to the company.

Diamond Pro 17 can work with the Diamond Match Color Calibration System, which matches on-screen images with hard copy colors.

Diamond Pro 17 costs $1,599.

Mitsubishi Electronics America Information Systems Division
5665 Plaza Drive
Cypress, Calif. 90630
(714) 220-2500

Kansai Electric USA has started shipping the serial version of its Kwik-Stor series of user-expandable printer and plotter buffers.

With standard Apple Computer, Inc. Macintosh or IBM single in-line memory modules, the buffers can be expanded to a maximum of 8M bytes, the company reported. The baud rate can be set to allow the product to receive data from the serial port of the CPU.

Kwik-Stor can then transmit data to the printer. Support for both hardware and X-On/X-Off handshaking is provided.

Serial prices range from $229 to $1,029.

Kansai Electric
Suite 220
2005 Hamilton Ave.
San Jose, Calif. 95125
(408) 377-7062

SIIG, Inc. has introduced Video Grabber Plus, a multimedia add-on board for AT computers.

Video Grabber Plus features video capture and live audio and video display. Images can be frozen and saved in an assortment of file formats ranging from 24-bit true color to 8 bits per pixel. The product is a video-card enhancement tool that has 21-bit color display support for 3 million colors simultaneously and color keying of 256 colors.

Video Grabber Plus plugs into a standard 16-bit XT/AT expansion bus parallel to the Video Graphics Array (VGA) card. It connects to the VGA card via its feature connector, the company reported.

Video Grabber Plus costs $495.

SIIG
6078 Stewart Ave.
Fremont, Calif. 94538
(510) 657-8688

PC Guardian has announced NoteGuardian, a hardware product designed to prevent theft of portable computers.

According to the company, NoteGuardian includes a custom design anchor with a built-in lock and a five-foot security cable. For portability, the cable folds into a compact carrying bag. The cable anchor is installed using existing features on the notebook.

PC Guardian costs $49.95.

PC Guardian
118 Alto St.
San Rafael, Calif. 94901
(415) 459-0190

Fax

Brooktrout Technology, Inc. has introduced the TR114, a universal port card that fits into an XT/AT-compatible bus slot.

The TR114 has a dedicated CPU and a digital signal processor on each channel for advanced fax and voice handling and format and compression conversion.

According to the company, the TR114 supports Group 3 and 4 fax compression with automatic conversion of ASCII, Tag Image File Format and other files, which allows for binary transfer and eliminates the need for external data modems.

The TR114 costs $2,995.

Brooktrout Technology
144 Gould St.
Needham, Mass. 02192
(617) 449-4100

COMING SOON: THE MOST COMPLETE NETWORK PRINTERS EVER BUILT. AND YES, YOU CAN PRINT THAT.

(Coming August 31, a new idea in network printers from Compaq.)
Norton Desktop for Windows: Great value

Symantec's Norton Desktop for Windows 2.0

Vendor background information
Symantec reported profits of $7.7 million on revenue of $62 million for the quarter ended March 31. Profits for the same quarter in 1991 were $5.7 million on revenue of $41.5 million. Analyst Peter Rogers at Robertson, Stephens & Co. rated the firm's short-term performance and long-term stability as very good.

Hewlett-Packard's NewWave 4.0

Vendor background information
HP reported revenue of approximately $4 billion for the quarter just ended, an increase of 14.6% over the comparable quarter in 1991. Profits were flat at $714 million per share. According to William Milton Jr., an analyst at Brown Brothers Harriman, the company faces continued pressure on margins due to severe price competition.

NewWave 4.0: Powerful but slow

With Release 4.0, Hewlett-Packard Co. has repositioned NewWave as an object-oriented shell for Microsoft Corp.'s Windows environment. Reviewers found the new version to be very powerful and said learning NewWave's innovative interface requires a lot of time and effort.

Ease of use: NewWave shelters the user almost completely from standard Windows operations. Icons on the desktop represent tools or objects, rather than applications. Reviewers said the learning curve for this unique shell is very steep.

Speed: NewWave is fairly slow and resource-intensive, requiring about 8M bytes of hard disk space.

File management: Reviewers lauded the drag-and-drop file management capabilities.

Utilities: NewWave's features include a convenient finder for locating files and the Agent facility to automate tasks. The program does not provide utilities such as backup.

Overall value: The benefits of NewWave ($149) are smooth, visual file management, document management for groups and automation of system functions. Experienced users can benefit from the complex Agent macro language, and networked users will gain from the document management features.
Interface, flexibility sell user on Beyond Mail for Windows

BY ROSEMARY HAMILTON CW STAFF

OVERLAND PARK, Kan. — North American Salt Co. recently picked Beyond, Inc.'s Beyond Mail for Windows as its corporate electronic-mail package, and it will soon begin installing it across its enterprise.

The firm selected Beyond Mail, which is far from a mainstream product today, because its messaging functions were comparable to the top sellers, such as Lotus Development Corp.'s CC:Mail and Microsoft Corp.'s Mail, said Michael Borbely, manager of networking and microcomputing at North American Salt. But, more importantly, it has a superior user interface and allows users to create customized workgroup applications, Borbely said.

Beyond began shipment of its Windows package earlier this month. In addition to basic E-mail features, the software allows users to include applications on the Beyond Mail platform that use its rules and forms technology. Users can also create work-flow and routing applications that include automatic-mail functions.

North American Salt is a privately held company that owns several salt and chemical businesses. It had revenue of about $600 million last year, Borbely said. Approximately 3,000 people work for the various North American Salt businesses.

“We came into this [E-mail selection] project with some very short and simple, but important, needs,” Borbely said. “Beyond Mail provides the basics, and then there is a rules-based engine that walks over the rest of them,” he said, referring to competitors’ offerings.

North American Salt is working on some test applications that Borbely said will allow his group to write applications that boost the work-flow process, which they could not do with other E-mail packages.

Future applications

Borbely’s group plans to write a Beyond Mail application that will automate the financial reporting process, which currently calls for plant managers to submit Lotus 1-2-3 spreadsheets each quarter. The Beyond Mail application is intended to automate the spreadsheet routing and consolidation process. It will also include triggers that will alert plant managers to send their spreadsheet data via Beyond Mail to headquarters. A Beyond Mail application will compile the data, and the tool will then automatically route a summary report to managers.

For now, however, the focus is to provide E-mail training to users, many of whom have not used E-mail before, Borbely said.

“We will start at the executive level and then let it rain down through the ranks,” he added. “We are sizing up our needs now to take it enterprise-wide. Our initial implementation will be for no more than 1,000 users,” he said.

Navy uses ESP to cut costs

New personnel system may become model for other federal agencies

BY GARY H. ANTHEIS CW STAFF

ARLINGTON, Va. — The federal government gets plenty of criticism for botched system development projects, but occasionally Uncle Sam hits a home run. A personnel system developed in-house by the U.S. Navy appears to be such a winner.

The Electronic System for Personnel (ESP) substitutes electrons for the 55 tons of paper annually that were previously used to find, hire, transfer and promote civilian Navy employees. In addition to cutting costs and boosting productivity, ESP has fundamentally improved the relationship between the Navy’s Human Resource Office here and the users it serves.

The original objectives for the system were the classic ones: to reduce manual effort, eliminate errors, speed processing and trim costs. But ESP has produced an important side benefit, according to Michael F. Marchesani, director of the Human Resource Office.

“Now managers don’t call us with questions like, ‘Where is my request to hire a secretary?’ They can dial in and find that out for themselves,” he explained.

Continued on page 64
People have always b

together. Unfo
computing envir

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The good news, however, is there's a solution. Lotus Notes' software. A breakthrough technology that's helping organizations overcome the technological roadblocks found in most mixed computing environments, which often stop good ideas from ever going anywhere.

You see, Lotus Notes is a flexible workgroup computing environment that signals a better way for end users to work together...while giving IT and MIS professionals a better way to more effectively leverage their company's existing hardware, software and network investments.

Let's face it. Many companies have spent fortunes on technology over the years and have begun to wonder just how well it's paid off. With Notes, the benefits are immediate. Companies can finally begin connecting people and ideas for more informed decisions. Regardless of group size, location or network configuration.

What's more, Notes is an extremely flexible environment that makes the development and deployment of all kinds of custom applications a relatively quick and easy process. Some typical applications include lead tracking, product planning, brainstorming, account management, reference libraries, call reporting, quality management and more. There are small and large

How People Are Using Lotus Notes

- Strategic Planning
- Sales Management
- Industry News
- Customer Service Tracking
- Forms Routing
- Quality Management
- Contract Library
- Correspondence Tracking
- User Group Discussions
- Project Management
- Sales Presentations
- Policy Handbook
- Electronic Mail
- Financial Profiles
- Telemarketing
- Technical Support
- Job Postings
- Credit and Collections

companies, in fact, that have bought Notes to solve a specific problem, only to discover that it answered other needs as well.

Lotus Notes runs on the most popular networks (Novell, IBM, Microsoft, Banyan and DEC). And,

Lotus Notes is an innovative workgroup computing environment designed to increase
been open to working
fortunately, their
comments haven't.

in Windows" and OS/2. Just as we've
done with our 1-2-3" spreadsheet, we'll
soon have Notes running on all major
platforms, including Macintosh" and
UNIX." Again the objective is to pro-
vide users with a seamless way of
working together whether they're in
the office or on the road. No matter
what platform they use.

There's even more good news. You can
get started with Notes for less than $500 per
user. In fact, when companies looking into
Notes realize how much they can improve their
productivity without major expenditures of
time and money, their decision becomes a
whole lot easier.

So, if you're waiting for the light to turn
green, why wait any longer? Just call us at
1-800-872-3387, ext. 6709. We'll help you
get things moving right away.

Lotus Notes
For the Notes Seminar nearest you,
call 1-800-828-0541.

your organization's productivity.
Faximum, HP unite

BY MARYFRAN JOHNSON

Fourth in a series on reports on Computerworld's own migration to a Unix-based client/server system.

"All stressed up and no one to blame." That slogan has been appearing on T-shirts in novelty stores this year, and Computerworld could probably use a case of them about now.

Overshadowing the normal stress of news deadline pressures are a host of troubles with our own $850,000 "right sizing" project, which is taking the publication from a proprietary to a Unix-based publishing system that runs on IBM hardware.

Staff members involved in the conversion effort have been struggling with overdue hardware shipments, inexplicable software bugs, networking snafus, troubles with backup printing facilities and, most recently, escalating pressure from top management to "get a move on!

"I don't know what would be involved with this," said Jay Laberis, editor in chief of Computerworld. "No one tells you.

Fueled to the fire
Further complicating matters are some upcoming special projects that cannot be accomplished if Atex, Inc.'s new Workgroup Publishing System software is not up and running smoothly by mid-October. "We are under an extremely tight, extremely aggressive ramp-up schedule," said Catherine Gagnon, chief copy editor and a primary candidate for one of those T-shirts.

The appearance two weeks ago of a mysterious system-crashing bug was all the more maddening for the information systems department and the eight-member copydesk. The bug freezes the screen and forces a reboot of the system, costing any changes being stored and saved. No one has been able to determine if the problem is the fault of the Atex application or Microsoft Corp.'s Windows 3.1 graphical user interface. Atex said this would be a stable product, Laberis said. "But when you talk to users, they don't think it's stable. They're finding it extremely buggy.

The ultimate gain from all this pain, however, should be faster, more flexible production of the newspaper, Laberis noted. Computerworld currently runs a proprietary version of the Atex publishing system on aging PDP-11 minicomputers from Digital Equipment Corp.

The client/server system will be anchored by two IBM Personal System/6000 workstations that will work in concert to run the Atex publishing software and to provide mirrored backup and redundancy.

Hanging off the RS/6000 workstations will be a network of 50 IBM Personal System/2s and personal computer clones on writers' and copy editors' desks.

As one of the first sites to install Atex's new Unix-based system, Computerworld has demanded and received a high level of attention from the vendor. Complaints about support last spring led to the assignment of a full-time Atex employee for the project.

Under the initial plan — which looks wistfully optimistic now that everything is months behind schedule — the Computerworld copydesk was to be converted to the new system by mid-October. By January, all of the writers and editors should have joined the copydesk on the new system.

The first RS/6000 has been installed, and the second is due in early September. Any shipping delay for the RS/6000 could have serious consequences for the mid-October deadline. "Almost everything from IBM has been two to four weeks late," said Linda Nelson, Computerworld's IS director. "It's been a disaster for us.

Another obstacle is the office politics version of "Too many cooks spoil the broth." "We are completely re-engineering how we produce our pages, and that introduces the possibility that politics can get involved," Nelson said. She recently began distributing a detailed report on the project each Friday afternoon to a host of managers from both the production and editorial sides of the company and to key vendors.

What about backup? Another pragmatic concern is backup — in this case, a software problem at the backup facility for Perry Printing Corp. in Madison, Wis.

Computerworld is also coping with staff shortages. The systems department recently lost its No. 2 person, and the copydesk has been searching for another editor familiar with Atex software. Out of 300 resumes received, only one listed Atex experience.

Saber Menus, System debuts

Saber Software, Inc., a Dallas-based maker of local-area networking utilities, is shipping Version 2.0 of its Saber Menu System for IBM's Personal Server.

The new icon-based version runs under Windows 3.0 and 3.1 and was designed to simplify LAN/Windows management and administration. It boasts an iMac utility, which gives LAN administrators the power to control and automate management of users' .INI files.

"We are completely re-engineering how we produce our pages, and that introduces the possibility that politics can get involved," Nelson said. She recently began distributing a detailed report on the project each Friday afternoon to a host of managers from both the production and editorial sides of the company and to key vendors.

LAN-to-host product ships

Digital Communications Associates, Inc. (DCA) in Alpharetta, Ga., said it is adding support for TN 3270 over Novell, Inc.'s NetWare for IBM's Systems Application Architecture (SAA) and Transmission Control Protocol/Internet Protocol (TCP/IP) to its micro-to-mainframe connectivity products.

TN 3270 is industry-standard terminal emulation software that allows users to access IBM hosts without going through an IBM server. The new support will allow users of DCA's Iris Workstation for DOS, Iris Workstation for Windows and Iris Workstation for Macintosh to access mainframes through non-DCA gateway products, such as NetWare for SAA or a TCP/IP gateway.

According to DCA, NetWare for SAA will be included in the Iris Workstation for Windows, DOS and Macintosh near year's end. TN 3270 support will be added in the Iris Workstation for Windows Workstation products by the end of next year.

MICHELLE DOSTERT

AUGUST 24, 1992
Mixing computers and art has always raised some eyebrows, with many artists turning a thumbs-down on computer-generated works of art. But nobody can argue with the idea of creating a network to help art dealers better sell art created by humans.

Joe Sigel, the founder and chief executive officer of the Art Research and Trading Cooperative (Art Co-op) in Santa Fe, N.M., has harnessed together four personal computers, voice recognition software and fax and modem boards to create an on-line clearinghouse that lets dealers buy and sell limited-edition serigraphs and the like without spending a day on the phone.

"What's most unique is that we have been able to merge database technology with voice response and fax technology," Sigel said.

**Hybrid system**

The system runs on networked 386- and 486-based PCs. Two 24-port PCs run the voice response system, which encompasses Easy call-processing software from Expert Systems in Atlanta and voice boards from Dialogic Corp. in Parsippany, N.J. The third machine houses the fax engine, which is also from Dialogic, while the fourth PC contains the database itself, which is FoxPro, Inc.'s product. Sigel said the setup is a mixture of DOS and Unix because the fax boards are Unix-based.

Sigel, who deals in the secondary art market, said he first came up with the idea for the system as a reaction to the time-consuming phone calls he had to make looking for a specific work of art. As the phone calls rippled outward, the price of a work of art also tended to go up, as one dealer after another tacked on a commission once the work was found.

With Art Co-op, a dealer dials into the system and punches in a personal identification number and a member number. Each work of art in the database — currently about 16,000 titles — has its own identifying number. Using the phone and voice response technology, the caller can search for a specific work of art by title and author. A caller can check the latest trading price of a piece as well as receive a list of all the available titles by that artist. If a dealer decides he wants to buy a piece, it is as simple as pressing "1" on the telephone, Sigel said.

"Once somebody buys, the dealer sends the artwork to us within 48 hours. We inspect it and send it on out," he said.

Art Co-op acts as a clearinghouse for the deal. It forwards the invoice and purchase order to the respective parties and certifies the work and the funds. The co-op deals in limited-edition prints, serigraphs, photographs and cast sculptures and collects a 10% commission for its pains.

However, Sigel pointed out that with purchasing and selling concentrated in one clearinghouse, the possibility for multiple commissions is nil. The dealer also saves time by working with one entity rather than creating a daisy chain of dealer inquiries.

Running since late last month, the co-op currently has about 1,000 U.S. art gallery dealers and 400 Japanese partners. Membership is free — the company makes its money on commission. Sigel said the network is not totally up to speed. "We're still inputting inventory," he said, adding that it should be complete in about three to four months.

Sigel said he originally planned the network to be computer accessible, "but I found that many gallery owners don't use computers. This allows the user an easier way of accessing the database," he said. He added that he is looking to add in PC access capability as the network matures.

Art Co-op's PC-based network helps dealers sell artwork such as 'Jelly Bean Seeds,' pictured here.
This PS/2 SLC is so fast, it comes with its own speeding ticket.

With our advanced SLC processor, the PS/2 Models 56 and 57 are clearly on a fast track. They’re already the fastest systems in their class.* And with this special IBM PS/2 486SLC2 Processor Upgrade, we plan to keep them that way.

Buy a PS/2 Model 56 or 57 SLC before October 1, 1992, and you’ll get information on how to upgrade to our powerful 486SLC2 processor at a special low price of $259!**

486SLC2 Power for $259**

OS/2® 2.0 comes pre-installed on both models, so you can run DOS, Windows™ and OS/2 applications. And every PS/2 comes with HelpWare™, a full range of services and support including a toll-free number.

The PS/2 Models 56 and 57 offer so much, other computers might as well hit the road. For more information about our specially priced 486SLC2 upgrade or for the IBM authorized dealer near you, call our HelpCenter™ at 1 800 PS2-2227.

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- To learn more about our 486SLC2 upgrade, call 1 800 PS2-2227.
When a major health insurer suddenly doubled its customer base, their MIS department quickly predicted disaster. The company's in-house document publishing system was already overloaded. They had to drastically cut the time it took to produce vital documents or risk the company's reputation for customer service. That's when they called Lynn Wells and the Xerox team.

Working together, they saw that merely upgrading equipment to add capacity was not the solution. So they took a fresh approach and completely redesigned the company's document publishing processes. Carefully building on existing systems, they integrated Xerox workstations, software, scanners and laser printers to create a custom publishing network.

Benefit booklets that once took forty-five days to publish now take less than five, a 900% increase in productivity. MICR-encoded checks and claims explanations are being printed and mailed together, saving $350,000 a year in postage. And forms are now created electronically, on demand, reducing costs by 30%.

If saving time, money and customers is your idea of a productive partnership, let us help you put it together. Call 1-800-TEAM-XRX, ext. 147G.

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Proprietary LAN managers still prevail

BY ELISABETH HORWITT CW STAFF
FRAMINGHAM, Mass. — Local-area network management is still extremely fragmented and is based primarily on proprietary systems: Users are focusing on tools designed to manage a particular type of LAN, rather than on centralized, integrated LAN management systems, according to recent research.

This state of affairs is expected to change soon as users begin to coordinate management of disparate LANs across the organization, according to a report by International Data Corp. (IDC). Framingham, Mass., market research firm. More than half of the 200 network administrators IDC interviewed said they plan to centralize LAN network management responsibilities.

A major force drawing users to more centralized LAN management is the movement of the LAN industry toward Simple Network Management Protocol (SNMP)-based management. Earlier this year, 3Com Corp. became the first major Ethernet adapter company to announce software that enables its adapters to be managed via an SNMP system (see story at left).

Sniffling out support

Another important development in this area is Network General Corp.'s attempt to move toward full SNMP support on its Sniffer line of LAN analysis tools.

While implementing X.400 at the LAN level is still a major concern, the IRS determined that "we are saving a great deal of money, we have open systems connectivity, and we are conserving staff by not having to build and maintain gateways," said John Davis, chief of the Telecommunications Branch, IRS.

He estimated, for example, that the division will avoid having to add six to 12 support staffers across 12 districts by not installing mail gateways.

In the commercial sector, X.400 on the LAN is not yet common because the standard has a "more complex format that requires more processing power," asserted Brad Friedlander, a senior consultant at Arthur D. Little, Inc. in Cambridge, Mass. Some industry observers also cite a perceived lack of functions in X.400 applications.

API madness

The IRS views its enterprise-wide messaging system as a "regional correspondence management system" that transports mail messages as well as email-enabled documents, spreadsheets, database files and executable programs.

Therefore, the fact that the industry is divided on the issue of mail application programming interfaces (API) has communications specialist Stephen Foley worried.

"We're into mail-enabled applications, and my one fear is that we won't get a standard API," he said.

Standard mail APIs — or common hooks sitting on top of mail engines — would allow programmers to develop one set of applications that users could run over any mail engine.

There has been some recent movement toward convergence of some basic functionality between different vendor-backed API specs. The convergence is being spearheaded by the X.400 Application Programming Interface Association.

Basically, however, "groupware is a nightmare. It's tied to E-mail, which is tied to a vendor, which is tied to a proprietary API. Running groupware over four or five different mail systems is driving everyone nuts," Foley said. "I'd like [the different API camps] to agree on one spec. Then I'd like to go to OS/2 and have them sell me that API."
on Real-time services in the financial sector helped on-line service sales grow by 61.1%, to $8.56 billion in revenue between 1987 and 1991, according to a recent report by Simba Information, Inc. in Wilton, Conn.

"Online Services: 1992 Review, Trends and Forecast" found that half the industry's sales came from real-time systems for the financial community; on-line brokerage information services alone accounted for 48% of industry sales.

Consumer-oriented services such as CompuServe and Prodigy, while the fastest growing component of the industry, accounted for only 4% of revenues in 1991.

Clobbered by recession
"The biggest surprise was how bad a year 1991 was," said Simba analyst Chris Ewell, who noted that the recession dampened the use of on-line services for things such as credit checks and tax-filing services.

More broadly, however, Ewell said business applications for on-line information networks are mature and may be saturated. "We're seeing growth rates just a bit higher than the rate of inflation" in this market, he said.

The hope for the on-line industry, Ewell continued, is the great and largely untapped consumer market. Simba predicts that on-line consumer services will grow 1145%, and sales industrywide will grow 48% to $14.2 billion during the next five years. But to track the consumer market, on-line providers will have to improve the presentation of their user interfaces, making them more intuitive and graphical.

A limiting factor, Ewell said, is the network infrastructure, which at present lacks the bandwidth needed to offer images and graphics comparable in quality to that most pervasive of all consumer information media: television.

As on-line industry revenue increases, so does the number of on-line subscribers. The Simba report found that leading on-line services finished 1991 with nearly 5.4 million subscribers, an increase of 18% compared with year-end 1990.

Meanwhile, the number of data adapters and databases rose from 120 and 4,869, respectively, according to the Simba report.

Best of both worlds
The product is intended to blend the SLIP economies of networking over phone lines "with the reliability of the X.25 protocol," said Peter Shaw, company president.

Beyond, Inc., CC:Mail, Inc. and Eagle Technology Corp. are the other two leaders in X.400-related software, said Simon Hesse, leader of the IRS' Southeast region.

The IRS chose X.400 instead of the X.25 protocol because "we feel we're getting about 98% of those systems' features," said Foley. In addition, he noted, many proprietary LAN mail functions disappear once a message has been contained in a gateway and is shipped to another network.

The IRS keeps that in mind, as the only way that accessibility to all other X.400-listed users, he said.

San Diego-based AGE Logic, a maker of personal computer X server software, is considering licensing Super-PPP to bundle into its software, which allows users to access multiple hosts simultaneously on a PC screen, said Peter Shaw, company president, AGE Logic's X server software is Windows-based.

Ray Langford, a technical consultant of the Microsoft Windows version is that users cannot run applications locally because of the non-client/server nature of Windows. This means users must tax host resources to run applications remotely instead. The limitation, however, has to do with the Windows operating environment, not the product itself.

The $95 Super-PPP can also function as a low-end IP router if the user has a dedicated X card, Langford said. The soft-ware is slated for availability next month.

Remote users get TCP/IP sans LAN
MEQuon, Wis. — The industry forged ahead with delivering networking capabilities to the remote users recently when Frontier Technologies Corp. rolled out software said to bring full Transmission Control Protocol/Internet Protocol (TCP/IP) networking to far-flung desktops over telephone lines.

The company's product, dubbed Super-PPP, is software that is layered over the Micro-soft Corp. Windows operating environment and Frontier's TCP/IP or X.25 industry Open Systems Interconntect communications protocols.

This bestows on users TCP/IP functions such as terminal emulation, file transfer, printing and Simple Network Management Protocol (SNMP) over serial lines via the industry-standard Point-to-Point Protocol (PPP) without the user's having to be on a local-area network, the vendor explained.

PPP adds error correction, retransmission and security to the older Serial Line Interface Protocol (SLIP) for remote TCP/IP networking, observers noted.

CONTINUED FROM PAGE 69

adapters and NetWare 386 serv- ers v3.11 or higher. A feature-rich on-line package is said to interact with any network management system that conforms to the SNMP Management Informa- tion Base II standard. These in- clude Sun Microsystems Corp.'s SunNet Manager, 3Com's Iso- view and HP's OpenView Net- work Node Manager.

IRS chooses X.400 as mail package
Multitasking RAID for supercomputers debuts

BY JEAN S. BOZMAN
CW STAFF

SAN JOSE, Calif. — Maximum Strategy, Inc., a small Silicon Valley firm that has been building redundant arrays of inexpensive disk (RAID) systems since 1987, last week announced a multitasking RAID system for supercomputers and parallel processors.

The new RAID drive will go to beta-test sites this month, and general shipments are to begin in September, the firm said.

The firm's new Gen 4 product can handle RAID-1, RAID-3 and RAID-5 functions simultaneously on different disk regions. That way, disks can be set aside for RAID-1 mirroring, RAID-3 high-performance or RAID-5 error-recovery features.

"You can dedicate a set of disks to operate in one RAID mode or the other," said Omri Serlin, president of Maximum's Gen 4 RAID device since February, has had little problem with reliability since the product was installed.

"Even when our large supercomputers had [operational] problems, the Maximum Strategy box kept going like a soldier," said Roy Williams, senior staff scientist at CalTech's Concurrent Supercomputing Facilities.

Small and proud

Maximum Strategy was privately funded and grew by sales of its high-end peripherals to large systems vendors such as IBM, said Gary Smaby, principal at the Smaby Group in Minneapolis.

"They are a bootstrapped organization and proud of it. They've done it all on their own."

The 30-person firm designs RAID controllers — but does not build them — and then packages the controller with disk drives from other vendors.

Although prices for the RAID devices seem high, they are priced to be less expensive than those sold by supercomputer vendors, Smaby said.

"It is definitely an impressive technology, but it is still aimed at a limited market," Smaby noted.

Manufacturers turn to imaging

On-line engineering documents spell efficiencies for companies

ANALYSIS

BY ELLIS BOOKER
CW STAFF

Speed to market, fewer mistakes and the ability to adapt products quickly are some of the reasons a handful of manufacturers have begun installing electronic document imaging systems.

In addition to conventional applications of imaging in their clerical departments, manufacturers are using imaging as a tool for routing drawings and technical documentation among designers, engineers and the factory floor. For one aircraft maker, this has reduced the time needed to process drawings from as much as eight days to only 12 hours.

According to BBS Strategic Decisions in Norwell, Mass., the manufacturing sector (comprising both discrete and process manufacturing as well as pharmaceuticals) accounted for $228 million of the $1.9 billion imaging market last year. But that share should grow.

The research firm predicted that manufacturers will represent $358 million of the $2.35 billion imaging marketplace in 1992.

Like imaging users in commercial settings such as banking and insurance, manufacturers are looking to imaging as a way to control, streamline and automate the flow of records.

At The Boeing Co.'s Commercial Airplane Group, for instance, an imaging subsystem known as Reference Engineered Data Interface backbone network connecting some 200 San Microsystems, Inc. workstations, Boeing's system has more than 1T byte of information on 140 optical discs. The database includes more than 3 million graphics images created by Boeing's computer-aided design (CAD) system.

In the past, these CAD images would have been output to microfilm and pasted onto so-called "aperture cards." This required a staff of 100 people to sort, file and fetch the cards. Another 10 million to 12 million obsolete aperture cards are stored in the paper files.

"We've also reduced the amount of time it takes to get a..."
Manufacturers using imaging for documents

CONTINUED FROM PAGE 71

of the unique requirements of imaging in manufacturing: graphics and interfaces to CAD systems.

While banks, insurance companies and other commercial imaging sites have some need for graphics, notably for signature display and verification, a significantly larger percentage of the paperwork at a manufacturing company is devoted to technical drawings and schematics. REDARS, for instance, not only imports and exports data to a port and document "accountability" system, but it also works with Boeing's CAD system.

According to some analysts, creating these CAD-to-imaging interfaces can be tricky because the graphics in imaging systems and CAD systems use vector graphics.

On the other hand, some manufacturers have found the process worth the work because the imaging system becomes a kind of common denominator for incompatible CAD systems.

This has been one of the benefits of the Apple Document Management and Control System (ADMACS), Apple Computer, Inc.'s 18-month-old global imaging system. ADMACS provides on-line access to more than 120,000 pages of drawings and product documentation (see story at right).

At Apple and other manufacturers, imaging coupled with document management and workflow software have also virtually eliminated the problem of building a part based on a design that has been modified and is no longer the current version.

The Gillette Co.'s North Atlantic Group is using an imaging system from Cimage Corp. in Ann Arbor, Mich., to store what will total more than 100,000 technical documents by year's end.

Like many manufacturers, Gillette has maintained vast libraries of microfilm aperture cards to hold its technical documentation.

"It was a nightmare controlling these documents; we were drowning in a sea of paper," said John Ryan, manager of project management and implementation at Gillette.

A final section of imaging in manufacturing relates to customer support.

Last year, Knoxville, Tenn.-based Whirlpool Corp. installed an imaging system from Online Computer Systems, Inc. in Germantown, Md. The imaging system provides customer service agents with access to two decades worth of service and product manuals [CW, Oct. 28, 1991].

In a recent member survey by the Association for Information and Image Management, 56% of the manufacturers responding said they were using imaging today; another 29% said they were investigating imaging.

Hughes Electronics Space and Communications Division

El Segundo, Calif.

- Challenge: To put integrated computing power into the hands of designers, shop floor workers and business managers.

- Technology: Hewlett-Packard HP 9000 Unix systems, 800 PCs and Cambridge Technology Partners software that ties together information from diverse operations.

- Goal: To reduce from one week to only seconds the time it takes to gather information from varied sources.

Hughes will not necessarily choose the HP 9000 every time. "It'll all boil down to price and performance," Osborn said. "We're right now benchmarking Sun to see if it could perform equal to or better than HP."

One consideration is what software is available for each platform. In the MRP evaluation, the company has decided to use Computer Associates International, Inc.'s CASE tool, which recently announced its migration to HP's HP/UX operating system — CA's first large system Unix port.

But, according to Osborn, CA also plans to make the program available for Sun and is very much in the running for the MRP job.

If Osborn and his staff are caught up in Unix fever, they have apparently not been completely swept away. Osborn noted that the company will continue to use a 390-based mainframe for financial programs that provide information on labor costs, purchase rates and subcontract conditions.

Osborn's reasoning on the financial program may be no more complicated than his hands are tied. His division shares the 390-based financial information with other Hughes divisions from the parent's mainframe.

"It's a corporate system, so I doubt I'll be coming off it," Osborn said.

When Jackie Streeter joined Apple Computer, the company built one kind of Macintosh.

When that changed and Apple began falling out its Macintosh line, Streeter, manager of worldwide product configuration management, began looking at alternatives to the paper-based system for tracking and exchanging engineering documents.

The result was ADMACS, or Apple Document Management and Control System.

With its core software from Alpheral, Inc. in Cameron, Calif., and system integration services from Electronic Data Systems Corp., ADMACS was piloted 18 months ago; for the past year, it has been the official repository for some 120,000 Apple engineering documents.

Aside from substantial productivity gains, Apple has used ADMACS as a common window onto its diverse CAD systems.

Instead of arming each employee who needs access to the on-line drawings with "a $40,000 to $50,000 workstation, each loaded with $20,000 to $30,000 worth of CAD software," Apple viewing Macintosh as the client for the imaging system, according to Tom Minick, director of information systems at the Apple Product Division.

About 600 employees have access to ADMACS today. The ADMACS host is a Digital Equipment Corp. VAX in Napa, Calif.

But Minick noted that because Apple elected to use the Macintosh — typically, a 4-Mbyte machine running Apple's System 7.0 operating system — and send the images across the corporate Transmission Control Protocol/Internet Protocol network, access to the engineering documents is theoretically available from every employee's desktop.

Before ADMACS, turnaround time for design changes could be as much as 25 days, with diagrams on microfilm frequently shipped back and forth to Apple's manufacturing sites worldwide. Today, turnaround is 32 days and dropping.

"Some changes are down to one day," Streeter said.

Streeter stressed that in addition to imaging, the ADMACS project was taken as an opportunity to redesign many business processes at Apple, resulting in even more efficiency.

In fact, that standardization of processes helped win Apple ISO/9000 certification on its first attempt — a rare feat. A European Economic Community business license, ISO/9000 mandates standardized business procedures.

ELLIS BOOKER
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Database management

Management Information Technology, Inc. has started shipping an enhanced version of DBAMaster.

DBAMaster 2.0 was designed as a four-function, automated monitoring and tuning device that lets Oracle Corp.'s database users detect and avoid potential system-crippling problems.

New features in this release include remote monitoring and multidatabase support, reduced storage requirements, tuning of the Oracle Parallel Server and support for Oracle Version 6.2. Row-level and chaining analysis, production reports with full table scan and monitoring over SQLNet are other new features.

Pricing begins at $2,500.
Management Information Technology
2895 Temple Ave.
Long Beach, Calif. 90806
(310) 424-4399

BrownStone Solutions, Inc. has enhanced Version 5.0 of its DataDictionary/Solution. Enhancements include Scripting, Forms Facility and DDSMail. According to the company, Scripting offers users the ability to automate complicated dictionary tasks such as restructuring DB2 tables. Forms Facility provides external layouts that display a user view of a data dictionary without altering the underlying object definition. Users can send messages and receive results of automated operations via DDSMail.

Prices start at $60,000.
BrownStone Solutions
295 Madison Ave.
New York, N.Y. 10017
(212) 370-7160

Data storage

Ten X Technology, Inc. has developed the OptiChanger 28, a five-cartridge drive optical subsystem. OptiChanger 28 uses 12-in., 5.6G-byte write-once read-many cartridges, which provides Sun Microsystems, Inc. Scalable Processor Architecture II users access to a minimum of 28G bytes of permanent data storage. OptiChanger 28 includes simultaneous access to both disk sides, fast disk spin up, spin down and disk exchange times. The product does not require software drivers, and it features hardware data compression and 128K bytes of nonvolatile static random-access memory for enhanced cache buffering.

OptiChanger costs $39,950.
Ten X Technology
Suite 3200
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(513) 346-8360

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Call them application development centers, application enabling centers or technology centers. Whatever the name, they provide their organizations with evaluations, guidance and implementations of "bleeding-edge" development tools and methodologies.

But this basic role in the information systems organization and in the company as a whole poses some challenging management problems. Chartered with examining such diverse concerns as strategic planning, joint application development, system planning, data modeling and everything in-between, application development centers often cannot implement the tools and methods they have discovered.

According to Jerry Weinberg, a Lincoln, Neb.-based consultant on IS and organizational change, "For every 100 application development centers, 75 know what to do, and only 10 actually get the organization to do it."

Historically, application development centers have suffered from the problem of having a clear mandate to explore and evaluate advanced technology but little means or capacity to implement it in their companies.

At Texaco USA in Houston, an early attempt to create an application development center resulted in a "failure to implement because there was no mandate to do so," said Wade Viali, manager of the company's IS Enabling Center.

Even where there is a mandate to implement new tools and technologies, application development centers often meet substantial roadblocks from program managers and other IS staff.

The problem, Weinberg says, is "an emotional issue, not a technical issue."

**Internal battle**

According to Viali, "The initial clash was ferocious because development center people are very technical and perfectionists." The interests of these champions of leading-edge technology were conflated with programmers, who have a vested interest in the status quo, he said.

To solve the problem, Texaco placed Viali in charge of its application development and development center organizations. "I have some idea of where I'm going, and I'm not afraid of ruffling feathers or stepping on toes," he said. "That motivates them."

Most development center managers agreed that the vision of a leader was critical to the center's success. "The most important thing is to allow [staffers] to go out on their own, but with a vision of the way things should be," said Ron Guaitleri, a computer scientist and development center leader at EG&G Florida, Inc., a NASA contractor at Kennedy Space Center in Florida.

Guaitleri also made sure his team was recognized internally through regular participation in a company newsletter and other public relations efforts, such as training members of the computer center in new technologies and keeping them posted on "our strategic direction over the next five years," he said.

Cautious and busy "What we're trying to do is to increase morale and the ability of the staff to get things done," said Dennis Farley, president of the Development Center Institute, Inc., and development center manager at Ameritech Services in Indianapolis.

Using research from Zawacki and Associates, a Colorado Springs consultancy that has profiled a number of application development centers, Farley has been giving staffers more feedback and has been "structuring their jobs so that there aren't so many distractions," he said.

Robert Zawacki, principal of the Colorado firm, said in his recent study of application development centers that staff members should be given more feedback and autonomy in their jobs. They also need to see the "wholeness of the project" and its relevance to the organization in order to be effective, he said.

**Cardinal rules**

Key steps in motivating the application development center staff:

- **Create development center teams that have a mixture of those who initiate and those who respond to new ideas.**
- **Close the loop.** Structure development center positions to include general and specific, goal-directed feedback.
- **Provide more autonomy.** Set goals, give deadlines, and then back off.
- **Increase skill variety.** Development center staff members are learners and should have a forum to explore new ideas and technologies.
- **Increase task identity.** The wholeness or completeness of the project — by allowing staffers to visit user and staff meetings.
- **Increase task significance.** Reinforce the importance of the application development center by allowing personnel to give status reports and presentations.

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For Sequent, the agreement is part of an effort to expand beyond its specialty markets, such as financial and scientific processing, into more mainstream commercial computing.

Sequent, also based in Beaverton, will sell Symmetry 2000 systems bundled with IEF by the end of this year. However, the IEF Codebase and Environ language may be necessary for large-scale CASE projects, is not scheduled for release until early next year.
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(Until you have a more effective means of business communication up and running, the telephone will have to do.)
Apple rolls out tool upgrades

BY JAMES DAILY

CUPERTINO, Calif. — Apple Computer, Inc. recently unveiled a platter of programming tools that include refreshed versions of MacApp, the Macintosh Programmer’s Workshop (MPW) and MacAppC++. MacApp 3.0 is the latest version of Apple’s object-oriented application framework and class library for Macintosh programmers. It equips developers with the objects needed to program standard elements of Macintosh applications such as scroll bars, multiple windows, printing, cut and paste, undo and more.

Version 3.0 adds System 7.0 support and a new version of the MacBrowse source code browser/editor and the View/Edit interface building tools. It will be available for $395 on disks and $350 on compact disc/read-only memory (CD-ROM). MacAppC++ Upgrades cost $250 and $200 on disk and CD-ROM, respectively.

Full of features
MPW Version 3.2.3 updates Apple’s professional software development environment. It provides a foundation on which to create applications with features such as multimedia editor, integrated compilers and tools, a full scripting language, a source-code control system and the ability to link together code written in multiple languages.

Version 3.2.3 adds tool performance improvements, command reference features and compatibility for Apple’s high-end Macintosh Quadra. The upper graded development environment will sell for $150. An update will cost $25.

MacAppC++ Version 3.2 is an object-oriented C++ to C+ translator, designed to work with MacApp and MPW. MacAppC++ Development Environment. Apple has enhanced C++ to support the Macintosh Toolbox and operating system, object-based functions and procedures. It will sell for $175, and an upgrade will cost $75.

The tools will be available through Apple’s Reseller’s Apple’s Source for developer’s tools, both as stand-alone objects and on the E.T.O. No. 8 Essentials. Tools, Objects, CD-ROM, a CD-ROM based quarterly of Apple’s software development tools. Site licenses and bundled applications are also available.

Micro Focus has released Version 3.0 of Micro Focus Assembler with Animator/370. The Animator/370 is an advanced debugging tool that lets users analyze programs during execution. The company said the package lets users debug and follow mainframe users to use a personal computer to support stand-alone object-coding Cobol programs housing Dynamic Calls to assembler.

New features include Animator/370, On-Line Help and extended file handling.

Part of the Animator/370 is the Helper/370 facility, an on-line description of the 370 instruction set. The extended file handling allows users to add file processing capabilities and has a define-cluster option.

Program development costs $1,250.

Micro Focus
200 Hasee Road
Palo Alto, Calif. 94303
(415) 856-4161

SmartStar Corp. has released Version 6.1 of SmartStar VMS, a VAX/VMS application development environment. SmartStar VMS now offers support for the Think Co.’s relational database management system.

According to the company, enhancements have been made to the SmartStar Logical Database base for homogeneous database access. When the product is used in conjunction with an optional SmartDistributor component, users can simultaneously access a variety of database types. Features such as pop-up windows, pull-down menus and an OSF/ Motif-like windowing interface are included.

Prices range from $2,000 to $14,000.

SmartStar
1205 Monterey Drive
Goleta, Calif. 93116
(805) 685-8000

COMMENTS

Martin Healey

Options to ponder when downsizing

The unavoidable problem with downsizing is that the new system is different from the old one. The new computer should be state-of-the-art technology, not invested-beneath among users as bad, if not worse, than among programmers. It is reasonable to expect some changes to business practices to fit the package if they are not radical.

Handle with care
A package is a building kit and should be treated in-house staff as well as the high-level language. It needs configuration and all the training and management procedures must be effectively implemented. The package will probably only achieve 80% of the requirements — the other 20% must be provided by specifically developed code.

But never modify the package code, or else future releases will cause trouble. And never accept a package for which the data structures are not fully specified and available for new programs. Avoid packages written in C or Basic unless an alternative cannot be found.

Packages offer a share of accumulated knowledge about applications and there is feedback from multiple users. However, the other source of accumulated knowledge is the older systems being replaced.

Therefore, there is a temptation to convert the old programs to run in the new environment.

Code conversion, and the associated JCL and data conversion, is difficult and much more expensive than is often admitted. The problem is that the mainframe provides both batch and teleprocessing services with the same databases.

The batch, however, is optimized to take advantage of sequential processing with data prefetch, sorting and direct-reading. The "downsized" system will be basically time sharing that does not provide any special batch capability or specialized transaction processing monitor.

In all fairness
To be fair, the RDBMS provides all basic services, such as transaction logging, roll-back and forward, etc., but an application system designed for mixed batch and transaction processing will never fit comfortably in a mainly interactive/transaction processing environment. Thus, even if the old code and data can be converted, the new application will be clumsy and will not exploit the technology of the new system. The danger of code conversion is finishing up with the worst of both worlds.

If it is difficult converting from one batch/transaction processing environment to another, conversion to an interactive environment will cause serious problems. Conversion would need to show major cost advantages to win over introducing a packaged solution today.

Healey is a consultant based in Cumber, England.

AUGUST 24, 1992
The new spin-offs

U.S. companies are trying to turn technology investments into cash with start-ups in a hot new field: Computerized distribution logistics

BY JULIA KING

When Jim Reeder joined Commodore Business Machines, Inc. as vice president of customer satisfaction, the West Chester, Pa.-based computer company had a customer service record that ranked it next to last among 25 computer makers, Reeder says. "I used to get a lot of hate mail," he recalls.

Now, a little more than two years after outsourcing its customer service operation to Memphis-based Business Logistics Services, a division of Federal Express Corp., Reeder says Commodore boasts a 99% customer satisfaction record.

"Now I get a lot of letters saying Commodore really knows how to take care of its customers," he says.

Driven by a need to pare costs and focus resources on key business functions, Commodore is typical of the growing number of companies shedding costly functions such as customer support, transportation and inventory management.

Instead, more and more savvy businesses are contracting with a new, fast-growing breed known as third-party logistics providers.

And — surprise — many of the more than 50 new logistics firms are spin-offs of large companies rich in technology assets such as global electronic data interchange (EDI) networks, imaging and barcoding systems, expert systems and computerized inventory management applications.

"Information is the key element to the logistics challenge," says John Williford, president of Menlo Logistics, a Menlo Park, Calif., subsidiary of Consolidated Freightways, Inc.

During the last few years, dozens of large corporations have spun off for-profit logistics units, including Roadway, Inc., Caterpillar, Inc., TNT Transport Group, Inc., Carolina Freight Corp., Ryder Systems, Inc., Airborne Freight Corp., Associated Air Freight, Inc., Kaiser Aluminum Corp. and CSX Corp.

Regardless of their differing roots and services, the spin-offs share a common interest: leveraging hefty technology assets and logistics know-how into new revenue.

"Without information technology, there would be no spin-offs," says Williford.

Technology into dollars

KEY POINTS

- New computerized distribution services focus on tracking shipping, storage and delivery operations. Key targets include computer manufacturers, apparel companies and automakers.

- For IS, spinning off a distribution business often means new, challenging work, including integrating customer and in-house systems.

- AMR and CSX have unveiled a new OS/2-based worldwide logistics information management system aimed at large Fortune 500 companies. Beta testers include Procter & Gamble and DEC. See story page 83.

- Companies that have spun off commercial technology units during the last two decades have enjoyed mixed success. See story page 83.

- FAST FACT: A Northeastern University study estimated that 37% of Fortune 500 companies now employ one or more third-party logistics providers.

QUOTABLE:

"I used to get a lot of hate mail."

Jim Reeder

Commodore Business Machines

Continued on page 82
The new spin-offs

CONTINUED FROM PAGE 81

be no third-party logistics," declares Stephanie Schafenacker, national account manager for customized logistics at North American Van Lines’ High Value Products Division. “Investment in information technology is the cost of entering the logistics business.”

Logical next step

Consultants agree that spinning off a logistics subsidiary is a natural for many companies set up computer services and outsourcing businesses in the 1980s. Many found the going tougher than expected, however (see story page 83). The idea of parylaying technology into cash is nothing new. Dozens of companies set up computer services and outsourcing businesses in the 1980s. Many found the going tougher than expected, however (see story page 83). The new wave of would-be service providers is zooming in on the more profitable business of handling distribution. Key targets include computer manufacturers, apparel companies, automobile makers and others looking to trim costs and improve by outsourcing noncore functions. It could be worth themselves and others. These services include tracking cargo shipments across carriers and through interstate commerce checkpoints, handling customer support functions and managing warehouse and inventory operations.

In turn, these third-party systems are linked to clients’ financial and business applications. This enables customers to track all business processes — from order entry through product delivery and payment — from a single database record.

Cutting edge

Some logistics systems are on the cutting edge of technology. For example, Menlo Logistics, a Menlo Park, Calif., subsidiary of Consolidated Freightways, uses one of the trucking industry’s first networked document imaging systems for tracking freight (see chart above). Last year, this high percentage of computer-to-computer transactions earned Consolidated Freightways an EDI Association award for electronically linking to more of its trading partners than any other U.S. company.

Now, documents generated at the company’s 950 terminals are collected at 48 regional centers where they are fed into scanning machines, then transmitted to a main data center in Portland, Ore., where they are permanently recorded on optical discs.

The new spin-offs share a curious, mixed relationship with corporate IS. Many tapped the IS talent of parent firms to get started, then built their own IS groups once things got rolling. Caterpillar Logistics Services, Inc., for example, customized the heavy equipment maker’s technology, explains Vice President Steve Wanning, who heads the 30-member staff at the unit, which was formed in 1987. “We’ve taken Caterpillar’s technology and reprogrammed it to meet our clients’ needs,” he says. Corporate IS
specialists are called in as needed. Menlo Logistics has consolidated IS at corporate headquarters, according to Williford. This arrangement places 500 IS staffers at his disposal. Some technology — primarily EDI capabilities, imaging and freight tracking — are also imported from Consolidated.

**Starting from scratch**

In contrast, the 80-person IS staff at Business Logistics built the firm’s stand-alone system from the ground up, company President Robert May says. “This is not a case of repackaging existing services,” he says. IS at corporate headquarters is “the traditional systems. Customers can now tap into Consolidated’s full range of support functions, including centralized accounting, warehouse security and IS support.

**Something for all**

Individual services vary. Some third parties provide retailers and manufacturers with remote read-only access to their databases through an Internet interface. Others physically locate both hardware and software as well as personnel on a customer’s premises. Each arrangement requires a unique solution.

“Those are the ones that turn IS into a business operation with a big splash. Earlier this month the company confirmed it has spun off an outsourcing and consulting operation said. ‘And even if they had needed to get much larger to compete needed to get much larger to compete. The old

**AMR and CSX shake hands on logistics deal**

A nyone who doubts that distribution logistics is hot, consider the following: Two of the biggest names in transportation modes and 12 third parties, in- cluding brokers, forwarders and logistics management companies, say that might be on the low side. The old spin-offs

**Why no success?**

The reasons for hard times and failure are many, according to IS managers and consultants (see chart page 84). Beyond a stagnant economy and huge cuts in defense spending, disappointing performance often boils down to the fact that spin-offs know more about technology than about business.

“Very few people running internal ES divisions think like independent business entrepreneurs,” Anderson says. “They’ve been running sheltered workshops for years. They found out that competing in the outside market looks a lot easier from the inside.”

Take Kimberly-Clark, for example. In the 1980s, the paper products maker spun off an outsourcing and consulting operation with a big splash. Earlier this month the company confirmed it has laid off some of its outsourcing/consulting staff and is looking to phase out of the business [CW, Aug. 10].

“They had unrealistic expectations of reaching $100 million in revenue within four years,” a source close to the operation said. “At some point if they had reached that goal, they would have needed to get much larger to compete against the EDSs and IBMs of the world.”

Aerospace/defense contractors, in particular, have also been scaling back Continued on page 84
The old spin-offs: A mixed bag

CONTINUED FROM PAGE 83

or abandoning outside product and service activities. The following are a few examples:

- Boeing Computer Services left the computer services market in 1991 after failing to make much of a dent in that highly competitive niche.

- McDonnell Douglas Systems Integration Co. (MDSI) has sold its entire commercial IS operation piece by piece, says William Jackson, director of computer services. The $400 million unit was sold to Electronic Data Systems Corp. for $199 million in November 1991. MDSI, Jackson explains, "felt it needed cash to return to its core aircraft business."

- For the company's Unigraphics computer-aided design (CAD) software, Jackson says that top MDSI managers were simply unwilling to make needed investments in the product line.

- The end, analysts say that MDSI, like Kimberly-Clark, simply could not create a large outsourcing base to get the economies of scale needed to compete with EDS or IBM. "Information services were viewed as a distraction," Jackson says.

- Black & Decker postponed in May a previously announced public offering of shares for PRC Advanced Systems, citing "current conditions" in the initial public offerings market. Revenue for PRC, Inc., the McLean, Va., IS arm of Black & Decker, was down 1.5%, to $688 million, in 1991.

- TRW announced in December that it would trim several arms of its computer time and network outsourcing services in 1988. Its revenue is roughly half of what the company had hoped for, acknowledges Randall Gamaway, director of information resources, operations and technology.

- It attributes the results to a long learning curve. "We are only just beginning to figure out how to price and market our services," Gamaway says. But FMC, which targets small outsourcing engagements in the Dallas-Fort Worth area, still has hopes that its "home-style" service approach to the commercial market will eventually yield big payoffs.

- Martin Marietta is also hanging on. Last year the company, a Md.-based firm folded its commercial IS business into a Florida-based missiles and electronic group. The move seemed to work: In 1991, the unit reported a modest 2% revenue increase, to about $560 million.

- Large contracts with the U.S. Postal Service and the Department of Housing and Urban Development, a strong defense presence plus a healthy outsourcing business seem to bode well.

- Weyerhaeuser Co., a large lumber company, similarly reports mixed results in its commercial IS program.

In spinning out Weyerhaeuser Information Systems in 1986, the parent company had two aims: diversify its product line and create a management model that would make the systems arm more effective supplier to internal customers.

- Susan Mersereau, formerly vice president of EDS, says Weyerhaeuser still offers commercial disaster recovery services in partnership with systems vendors. But the firm began backing out of the software business a few years ago.

"There was never a strategy to [achieve] a leadership position in software," explains Mersereau, who has been reassigned as a vice president in the total quality program. "Management underestimated what it takes to sustain such a product line. It never succeeded in becoming a core business here."

- Mersereau adds, however, that while the product diversification strategy may not have worked out, Weyerhaeuser did achieve its second key goal.

"We've greatly improved our internal customer focus, and now we understand our cost structure," she says. "Our core processes, project and change management, invoices, and invoicing, had been loose... We streamlined and tightened them up. If [management] had the whole thing to do over, [we'd] do it again."

Mixed results

The majority of companies that have spun out information technology as a strategic business report results that fall somewhere between a smashing success and abject failure.

- While many companies haven't met initial objectives, they have not given up either.

- FMC Corp., a Dallas-based financial services firm, began selling com-
Putting estimates on track

Companies are plagued by poor project cost estimating, a recent study found. What follows are some tips on how to do it right.

BY ALBERT L. LEDERER and JAYESH PRASAD

There is something very scary going on in companies today. Technology cost estimates are missing their marks. And we’re not talking about isolated cases. Our recent study of 115 organizations found that cost estimates for more than three-fourths of the respondents’ major projects were off. In 63% of those instances, companies said the projects came in “significantly” over budget.

The big, widely reported gaffes get all the play — like the $8 million estimate at Allstate Life Insurance Co. that turned into a $100 million system or a state of Oklahoma project estimated at half a million dollars and completed at a cost of $4 million. But the fact that more than half the companies we studied had overruns means that disasters, no matter what their size, are happening quietly but consistently.

“People are being fired, and organizations are outsourcing applications development” in response, says Naomi Lee Bloom, managing partner at Bloom and Wallace, a Fairfax, Va., consulting firm. “Top management is fed up with projects that don’t deliver as promised.”

Skewed cost estimates don’t just damage a project leader’s career aspirations and lighten company coffers. The ramifications go even deeper.

According to survey respondents, cost estimating is used to figure out staff numbers for projects, to control project implementation, to select and schedule projects and to quote charges to users (see story page 87). If there is some fundamental flaw in a company’s cost estimating process, that flaw is going to run through more than just one isolated project — a lot more.

Why is the situation so bad? Because users make changes, people don’t communicate, staff relies on early estimates and managers don’t monitor what’s going on.

The thing every-

Meet the participants

The 115 companies in the Lederer--Prasad survey shake out as follows:

Manufacturing...... 32%
Insurance............ 17%
Banking/Finance..... 10%
Systems consulting... 9%
Government........... 6%
Utilities............... 5%
Retail.................. 5%
Education............. 4%
Other................... 12%

The problem here is critical: The developers are working “blind”; they don’t know how the estimator arrived at the numbers. There is “a loss of the project’s oral history, including how and why initial estimates were crafted,” Bloom says.

A more subtle problem with split responsibility is that it may actually foster poor estimation and obscure who’s at fault. The initial estimator — who doesn’t analyze, design or program — has little pressure to be accurate. If there is an overrun, the estimator can claim that the developers were inaccurate.

The more savvy way to handle the situation is to have those analysts and programmers who will develop the system prepare an initial cost estimate during their feasibility study, when they are ascertaining user requirements. There will not be any miscommunication between estimator and developer.

Continued on page 86
How object orientation can help project management

BY ALEXANDER M. STEWART

As development projects become larger and more complex, overrun in both budgets and schedules have become commonplace. It seems that management's reflex response to a project plan is to estimate how much overrun it can tolerate.

One of the problems with most project management plans is that they are developed from scratch. Instead of drawing on a library of historical experience, the project planner has only his experience and a few principles with which to work. Schedules are often based on too much optimism.

This kind of thinking may not have to be the norm forever. Borrowing the object-oriented paradigm from software development and applying it to project management can provide the basis for a more uniform approach to collecting and utilizing historical development experience on a widespread basis.

The first steps

While the object-oriented paradigm is still in its infancy, companies can keep it in mind as a future framework for communicating project experience from one project to another. In the best of all worlds, companies will set up an experience database in the form of an object (experience) library.

Every project consists of four phases: requirements, design, implementation, and verification. In object-oriented terms, each of these phases would be represented as "activity objects." Each of these objects can be broken down into more detailed activity objects (tasks) that are conceptually the same as the objects in the layer above them (see chart). Instead of looking at phases and tasks as unique, companies can stress the commonality in them.

In large complex projects, this decomposition process continues until the task size is small enough so a task can be performed in a reasonably short time period — say two weeks. Every task, down to the most minute, continues to have requirements, design, implementation and verification activities.

The study should zero in on labor costs from business management ("I'm routinely asked for estimates with little time to think about them," LaBreque acknowledges), imperative to delay announcing the estimate until it is as accurate as possible.

The first rule is not to blurt out an incomplete guess. The second is to get approval for a feasibility study, which will uncover costs to make the estimate more realistic.

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manager who conducts project review
meetings assessing schedule and budget,
controlling the project's scope and author-
tizing changes," LaBrecque says.

American Management Systems, Inc.
in Arlington, Va., uses three or four inde-
pendent auditors for each of its projects,
says Fred Forman, executive vice presi-
dent at the company. The input of these au-
ditors during a retail credit system project
have been an "unpleasant situation," For-
man says. The auditors pinpointed certain
problematic parts of the plan, including
how long the project would take and how
much support it would need, so the esti-
mates for the eight figure project were
more realistic.

Stringent, formal monitoring keeps de-
velopers on their toes as they strive to com-
plete the project within the parameters of
the estimate. Furthermore, knowing that
managers will be following the project's
and estimate's every move inspires great
diligence and accuracy in the creation of
the estimate.

Computing management should care-
fully study and approve the cost esti-
mate. Even the best estimators make mis-
takes. That's why IS managers should
study and approve the cost estimate rather
than relying completely on the skills of es-
timators. Besides, having the department
head involved probably increases the
chances of a solid estimate. The study
found a statistically significant correlation
between the projects in which IS manage-
tment signs off and more accurate estimat-
ing.

"In 1988, Ford implemented a life cycle
methodology that incorporates manage-
ment reviews of estimates to increase their
accuracy," says Rich Wojcick, manager of
corporate technical planning at Ford
Motor Co.

Rely on documented facts, standards
and simple arithmetic formulas rather
than guesses, intuition and personal
memory. According to our study, there is
a high correlation between accurate esti-
mates and the use of documented facts, a
simple formula and established standards.

Don't rely solely on cost estimating soft-
ware. Only 17% of our companies reported
using a software package to help estimate
the development costs of their large proj-
ects. We found that users of such packages
were no more accurate in their estimates
than were nonusers.

One cynic put the use of an estimating
package this way: "First you come up with
an estimate that you know management
will accept, probably basing it on the
amount of money the user has to spend.
Then you follow the rules of the package
to estimate the actual costs. That means
taking a guess at parameters.

"If the software package produces an
estimate that is too high, reduce the pa-
rameters to lower the estimate to the num-
ber you wanted in the first place. If the
package produces an estimate that is too
low, increase the parameters until you get
the estimate you originally wanted. Man-
agement will be very impressed by the
computer printout from the software-gen-
erated estimate, and that by itself may get
the project approved. Don't worry about
implementing the system within the esti-
mate — let the programmers worry about
that."

Think about it. Information Technology. IT's making a critical difference in
the industries deemed crucial to the nation's prosperity by the U.S. Council on
Competitiveness—nine industries together worth over $1 trillion and employing
some 12 million people. Industries as diverse as aerospace, chemicals and con-
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And Information Technology brings it all to bear for a better bottom line.
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aerospace company using IT to model a next generation airliner and avoid a full-
scale mock-up. By a baking company using IT to cook up millions of dollars in sales
force productivity gains.

The bottom line: Information Technology can mean the difference be-
tween running a business, and being run out of business. When you think about it,
IT makes a major difference. To learn more, call ITAA at (703) 284-5326.

Information Technology. What you need to succeed. ITAA

IN DEPTH: PUTTING ESTIMATES ON TRACK

Bad estimates' ripple effect

Cost estimating encompass much more than
just how much one large
project is going to cost.
That's why it is so critical
to be accurate.

Here's how it is used to figure out
staff numbers for projects, to control
project implementation, to select
and schedule projects and to quote
charges to users.

- Staffing: A cost estimate typically
includes the expected number of
hours needed to complete a project
(e.g., 4,500). A company has a stan-
dard number of productive hours for
employees (e.g., 1,800 hours per
year). Management decides when it
wants the project finished (say in 6
months, or 900 hours). If you divide
the project hours (4,500) by the man-hours to completion (900), you
come up with the number of people
— five — needed for the period.

- Control: In terms of project imple-
mentation, most people use hours
from the estimate associated with
particular, tangible accomplish-
ments (milestones), counting hours
until milestones are accomplished.

If accomplishments begin to take
more hours than planned, you take
action (maybe revise the estimate,
replace some people on the project
team, etc.).

- Selecting and scheduling: Man-
agement contrasts the estimated
number of hours required with the
number of hours individual analysts
and programmers have available so
it can assign projects to available
people.

- Quoting charges: The estimate is
dollar cost figure that information
systems management might direct-
ly charge to users.
No wonder they call it Big Blue. Just look at the cost of their AS/400 upgrade.

Inevitably, IBM says the only way to get increased AS/400 performance is to upgrade your CPU. And every time you upgrade, it means you’re looking at new hardware, new software, additional memory, additional disk space, and greater service costs on an annual basis. (Ouch.)

Good for IBM. Not so good for you. Especially when EMC’s Harmonix™ Series of Integrated Cached Disk Arrays (ICDA™) offers increased system level performance at a lower total system cost.

Many AS/400 users have found that by adding faster DASD, they’re able to increase their I/O performance and postpone a costly CPU upgrade. And many have chosen EMC’s Harmonix as the alternative to a system upgrade.

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To see how others have benefitted from Harmonix and learn more about upgrading your overall system performance, call 1-800-424-EMC2, extension M274. And save some big green by not buying Big Blue.
YES, I want to receive my own copy of COMPUTERWORLD. I accept your offer of $29.95* for 39 weekly issues — only 76¢ per issue.

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State
Zip

*U.S. Only. Canada $74.97, Central/South America $130, Europe $195, all other countries $295. Foreign orders must be prepaid in U.S. dollars.

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BUSINESS/INDUSTRY (Circle one)
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20. Finance/Insurance/Real Estate
30. Medicine/Law/Education
40. Wholesale/Retail/Trade
50. Business Service (except DP)
60. Government - State/Federal/Local
65. Communications Systems/Public Utilities/Transportation
70. Mining/Construction/Petroleum/Refining/Agriculture
80. Manufacturer of Computers, Computer-Related Systems or Peripherals
85. System Integrators, VARs, Computer Service Bureaus, Software Planning & Consulting Services
90. Computer/Peripheral Dealer/Distributor/Reseller
95. Other

(Titlespecify)

TITLE/FUNCTION (Circle one)
21. Dir./Mgr. MIS Services, Information Center
31. Programming Management, Software Developers
60. Sys. Integrators/VARs/Consulting Mgt.
CORPORATE MANAGEMENT
11. President, Owner/Partner, General Mgr.
12. Vice President, Asst. VP
13. Treasurer, Controller, Financial Officer
DEPARTMENTAL MANAGEMENT
51. Sales & Mktg. Management
70. Medical, Legal, Accounting Mgt.
OTHER PROFESSIONAL MANAGEMENT
80. Educator, Journalists, Librarians, Students
90. Other Titled Personnel

IS INVOLVEMENT (Circle all that apply)
Please indicate your involvement in IS/MIS/DP.

A. Manage/Supervise IS/MIS/DP Staff
B. Recommend/Specify IS Equipment
C. Purchase IS Equipment
D. End-user of IS Equipment
E. No Involvement

Please complete the information to the right to qualify for this special rate.

BUSINESS/INDUSTRY (Circle one)

TITLE/FUNCTION (Circle one)

IS INVOLVEMENT (Circle all that apply)

Please indicate your involvement in IS/MIS/DP.

A. Manage/Supervise IS/MIS/DP Staff
B. Recommend/Specify IS Equipment
C. Purchase IS Equipment
D. End-user of IS Equipment
E. No Involvement

Please complete the information to the right to qualify for this special rate.
Security that's certifiably good

Seeking to lift profile of security pros, groups push to provide certification procedure

BY JAMES DALY
CW Staff

hat do the following people have in common: systems software specialist, internal auditor, chief of data management, head of software development, chief of communications management, network administrator and systems analyst? Answer: They are all in charge of computer security.

Surprised? Don’t be. The jumble of titles highlights the fact that data security is often considered an afterthought at many organizations—a responsibility tackled on other responsibilities.

Not an afterthought

That is a dangerous attitude, says Richard Koenig, an independent security consultant who now heads the International Information Systems Security Certification Consortium, Inc. (ISC?), a nonprofit group pushing to provide the first specialized professional certification in the “infosecurity” field.

“Computer security is a very specialized art, but at many places it’s treated as an afterthought,” says Koenig, president of the Spencer, Mass.-based group. Adds Philip Chapanick, director of the Computer Security Institute in San Francisco: “A lot of people stumble into information security with no training. The company gets dinged on an audit and they quickly assign someone to do security.”

ISC? was founded in 1989 by representatives of several professional organizations in conjunction with companies looking to easily identify individuals well-qualified for the task of resolving current and future information security issues.

“We need to quickly find people who we know can do the job, who know what they are talking about and can handle themselves well,” says Hal Tippecanoe, director of computer security at Rockwell International Corp. in Seal Beach, Calif., and vice president of ISC?.

Koenig says ISC? is in the final stages of creating an examination for its Certified Information Systems Security Professional designation and hopes to hold the first tests next spring. The group will also hold training classes to prepare hopeful candidates for the test.

To get the certification program started quickly as well as to underwrite test development, ISC? directors set up an initial process whereby applicants can submit evidence of professional experience and qualifications to a review committee. Such qualifications include eight years in the data security field, with at least one year apiece in four of the 17 areas in which ISC? hopes to offer specializations: physical security, access control and cryptography, to name a few.

Under this “waiver of formal examination” process, approved applicants will be certified without having to take the exam. Koenig says they will, however, need to pay the $250 test fee. After the initial cycle, Koenig says, he hopes his group will certify more than 1,000 people a year.

Koenig says the certification process is intended to be “a starting point,” not a Superman designation.

Let’s get quizzical

ISC? security certificate hotspot confront questions such as the following:

1. Who does David Kahn credit as the father of Western crypology?
   a. Genghis Kahn.
   b. Sandra.
   c. Daniel.
   d. Gorgo.
   e. Leon Battista Alberti.
   f. Reverend Blake Greenlee.

2. The strength of a cryptographic key is usually described by:
   a. Multiplying the key length by frequency of change.
   b. Dividing the number of possible keys by two.
   c. Summing the key space.
   d. Calculating the third harmonic of the key shift.
   e. Calculating the coefficient of stochastic variance.
   f. Subtracting the weak keys from the total key space.

3. Which of the following weaknesses of a password is not a characteristic?
   a. Increasing the number of password attempts.
   b. Increasing the length of a password.
   c. Increasing the size of the permissible character set.
   d. Encrypting the password for transmission.
   e. Encrypting the password for storage.
   f. Masking the password or using a nondisplay field.

It’s not perfect,” he says. “The certificate will be a measure of knowledge vs. the ability to apply it.” Continuing education is built into the plan; he adds: Certified professionals will have to recertify approximately every three years by taking a test dealing with new developments in the field.

What are the benefits of certifications? Koenig named several:

• The specialty tests will be able to identify applicants who have specific expertise, allowing organizations to streamline the process of job assignment and quickly assemble a security staff finely tuned to protect information in their specific environment, he said.
• Companies required to demonstrate a certain level of security proficiency in order to meet legislative or regulatory requirements will be able to certify that they have personnel who meet the criteria dictated.
• Additionally, the “qualifications of applicants can be assessed based on their achieving professional certification, rather than their ability to write a convincing resume,” Koenig said.

Solid measure?

Good intentions notwithstanding, some users remain skeptical of the need for a certificate. “I know a lot of people who don’t take a test worth a dollar, but I blame the rest of the world,” says Dennis Evans, a systems analyst in charge of network security at the Illinois Department of Revenue in Springfield.

Others say the certification process may provide a good foundation but warn against using it as a crutch.

“Continuing education needs to be heavily emphasized. I would hate to see us end up with a bunch of narrow specialists within the computer security discipline,” Koenig said.

ISC? is not the only group to come up with the idea of standardizing data security training. Similar certifications are already offered by two other groups, although each offers the degree of concentration on data security that ISC? promises.

The Institute for Certification of Computer Professionals in Des Plaines, Ill., does not focus directly on the information security function but does offer a subspecialization in the Certified Computer Programmer, Certified Data Processor and Certified Systems Professional designations.

Other organizations are also moving to provide a base of common knowledge to train future security professionals. The Computer Information Systems faculty at the University of Idaho, for instance, has developed an eight-step sample course of teaching information security to students.
Bank CIOs defend their systems strategies

BY THOMAS HOFFMAN
CW 3769

Information systems executives at a few major U.S. banks have taken exception to the findings of a recent report that shows the banking industry still mired in the technological stone age despite huge dollar investments in information technology. The 1992 survey of technology was issued by New York-based market research firm Ernst & Young in conjunction with trade newspaper American Banker and was based on responses from chief technology executives at 68 of the nation's 300 largest banks. It drew a bleak picture of banks slogging through an outdated, mainframe-heavy technology landscape, $41.1 billion worth of 1991 technology investments notwithstanding.

What we are seeing is the commercial legacy of the banks' technology legacy, Ernst & Young banking partner Michael Diogo Teixeira said. Most, if not all, of the survey respondents continue to use outdated legacy mainframe systems to run more than 80% of their applications, he said, with a resulting drain on profits.

But IS executives at several banks characterized their institutions as heirs, rather than victims, of legacy systems.

David A. Moore, senior vice president of information processing at Mellon Bank Corp., in Pittsburgh, said he believes alternative computing platforms, such as client/server-based or distributed computing environments, have not yet matured to the level required to process corporate-strength applications. For example, Moore pointed out, major banks typically process between 4 million and 8 million check volumes per day. Only a mainframe, he said, can satisfy such a number-crunching demand.

"The capabilities for high-volume transaction processing, reliability, security and connectivity needs for commercial banks can only be met with large mainframes," he said. Although Mathai, vice president of technology strategy planning at Bankers Trust Co. in New York, Ernst & Young's research shows that only a handful of banks have deployed leading-edge technologies such as check imaging and expert systems, Teixeira noted. On a scale of 100, the highest score the survey logged for any respondent bank in terms of technological advancement was 39. Teixeira declared to disclose the high scorer, but he said that many banks had scored close to zero.

Moore disputed the significance of such findings, saying that processing has not evolved to the point where any bank has utilized it fully, said Teixeira. Mellon has been using FileNet's file folder imaging system for nine years with good results, Moore said. The bank has also been testing IBM's check imaging systems for the past three years. Banking systems are in fact using leading-edge technologies to support their data centers, according to Teixeira.

For example, he said, quite a few have been aggressive in updating their direct-access storage device technologies. Some use sophisticated on-line networks to support their telecommunications requirements, he added. But there are exceptions, Teixeira said. The result remains technological catch-up at the banks. For example, few banks reported wide use of groupware, or software that is used to coordinate activities among multiple group members.

The Chase Manhattan Bank NA in New York, early proponent of Lotus Development Corp.'s Notes groupware, but Teixeira said the $97 billion bank is an exception among its competitors. Only 6% of the banks surveyed are widely using groupware, he said.

Waiting for advances Mathai said that although he expects the use of groupware "to explode" throughout the banking industry over the next few years, he believes most banks are waiting for the technology to ripen.

Although the industry is using 766,000 microcomputers—a 19% increase from 644,000 last year—only 37% of the banks have local-area network (LAN) technologies.

Mathai said their organizations are in fact using leading-edge technologies to support their data centers, according to Teixeira. For example, he said, quite a few have been aggressive. However, added, he added, banks do not deserve to be singled out. "E-mail is a tool that's certainly not being used to its fullest capabilities by any industry," he said.

Banking systems

Moving away from the mainframe

The mainframe will still be used more than any other platform, but it is also the only platform to regress, Mathai said.

"It's time" to migrate away from the mainframe, but it is also the only platform to regress, Mathai said.

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You need a new workstation.  But there are so many on the market.  How do you decide?  Ask the right questions. Then, choose the right benchmarks.

When you're planning to purchase a new workstation and you need some vital information to help you make the right choice, you need to find out whether System X can handle your particular application well enough to satisfy your business requirements and whether it's a better value than System Y. Ideally, this information would come from a direct comparison of the competing systems running your application under exactly the same conditions—a situation that's costly and not very likely to occur.

When you can't do side-by-side comparisons of actual applications, the next best information provider is the benchmark. Benchmarks measure everything from CPU to memory to I/O subsystems, and more. That's why it's up to you to choose the particular benchmarks that relate directly to your system's applications. Choosing the wrong benchmarks can be a waste of time and money. In the end, you may be misled into selecting a system that cannot do the job according to your requirements.

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<table>
<thead>
<tr>
<th>Benchmark</th>
<th>What They Measure</th>
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<tr>
<td>SPECint92</td>
<td>A set of 6 Integer C programs.</td>
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<tr>
<td>SPECfp92</td>
<td>A set of 9 double precision floating point, I/O transfers, OS function and system calls, disk access, and data transfer over a UNIX pipe.</td>
</tr>
<tr>
<td>AIM II</td>
<td>This benchmark measures integer and floating point, I/O transfers, OS function and system calls, disk access, and data transfer over a UNIX pipe.</td>
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<tr>
<td>AIM III</td>
<td>Measuring CPU, floating point, I/O, memory, integer, and some system functions, AIM III can be used to compare relative performance of multiuser UNIX systems and can be customized for capacity planning. (Metric: AIM Performance Rating, Maximum User Loads)</td>
</tr>
<tr>
<td>AIM Milestone</td>
<td>AIM Milestone is functionally representative of real user loads in a multiuser environment. It measures system utilities speed and capacity for UNIX systems. (Metric: Utilities Index)</td>
</tr>
<tr>
<td>SPEC SDM</td>
<td>Measuring CPU, memory, compiler effectiveness, and I/O subsystems, SPEC SDM is representative of a UNIX software development multitasking environment. It also has a multistream metric for multiple processor systems. (Metric: Peak Throughput at scripts/hour)</td>
</tr>
<tr>
<td>TPC-A</td>
<td>This benchmark measures CPU, memory, I/O subsystems, terminal handling, and database performance. TPC-A is an online transaction processing benchmark and is database dependent. Some vendors use client/server or front-end/back-end configurations. (Metric: TPX-A and $K/TPS-A)</td>
</tr>
<tr>
<td>TPC-B</td>
<td>Measuring CPU, memory, and I/O subsystem and database performance, TPC-B should be used to compare relative performance of database managers. It does not, however, contain representative user interaction via terminal handling or think time. (Metric: TPX-B and $K/TPS-B)</td>
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**Free Offer from AIM Technology**

Take advantage of AIM Technology's Summer 1992 offer, and get critical benchmark data on the latest computing technology from Digital, IBM, Sun, Hewlett-Packard, NCR, and others. AIM — an independent third-party certifier of vendor performance — is offering a FREE issue of its Summer 1992 UNIX System Price/Performance Guide with your purchase of a one-year subscription ($29.95). That's five quarterly issues for the price of four. For information, call Amy Yowell at 800-848-8649, or 408-748-8649 inside California.
Which Benchmarks Are Right for Your Applications?

<table>
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<tr>
<th>Application</th>
<th>Components</th>
<th>Benchmarks</th>
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<tr>
<td>CASE Applications</td>
<td>Integer performance, 2D graphics, Disk I/O, Interactivity</td>
<td>SPEC SDM, SPECint92, AIM Milestone, AIM III, Linpack, X11PERF, SPECint92, SPECfp92, Whetstone, Linpack, CPU/2, Whetstone, Linpack, CPU/2</td>
</tr>
<tr>
<td>Electronic CAD</td>
<td>Integer and floating point math, Cache, 3D graphics, Disk I/O</td>
<td>SPECfp92, X11PERF, SPECint92, SPECfp92, Whetstone, Linpack, CPU/2, Whetstone</td>
</tr>
<tr>
<td>Mechanical CAD</td>
<td>Floating point, 3D graphics, Memory, Disk I/O</td>
<td>SPECfp92, X11PERF, SPECfp92, Linpack, CPU/2, Whetstone</td>
</tr>
<tr>
<td>Database Applications</td>
<td>I/O, Database performance</td>
<td>TP/C-A, TP/C-B, AIM</td>
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<tr>
<td>Multipurpose Servers</td>
<td>Multithreading, Multilicense, I/O, CPU, Memory, Network interface</td>
<td>AIM III, SPEC SDM, NIFSstone</td>
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<tr>
<td>Scientific Applications</td>
<td>CPU, Floating point, Integer</td>
<td>SPECint92, SPECfp92, Linpack, CPU/2, Whetstone</td>
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</table>

To find out, establish which components are used in your application. Then, choose the benchmark that measures that component. Use this chart — listing specific applications, their components, and appropriate benchmarks — to help you decide.

With the Digital/ORACLE team, CCC was able to store its rights-holder and title information and process the considerable data and transactions necessary for photocopy permission. Plus, the company was able to respond quickly to customer requests and to adapt the system to accommodate future business challenges.

New Programs, New Business, New System Challenges

As CCC business increased, so did the demands on its VAX system. Additional computing power was needed to keep pace with projected growth. To that end, CCC teamed with one of Digital's largest distributors to formulate an upgrade plan that would protect CCC's current investment.

Boosting the current version of VMS running on the VAX 6000 Model 310 to VMS version 5.5 set the stage for an upgrade to the VAX 6000 Model 610. After only a two-hour conversion process, CCC gained ten times the computing power — without any disruption to its users. In addition, the upgrade allowed CCC to add 15 terminals, a new controller, increased I/O capabilities, and additional memory to accelerate the process and to cut database queries to sub-second response times.

With the purchase of this system upgrade, CCC acquired an ORACLE software license upgrade at 15 percent savings.

Today, CCC continues to team its VAX system with ORACLE software to provide faster and better communications to publishers and customers.

For more information on VAX systems or software savings, call 800-DIGITAL (800-344-4825), press 2, and request ext. 24X.
**GETTING THE FACTS**

**ON Alpha Services**

Let's hear the statements about Digital's high-performance Alpha technology:

---

**Digital is paving the way to twenty-first-century computing... Today's VAX systems are Alpha-ready... Your initial investment will always be protected.**

---

**Sounds good. But, you still have questions. You want more information—about Alpha itself, the migration process, and the service offerings that will be key in paving a flexible and cost-effective pathway to better computing solutions for the future.**

Here, Peter Jansen, Digital Services Alpha Program Manager, answers some of your most commonly asked questions regarding Alpha, and its ability to see your business through to the twenty-first century and beyond.

---

**Q. Why should I change or move to Alpha?**

_A. Alpha represents the technology platform that will take today's computing environment well into the twenty-first century. With Alpha, the performance, productivity, and efficiency that you already have with VAX and DECSystem platforms is significantly enhanced. For example, Alpha extends your ability to:_

- Access large decentralized and distributed databases, using object-oriented technologies
- Integrate knowledge-based systems and rules
- Integrate voice, data, and images
- Handle volumes of data movement

In addition, the "openness" of Alpha technology will provide you with flexibility, long-term investment protection, and operational performance improvements. Digital will initially offer OSF, NT, and OpenVMS Alpha systems. OSF and OpenVMS will have the same open features available on today's VAX and DECSystem platforms.

Digital Services can support you in the process of reengineering your overall business, downscaling to a distributed client/server environment, and integrating Alpha into your existing computing environment—whether that environment is based on a current VMS, ULTRIX, non-Digital UNIX, or proprietary platform. Service offerings include:

- Specific application porting services
- Overall conversion and supporting tools
- Configuration services
- System management support, such as performance tuning and capacity planning
- Network design and management services
- Customer training and consulting services
- Hardware and operating system support on both Alpha and multivendor platforms.

All in all, Digital can provide a complete single source of support for your open computing environment.

---

**Q. Does migration to Alpha mean costly change and/or obsolescence of current computing equipment?**

_A. No. In fact, Alpha was designed to be integrated into your existing computing environment. This means you can take immediate advantage of improved system performance while maintaining compatibility with the computing environment already in place. Moreover, Digital can assist you in protecting your hardware/software investment by offering a flexible portfolio of migration, assessment, porting, configuration, and consulting services—whether you are evolving from an existing VMS or ULTRIX platform, or moving from another vendor's environment._

We have also set up Application Migration/Resource Centers throughout the U.S., Europe, and the General International Area (GIA)—centers that are designed to assist you in planning and implementing Alpha into your environments. Our new focus on multivendor support allows you to choose one vendor to manage your complete migration, regardless of the technology or application.

Alpha's high-performance platform will pave the way for several emerging technologies such as AI, object-oriented databases, imaging, and multimedia. This will allow you to implement the system architecture necessary to support your business processes in order to maintain a competitive advantage.

---

**Q. As an OSF or future NT customer, will I be forced to migrate? As a VMS customer, will I be forced to move?**

_A. The answer to both questions is no. Alpha will support OpenVMS, OSF, and NT—and all three operating systems will be compatible within their respective orientation. Also, all three systems will be compatible with many of the same industry standards. Digital's technology assessment consulting services can help you determine the environment that is truly optimal for your business]._

---

**Learning Services**

Offerings in this category are designed to provide your employees with training on Alpha technology and related products. Courses such as change management are also offered to help management deal with the evolving computer technologies of the '90s.

**Hardware, Software, and Network Services**

These services not only support Digital's Alpha products, but also provide multivendor support offerings, such as LAN integration, multiple OS support, hardware services, and support for industry-standard applications.

---

**Q. Will I get stuck if I don't move to Alpha?**

_A. Whether you choose to move to Alpha—or choose not to at this time—you most certainly will not "get stuck." We will continue to provide enhanced Alpha-ready VAX systems that are board-upgradable to Alpha, as well as ongoing service for both VAX and DECSystem platforms. What's more, you will continue to receive all the advantages of OpenVMS and OSF whether you use VAX platforms, DECsystem platforms, or Alpha._

Applications currently used on VAX will be available on Alpha. To that end, we are working with software vendors to ensure the availability of more than one thousand initial applications for Alpha—with many more to follow.

---

**Q. How does Alpha fit in with Digital's ongoing service strategy?**

_A. Alpha provides the industry with a proof point of Digital's commitment to Open Systems and continued price/performance leadership—the kind of price/performance leadership already offered by VAX systems. This commitment to Open Systems is supported by the licensing of the Alpha architecture, industry-standard operating systems (OSF, NT, OpenVMS), and broadband-based applications support. Alpha supports, enhances, and enables Digital as a leading-edge, Open Services company—strategically positioned to be a single-source provider of multivendor services and systems integration capabilities._

Alpha can be a key enabler for you by providing key opportunities to reengineer unproductive business practices. Digital Services plays a leading role in providing you with the consulting and assessment needed to maximize your business opportunities.

For more information on Digital's Alpha Services, call Peter Jansen at 508-496-8857.
A long with the general benefits of stretching your technology budget and implementing your business plans quickly, certain types of leasing can favorably "window dress" your company's financial statements — positioning your organization as one that is stronger, more liquid, and more profitable. To that end — and for maximum benefit from your leasing options — it's important that you distinguish between the operating and the capital lease.

**Capital and Operating Terms Defined**

A lease contract that is a true rental arrangement is called an operating lease. In this type of contract, you have full use of the system, while the lessor maintains system ownership. The operating lease is, in both form and substance, a lease.

A lease contract that transfers the characteristics and benefits of system ownership to you is called a capital lease. Although a lease in form, the substance of this type of transaction is that of a purchase — and treated just like any other company asset that has been purchased.

In other words, a capital lease is shown, or capitalized, on your financial statement as an asset. At the same time, a corresponding liability of the same dollar amount as the asset is recorded on the balance sheet. This liability is amortized over the life of the lease the same as the outstanding debt on an installment loan.

**Classifying Your Lease**

A capital lease reflects ownership, whereas an operating lease reflects usage only. In determining the classification of a lease — either capital or operating — the Financial Accounting Standards Board No. 13 (FASB 13) uses the following four criteria:

- The lease term is equal to 75 percent or more of the estimated economic life of the leased property.
- The present value of the minimum lease payments, at the beginning of the lease term, equals or exceeds 90 percent of the fair market value of the property.
- If any one of these four criteria is met, the lease will be classified as a capital lease. If none is met, the lease becomes, by default, an operating lease.

The Operating Lease Pays a Pleasing Financial Portrait

In the case of an operating lease, the leased system is not capitalized nor is the corresponding liability recorded on the balance sheet. Thus, the more, the only expense appearing on your income statement attributable to the lease would be the lease rental expense.

This type of off-balance-sheet financing has many advantages, including dressing up your financial statements by improving your company's financial ratios, at least initially. As the operating lease does not create a liability on the balance sheet, your organization also appears to be less leveraged — making your financial picture more appealing to potential lenders. In addition, an operating lease helps you lower your asset base, as well as increase your reported earnings. In short, an operating lease enables you to remove a portion of your debt obligation from the balance sheet. Thus, your financial statements — and your entire organization — appear more solvent and less encumbered by debt.

TurboWare Packs Your System with HIGH-PERFORMANCE PUNCH

Digital and EEC Systems have great news for VAX 4000, 6000, 9000, and MicroVAX system users. It's called TurboWare — a performance package of Digital memory and EEC Systems SuperCache. SuperCache, a software accelerator for VAX VMS systems, runs automatically and can generate significant performance improvements — as much as 2 to 15 times your current performance — within seconds of installation.

Utilizing caching technology, SuperCache uses 100 percent of your system's free memory to move data from frequently used files into main memory. However, it has the ability to return memory back to VMS upon demand. For high-performance results, it is necessary to have at least 10 percent or more free memory when using SuperCache — the more free memory available for caching, the greater the performance results achieved.

For this reason, TurboWare significantly enhances billing, distribution, banking, and manufacturing systems applications. Ultimately, TurboWare provides you with significant cost-savings through increased system performance and user productivity.

**Call for Free Software Trial**

For a free TurboWare brochure, or a 30-day free trial of SuperCache software and free consulting service during the same time period, call EEC Systems at 800-388-8872, fax EEC at 508-443-9997.
According to Carol Beatty, an associate professor of management at Queen's University School of Business in Kingston, Ontario, Beatty, who recently completed a four-year study of advanced manufacturing implementations at 10 companies, says this approach almost always guarantees disappointment because many such projects take at least a year, often two, to install -- and even then usually don't produce immediate benefits.

Only half the companies that try to implement advanced manufacturing technology actually reach their original goals, she says. The other half wind up dead-ended or off-track, usually because of management problems.

Intelligence barriers in Europe

**Collecting information on the competition can be tough for U.S. companies operating — or planning to move operations into — European companies, according to International Business.** While business information is fairly accessible in the UK, Sweden and Belgium, many other countries present considerable challenges.

Among the toughest are the Netherlands, where public records on businesses are scattered in local town halls, and Germany, where the data protection law passed to protect individuals is also often used by companies to avoid releasing even basic information such as the number of employees on their payroll.

Surviving the maquiladora audit

Hundreds of U.S. companies have opened assembly plants called "maquiladoras" across the border in Mexico to take advantage of Mexico's low labor rates and then send the assembled products back to the U.S.

However, to be sure that the products qualify for low import tariffs, the U.S. Customs Service must be able to audit the organization's cost accounting systems.

Companies must provide the government auditors with read-only access to the accounting systems and with programmers who can retrieve and sort the necessary data.

Compiled by features editor Joanne Kelcher with contributions from Mitch Betts, national correspondent.
There's nothing innovative about copying.

On Friday, July 31, 1992, a U.S. District Court ruled that Borland's Quattro® and Quattro Pro® spreadsheets infringe the copyrights of Lotus® 1-2-3®.

In its ruling, the Court concluded that "...the Quattro programs derive from illicit copying," holding that "Lotus has sued" and "Borland is liable."

**Lotus innovated. Borland copied.**

We sued to protect our intellectual property rights. And in winning we've helped preserve an environment in which independent software developers can freely develop innovative new products without fear that their creative work will be stolen. We sued to protect innovation, not to stifle it. Borland's copying is no different from someone plagiarizing *The Grapes of Wrath*, changing the ending, and calling it a new novel. It's really that simple.

But the courtroom is just one of the places where Borland® has lost. They've lost in the marketplace, where 1-2-3 for DOS continues to dominate. Based on a recent report from the Software Publishers Association, Lotus 1-2-3 accounts for seven out of 10 new DOS spreadsheet purchases and over 80% of all DOS spreadsheet revenue.

They've lost in performance categories, despite their claims to the contrary. For example, in a recent National Software Testing Laboratories performance test, 1-2-3 Release 2.4 beats Quattro Pro 4.0 hands down in areas users care about most. The tests reveal that 1-2-3 Release 2.4 is four times faster than Quattro Pro 4.0 in retrieving a WK1 file; 18 times faster at moving a block of data; three times faster at product load; one-and-a-half times faster at printing; and 35 times faster scrolling right or left in graphical mode.

They've lost on the innovation front, too. Lotus 1-2-3 was the first DOS spreadsheet to introduce innovative technologies such as true 3D worksheets, the Viewer, WYSIWYG display, DataLens®, and unique one-click SmartIcons®. And we're still the only spreadsheet that offers true compatibility across platforms.

**Who should you trust?**

But perhaps most importantly, Borland lost what matters most to customers: credibility.

For instance, Borland told the Court they needed to copy our menus to achieve macro compatibility with 1-2-3. Now they tell their customers that the 1-2-3 menus aren't critical to compatibility.

So ask yourself: to what extent can you trust a company that values what is expedient over what is legal? And to what extent can you rely on the product it wants you to buy?

Here's our advice: choose the product, and the company, you can trust. Choose Lotus. After all, we're the best in the business at building innovative spreadsheets. Always have been, always will be.

Case closed.

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*Source: Software Publishers Association summary and press data, May 1992. For North America. NSTL standards used in tests performed on an IBM® AT® 286 with 640K memory. © 1992 Lotus Development Corporation. All rights reserved. Lotus, 1-2-3 and DataLens are registered trademarks of Lotus Development Corporation. Quattro Pro and Borland are registered trademarks of Borland International, Inc. IBM and AT are registered trademarks of International Business Machines Corporation.*
Mentors can help make or break a career

BY KATHLEEN GOW

SPECIAL STAFF

entering saved Howard Pigge's job. And lack of mentoring, almost cost Harvey Shrednick his.

Shrednick, senior vice president of information services at glassware company Corning, Inc., was nearly fired from the Corning, N.Y., company for failing to go through the proper chain of command on a personnel decision — a transgression that a mentor could have warned him about.

He suffered from not having a coach, Shrednick says. "A mentor might have shared his mistakes.

He turned the experience around and hopes to help others avoid similar mistakes by participating in Corning's formal mentor program. He now coaches Pigge, an information systems business manager at Corning's Science Products Division.

It's a good thing Pigge had a coach; without a veteran's insight into corporate culture and the style of particular players, he says, "there is a good possibility that I would have left the company.

But while everyone seems to want a mentor, few IS professionals take the initiative to find one when there's no formal program.

Their resistance is understandable; many lower level professionals don't like to admit they need help with something. "They feel they can do it on their own — and they probably can — but outside support would make it easier," says James Lawler, vice president of sales, management systems at the Advanced Office Systems Group (AOSG) of Merrill Lynch & Co. in Princeton, N.J.

Lawler, who also mentors IS students at Pace University in New York and St. Francis College in Brooklyn, N.Y., says, "People feel shy about asking for support, but some are very turned on to present things in a subtle way.

"I wanted guidance on making a career change," says Millward, associate marketing manager in business financial services in Chicago. "As a woman in a male-dominated field and company, I wanted to know, how do you handle this from a political perspective?" She identified a very visible woman in the company whom she wanted to emulate and approached her.

"I said, 'I have some career issues I'm dealing with; really like your style and I would like to spend some time with you.' She was flattered and said, 'Sure,'" Millward says.

Building the relationship

While some people choose mentors to help them with interpersonal situations such as handling a tough boss, others look to their IS mentors for technical education and direction.

Marcia Duhart, a senior systems analyst at AOSG, selected a mentor with a strong systems background who had worked for the company for 18 years.

Some "mentorees" derive more benefit from being mentored by colleagues who work in other departments. Millward said that having guidance from someone in a different department fostered openness. "I could be frank with her, and she was candid with me," she said.

Millward's mentor gave her direction in negotiating for a higher position. "I had never negotiated before," she says. Her mentor pointed out from an employer's standpoint issues that would not be negotiable and how to present things in a subtle way.

Programs like those at Merrill Lynch's AOSG and Corning usually give initial training to both mentee and mentor, setting guidelines for the relationship.

"You have to be flexible with schedules," Millward says, while at the same time making sure that your mentoring meetings are a priority. Some find it easiest to meet in either person's office during the workday. Others opt to meet for lunch in the freer environment of a restaurant.

The most important requirement for seeking out a mentor is knowing your objective: Do you want someone to answer day-to-day questions or someone who will get involved in your career?

The coach also needs to make the coach comfortable by bringing up issues about the relationship. According to Pigge, "A long-term coach has to be willing to trust the coach enough to share his experiences and feelings and give guidance that is maybe not the corporate line."

GROUND RULES

Once you've identified a potential mentor, the next step is to see if the other person is willing. When a relationship is established, veteran mentors and mentors recommend that participants address the following:

Agree to terms at the first meeting.

• What does each party expect from the relationship? What are the boundaries?
• How much time should be spent? During work or after?
• When and where is it OK to call?
• What areas will be covered? Professional only?
• What level of confidentiality do you expect?

Be willing to accept responsibility.

• Mentors are responsible for their own career.
• Mentees should be willing to share experiences.
• Mentors should encourage two-way communication.

Do a process check every few months to make sure the relationship is still on target.

• Is it a two-way relationship?
• Is the mentor taking any advice given?
• Is the mentor pontificating?
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COMPUTERWORLD

How to place your recruitment ad in Computerworld
**Fast Track**

**CAREER ADVICE FOR THE '90s**

**Q** I am a principal analyst at a large financial services organization. I have been approached about a possible management job and am unsure whether to accept. I do not want to wake up one day with my technical skills no longer in demand.

**A** First, take pride in being offered a promotion. Second, forget management vs. hands-on and focus on your own feelings. Do you feel challenged in your current position? Do your company financially secure? Does your company financially secure? Do you have a sense of loyalty to your company? If your answer to all these questions is yes, then accept your promotion with enthusiasm.

Once a decision is made to stay and pursue this promotion, then tackle the issue of management experience vs. hands-on experience.

If you pass an exam for certified computer programmer (CCP), certified data processor (CDP) and certified systems professional (CSP) and have these acronyms attached to your name, does it help you in your career?

I always questioned the effectiveness of certification programs. I never had a class or certification in the backgrounds of candidates I have worked with. Based on this experience, I would say that these programs do not help your career.

I do wish to stress that these certification tests enhance your sense of professional worth.

---

**COMPUTER CAREERS**

**TIP OF THE MONTH**

How to turn down overtime without damaging your career

- Try to negotiate when the overtime is put in as opposed to saying no. We'll accommodate a shift of work hours if people can work on a deadline better that way over a short period of time.

Irwin Bernstein, vice president, planning/administration
Maidenform, Inc., Bayonne, N.J.

- Let your boss know you have plans beyond your work (or her) not to have even meetings here and talk about a lot of things and availability is one of them.

Dennis Love, IS director and vice president
Acme Thread and Supply, Inc., Los Angeles

- If there's a good reason for declining, that's OK. But the staff should be flexible for critical business applications, and management should be flexible for personal emergencies.

Regis Garbo, director, data center and telecommunications
Leaver Brothers Co., New York

- You would have to choose very carefully when you turn down overtime because having a commitment to your career is part of moving through the management ranks.

Julie St. John, vice president of transaction processing and management
Fannie Mae, Washington, D.C.

- There are sometimes legitimate, unexpected needs for overtime. Since things happen and deadlines flip, and people have to pitch in. Overtime can be an opportunity for recognition and advancement. But mandatory overtime — on management's part — is frowned upon, exploitative and oppressive.

Brian Graham, project leader
Administrative information services
Columbia University, New York

Compiled by Leslie Goff, a free-lance writer based in New York.

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**COMPUTER CAREERS**

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**THE USA'S HOUSING PARTNER**

Fast Track is a twice-monthly column dedicated to answering questions on career directions. This week's guest advisor is Max Stein, a marketing director at Contract Solutions, Inc., located in Salem, N.H.

For the past three years, I have been developing my own database product. I believe I will have an excellent product? Am I doing anything wrong?

Q: Whether or not your employer allows you to terminate your contract and any potential existence of a conflict of interest.

In most cases, you cannot be fired for trying to market a product of your own. However, you must not be in conflict with your current employers. Once you have prioritized your own personal goals with your employment obligations, make sure you are not violating any contractual issues.

Do not attempt to develop a product that is competitive with your employer's. And never use equipment to aid in your development efforts.

Q: I am a programmer/analyst. Our department is using a System/38 and has no immediate plans to move to an Application System/400, so there's not much opportunity to expand my experience. Besides, I wish to work in a personal computer or workstation environment. What can I do?

A: Volunteer at a nonprofit organization whose work you support. These groups are often in need of technical people to help with their databases. This would allow you to give back to the community, while at the same time expanding your skills.

Q: I am a programmer/analyst. I have been approached about a possible management job and am unsure whether to accept. I do not want to wake up one day with my technical skills no longer in demand.

A: First, take pride in being offered a promotion. Second, forget management vs. hands-on and focus on your own feelings. Do you feel challenged in your current position? Do your company financially secure? Do you have a sense of loyalty to your company? If your answer to all these questions is yes, then accept your promotion with enthusiasm.

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These responsibilities demand a take-charge individual with a college degree with technical curriculum or equivalent, 10 years technical experience, employer-assisted housing, 401(k) matching, and more. For immediate consideration, send your resume to: Fannie Mae, Dept. JJ-207-169, P.O. Box 39190, Washington, D.C. 20016. For information on other positions, call toll-free 1-800-525-3099.

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These responsibilities demand a take-charge individual with a college degree with technical curriculum or equivalent, 10 years technical experience (1-2 years emphasis on methodologies and development tools); experience developing systems development methodologies, the ability to independently solve problems, and effective oral and written communications skills.

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- Developing and implementing the system

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Interactive Business Systems is dedicated to providing high-quality technology solutions to businesses worldwide. We are driven by a passion for innovation and a commitment to excellence.

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Salary:
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Benefits:
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Computerworld/Corptech Career Index

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<td>Business failures</td>
<td>Shrinkage</td>
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- Experience with operating systems and database management tools; ability to communicate effectively; ability to work in a high pressure environment with tight time frames.

Data Base Analyst

Work with user groups to evaluate database technologies; recommend optimal technologies for performance; analyze database performance to segregate normal database performance; provide backup support for all DB2 projects and recovery for data on all storage media for data utility group; provide tape volume requirements for applications.

Skills Required:
- Four to six years progressive information systems experience; expertise knowledge of DB2; DLI; prior direct experience with very large systems; working knowledge of DB2 performance analysis tools/utilities. i.e. Insight DB2, DB2LPN.

Implementation Analyst

Interface with various operations groups for functions related to systems implementation support; functions to include assisting in ticketing schedules for database applications into production; review, update, and present documentation to application teams, and ensure establishing current software application load balances; provide support to application teams in maintaining current application loads.

Skills Required:
- Three to five years progressive systems experience; a minimum of two years experience in an IBM mainframe environment; experience with Com-Library, DB2, CICS, MVS, and AS/400; and knowledge of IBM mainframe. Previous experience to operating systems and database management tools; ability to communicate effectively; ability to work in a high pressure environment with tight time frames.

Systems Programming Manager

Manage technical personnel in providing technical support for the operating systems, communication and utility applications of an MVS/ESA environment; provide primary support to the systems programming team. Assumes technical capabilities and limitations of programming languages, operating systems and communication protocols.

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- Strong written and verbal communication skills. A bachelor's degree and a minimum of ten years experience in applied tech support of IBM MVS/ESA, MVS/390, and AS/400/390 is desired.
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Network Management Consultant

Candidate will collect user requirements and architect enterprise solutions. Preferred protocol experience is SNMP, with experience in specific platforms (e.g. HP OpenView*) a definite plus. The applicant should have development experience (C or C++) and have strong written and oral communication skills.

Multimedia Consultant

Ideal candidate should have development and implementation experience with various multimedia technologies (image, video, voice, etc.) and understand the network requirements (configuration, compression schemes, etc.) that the technology demands. The candidate should have working experience with relational/OO database technology as it relates to image and voice information handling.

UNIX Applications Development Director

Candidate should have a proven track record in developing state-of-the-art UNIX, relational database related business applications. The position requires both technical savvy and managerial skill sets. This individual should be able to interface with Fortune 500 clients and produce a functional business requirement document. Candidate should possess C++ and/or object oriented development skills.

Network Consultant

Candidate will collect user requirements, architect enterprise network solutions, and assist with network implementations. Design and implementation experience with the TCP/IP, SPX/IPX, DECnet, AppleTalk, NETBIOS, LU 6.2, bridging, and routing protocols is required. Experience with NetWare, LAN Manager, UNIX, SNMP based management systems and transmission equipment is a plus. The applicant should have LAN/WAN design experience and have strong written and oral communication skills.

Project Manager

Ideal candidate should be thoroughly versed in full systems life cycle, project management techniques, and software tools. Experience required with preparing project plans, managing multiple projects simultaneously, and controlling costs. The applicant must also possess strong interpersonal, written, and presentation skill sets. The position requires a technical understanding of LAN/WAN networks, client/server architecture, and system management. Experience in developing implementation plans, project schedule, and cost control mechanisms is required.

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In search of better phone support

Raymond Geitka had a simple question: Was the latest version of Textra, the standard personal computer-based word processor being used at his organization, available in a network version? One day and seven long-distance phone calls to various parts of the country later, he got his answer — but not from Santa Monica, Calif.-based Peter Norton Computing, Inc., the company that sold him the package. "I just got bounced from one person to another," says Geitka, director of computing services at the University of Michigan in Dearborn.

The road to getting answers to software and hardware questions over the phone is all too often just as long and winding as Geitka's. You can take the time to establish strong phone support from your vendor, but on the whole, information systems workers say it's not uncommon to suffer long waits on telephone hold, "not my department" brush-offs or — the worst — incorrect answers from technically inept people.

A survey by the Corporate Association of Microcomputer Professionals (CAMP) in Northbrook, Ill., shows that callers in search of support were placed on hold more than 77% of the time. Once on the line, support representatives weren't able to provide a solution 33% of the time.

Not all bad

It's not as though everyone is unhappy with telephone support. Research from Datquest/Ledgeway in Framingham, Mass., shows that approximately 25% of users say telephone support is "ideal," and only a small percentage says it's "unacceptable." Fifty percent rated support "acceptable," which they defined as having between 67% and 87% of their questions answered correctly on a first call.

Although CAMP's results fall within this "acceptable" range, it's by a small margin, which indicates that vendors are not passing the support test with flying colors.

It doesn't help matters that it's new employees who often staff support lines. Another complication is the merger, acquisition and consolidation of companies in recent years. This was the case for Geitka. Although he had purchased Textra from Peter Norton Computing, the product was developed by another company, which is where he eventually found help. "Sometimes you have to go to the source in order to get an answer, but finding that source can be difficult," Geitka says.

Connections helpful

One way to get better telephone support is to know someone. IS managers suggest cultivating a personal relationship with someone in the vendor organization, through phone calls and other interactions. They warn to avoid overburdening "inside" sources by calling only when the problem can't be solved through the formal support hierarchy.

Offering to be a beta-test site or doing a vendor a favor can also result in special treatment. "If you are willing to work with your vendor, they will go the extra mile for you," says Dave Burns, manager of systems and programming at Mueller Brass Co. in Port Huron, Mich. "Because Wang service people know you personally and can borrow equipment from us in a pinch to service other customers, we get rapid response when we really need help."

Part of learning the ropes is keeping careful records of who you last spoke with and how helpful they were.

The Fuller Co. carefully tracks the quality of support for all 12 of its software vendors and ranks them annually, says David Pinkus, manager of MIS at the Lehigh Valley, Pa.-based firm.

When it's time to renew a licensing contract, it helps to know the kind of service the vendor has been providing, Pinkus says. "Whenever I meet with a vendor, I'll always bring up where they rank in our survey and ways they can improve," he says.

It's hard to predict from the outset what kind of telephone support you're going to get. The software vendor you used 12 months ago may be dead last on Fuller's list — is one of the largest and best-established software vendors in the world.

"You have to go through 27 different levels of voice mail in order to get to the right person," Pinkus says. On the other hand, another Fuller vendor is "one guy who works at home and debugs software while holding a baby in his arms," he says. "He gets a very decent rating because we can always reach him."

A lot of finger pointing goes on among vendors, Pinkus adds. "If a vendor doesn't have an answer or the resources to get me an answer, I'd rather they were honest about it," he says. "Then at least I know where I stand."

LaPlante is a freelance writer based in Palo Alto, Calif.

Support wish list

Here's what users find ideal in a vendor's telephone support offerings:

A fax-on-demand service that faxes answers to complex technical questions.

Problem-tracking software to track a customer's history of problems and support requests.

Notification of where they stand in the "hold queue" and how long they are likely to wait.

Easier access to the developers of the product.

Elimination of "callbacks" for simple or routine questions.

Access to an on-line bulletin board to leave support requests and have them answered electronically.

Access to an on-line database of common technical problems and solutions.

Expertise on the ways different products from different vendors interact.
Hughes Aircraft, the aerospace electronics giant, is a full products company involved in the research, development, manufacturing, and support of over 100 different technologies. With about 55,000 employees in Southern California, Arizona, and Colorado, Hughes provides 12,000 separate products, services, and functions to the defense, space-related, and commercial industries worldwide. Since John Wilhite’s job as Manager, Corporate College Relations is to oversee the recruitment of the country’s top technology graduates, he advertises in Computerworld’s Campus Recruitment Edition.

“Every year, Hughes recruits somewhere between 250 and 300 new graduates. The mainstream of our hiring centers around students with engineering backgrounds. Generally about 75% of our student recruits are in the electrical, mechanical, and computer engineering fields. Another 20% or so have scientific backgrounds, primarily in computer science and physics. The balance of our recruiting, then, is for MBA graduates with strong orientation in MIS or CIS. With one advertisement in Computerworld’s Campus Edition, we get unique reach to all three of our student audiences.

“During the past few years, computer engineering and computer science graduates have become an increasingly important part of our recruitment efforts. So we need a publication that not only targets the exact audience we’re trying to reach but also delivers quality responses. Based on the recruitment success of our first advertisement, we know Computerworld’s Campus Edition gives us the most direct contact with our target audience of computer and engineering graduates. It definitely generates quality responses from students with the right types of backgrounds.

“In addition to delivering advertising results, the issue’s Annual Student Survey serves as an important research tool. Upon receiving data on how students typically view Hughes Aircraft, we felt we needed to strengthen our image in this area. For continued success in recruiting top technical talent, we find feedback like this invaluable.

“To be effective, it’s essential that our recruitment advertisement appears in a quality publication that students will read. We know Computerworld’s Campus Edition, with its meaningful content, will have a long shelf life. Clearly, it’s a publication that students will take back to their rooms, pass along to fellow students, and keep for future reference. That means our advertisement in Computerworld’s Campus Edition keeps right on working long after the issue date.

“Again this October, we’ll be relying on the cost-efficient reach of Computerworld’s Campus Edition to take our recruitment message to engineering, computer, and business graduates at leading colleges and universities nationwide.”

Computerworld’s Campus Recruitment Edition. On October 31, 1992, this exclusive edition reaches 150,000 top students enrolled in America’s top computer and engineering degree programs. It’s an advertising vehicle that works for John Wilhite at Hughes Aircraft. And it’s your best way to recruit America’s best computer career students. For all the facts, call John Corrigan, Vice President/Advertising Director, at 800/343-6474 in MA, 508/879-0700.

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FOCUS ON SOFTWARE

Software Scene

Donaldson, Luftin & Jenrette Securities Corp.

New York

Aug. 1, 1992

Slowdowns in fiscal second-quarter earnings hurt many software firms’ stock prices; only a handful have climbed since the end of May. Investor enthusiasm will not spark until earnings have either stabilized or accelerated.

Expect client/server offerings from Cognos Inc. (COGN), which is slated to ship PowerHouse Windows for Unix this summer. Business is churning faster for Ross Systems, Inc. (ROSS). The company, which traditionally catered to Digital Equipment Corp. (DEC) users, is now targeting — and making progress in — Unix and client/server markets as well.

LISA DAVIDSON

Assembling software

A gathering of current brokerage ratings

STOCKS

Computerworld Friday Stock Ticker

CLOSED PRICES FRIDAY, AUGUST 21, 1992

TOP PERCENT GAINERS

TOP PERCENT LOSERS

Table with stock symbols, names, and percentages.

PC and Workstations

Table with stock symbols, names, and percentages.

Large Systems

Table with stock symbols, names, and percentages.

Software

Table with stock symbols, names, and percentages.

Communications and Network Services

Table with stock symbols, names, and percentages.

Semiconductors

Table with stock symbols, names, and percentages.

Peripheral and Subsystems

Table with stock symbols, names, and percentages.

Services

Table with stock symbols, names, and percentages.

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Trade pact could spur exports to Mexico
Agreement offers vendors alternative to Far East manufacturing but could cost domestic jobs

By Gary Anthes
CW STAFF

WASHINGTON, D.C. — U.S. vendors of computer hardware, software and services said the recent free-trade agreement with Mexico will boost sales in the fastest growing market in North America and will provide an attractive alternative to Far East manufacturing sites.

The proposed North American Free Trade Agreement (NAFTA) preserves the tariff elimination schedule in the 1988 U.S.-Mexico Free Trade Agreement, and it will phase out the high duties on computer hardware imported into Mexico from the U.S.

Those tariffs boost the cost of U.S. products in Mexico by about 10% for parts, 15% for subassemblies and 20% for complete systems. It will have little impact on U.S. vendors that are pursuing Canadian business.

Big business
"Mexico is our fastest growing Latin American market, even with the 20% tariff," said William Fanzig, manager of international government affairs and trade at Apple Computer, Inc. "As the tariff phases down, obviously that will have a significant impact on our business."

However, some industry sources said the greatest benefit will not be the reduced tariffs as much as NAFTA's stimulus to the Mexican economy as a whole.

Borderless business
Vendor's hope the recent North American Free Trade Agreement accelerates growth in the Mexican and Canadian markets

U.S. exports of books and recorded media including software to Canada (in billions)

<table>
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<th>Year</th>
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Source: Office of U.S. Trade Representative

IBM jump-starts OEM business with chip deal
Repyle says IBM's competitive prices key factor

By Michael Fitzgerald
CW STAFF

SAN JOSE, Calif. — IBM recently landed its first chip customer. Repyle Corp., a $50 million manufacturer of Personal System/2 Micro Channel Architecture (MCA) based here, agreed to sell systems that use IBM's SLC microprocessor and random-access memory.

The OEM deal offers a glimpse into how IBM is approaching a new business that it hopes will generate billions in revenue by 1995 (CW, June 15).

Steve Petracca, Repyle's president and chief executive officer, said the company has "the ability to take a while for them to close other deals" for the SLC.

"It is not nearly as easy for them to work with other people as it was for me," Petracca said. "I know which hurdles to jump."

Analysts contacted adopted a wait-and-see attitude about whether this signals that IBM can play a significant role in the OEM market. "If they can't get Repyle, they can't get anybody," said Richard Zwetchkenbaum, an analyst at International Data Corp. in Framingham, Mass. Zwetchkenbaum described Repyle's focus to be on MCA, OS/2 and having a former IBM insider as head of the company.

Perecussions pay off
Petracca said he approached IBM about selling the chip to him when it was first announced but was rebuffed. He said his refusal to take no for an answer eventually helped sway IBM. Once IBM agreed to talk with him, the pace of negotiations was surprisingly rapid.

"I said, 'We can get this deal done in 30 days and ship in 60 days,' and they thought I was crazy, initially," Petracca said. In fact, the first Repyle deal with IBM consists of SLCs are scheduled to ship within 90 days of initial talks. "I'm sure they'd rather close a big deal with Michael Dell or NCR, but [those companies] can't move as fast as we can," he said.

An IBM spokesman said Repyle's small size did help close the deal quickly.

Petracca said he credited IBM with moving "very aggressively, from both a price and delivery standpoint. This isn't the same company I worked for."

Petracca said that IBM's willingness to sell the chip to other companies will generate "the same sales that Michael Dell or NCR might lose," he said.

"I'M SURE they'd rather close a big deal with Michael Dell or NCR, but [those companies] can't move as fast as we can," he said.

Steve Petracca
REPLY

Nonetheless, "We've committed to our customers that we will save them a certain percentage. We have the capability to do that," Petracca said.

Repyle recently cut prices by as much as 43%. The company's systems now sell for half the price of comparable IBM systems.
Which path? Is the ticket to the CIO suite an MBA? Or a master’s in computer science? Or both? Next week, Computer Careers traces the career paths of Nick Rudd, CIO at Young & Rubicam, and Rich Nydick, vice president of IS at the Hibbert Group, to answer the age-old question. Their experiences may surprise you.

INSIDE LINES

Better late...

► Computer Associates is definitely getting serious about microcomputer software. At the opening of last week’s Systems Software Conference in New Orleans, Phyllis Pallacio, the conference chairwoman, told the 1,200 attendees that CA was offering up to $1,000 worth of free micro software to each user in attendance. Though micro software sales make up only 10% to 12% of CA’s $1.5 billion in annual revenue, the Islandia, N.Y., software giant hopes to leverage its large mainframe-oriented customer base with downsized PC-based applications.

Up the down escalator?

► It looks like IBM is not far away from hitting the mass market channels with new machines. In preparation for its big Sept. 22 product blitz, Big Blue is loading the channel with new configurations that have preloaded software — although whether the software is Windows is unclear. Sources say Service Merchandise will sell a $1,900 20-MHz 486SX PS/1.

Rainbow over the horizon

► Late September marks the introduction of the first color pen-based system, Dauphin Technology will announce the Dauphin 5500 Pentop, a 5½-pound system with an STN (passive-matrix) screen. Inside is a 25-MHz Intel 80386SX chip, 4M bytes of RAM and an 80M- or 130M-byte hard drive. Pricing was not available. IBM and NCR are expected to bring out new versions of their pen-based products next month as well.

Server flexing

► One user interested in Compaq’s upcoming server announcement, which sources have pegged for NetWorld in October, said he expects to see a 100-MHz 486 machine from the folks in Houston. He also expects to see a radical SystemPro redesign, which could reflect the TriFlex architecture that has already been talked about. But some users are worried about compatibility between the new and the old Prox.

Stacked DEC

► DEC will shortly disclose a modular storage strategy replete with plug-and-play products. Users will be able to integrate a range of controllers and swap adapters for DEC’s CI, VMS or SCSI-2 bases. These can then be attached to disk drives ranging from 2.3 in. to 5½ in. or in a mix of tape and optical devices. Initial products will include a box that combines CI, DSSI SCSI and also FDDI, sources said. Software RAID implementations will also be available so users will be able to reconfigure their disk arrays to be compliant with either RAID-1, -3 or -5, according to an application’s needs.

Parents spurned

► Not all Sears and IBM enterprises have signed up for the companies’ new joint network outsourcing venture, Advantis. IBM/Sears joint venture Prodigy, the consumer information company, just extended its contract with Advantis rival BT Tymnet for another few years.

Aloha means hello and goodbye

► As their employer filed Chapter 11 last week, selected high-producing sales reps from Wang Labs parted in Hawaii, blissfully removed from the hoo-ha back on the mainland. The vacation was part of Achievers’ Week, a program begun during Wang’s heyday under former President John Cunningham to reward salesmen who beat quotas.

Word is that Apple USA Chief Robert Puette has fallen out of favor with the company’s directors and may soon resign. Industry watchers say ex-HP exec Puette alienated Apple top brass with his reluctance to enter the mass market now ruled by IBM-compatible PCs. Puette’s stature took another hit last month when he was moved under Jan Diery, formerly his counterpart at Apple Pacific. If there was a soap opera about Apple, would they call it As the Worm Turned? Bad news aside, phone, fax or CompuServe news tips to News Editor Alan Alper at (800) 343-6474, (508) 875-8581 or 76537,2413, respectively. Or try Computerworld’s 24-hour voice-mail tip line at (508) 820-8555.

NEXT WEEK

While OS/2 Version 2.0 holds promise with its ability to multitask DOS and Windows applications, potential users with certain mixed-vendor environments need to be cautious, consultant Fabian Pascal says. Pascal, who has a non-IBM hardware setup, reveals some OS/2 quirks and how to get around them. See In Depth.

TRENDS

The status of application backlogs, Unix and other software issues in Japanese and U.S. companies

Opening up

27% of responding U.S. IBM mainframe sites are very likely to implement some form of Unix in the next 12 months compared with 18% of Japanese sites

Japanese mainframe U.S. mainframe

$16% 18% 16% 18%

Already installed Scheduled to use Possibility No possibility

Thinking growth

Japan’s software market is relatively small compared with the U.S., but it’s growing fast

1992 software market growth Japan U.S.

Ease of use Features Price Support Documentation

28% 23% 15% 13% 8% 13% 23% 24% 15% 10% 6% 18%

Backlog fix

Application backlogs are common for all, but preferred solutions vary considerably

Top 3 Japanese solutions: Top 3 U.S. solutions:

Limit investment in hardware/software 38% More use of productivity tools 31%

Hire or develop IS professionals 17%

Development support tools 14%

From companies with more than 1,000 employees


Computerworld

AUGUST 24, 1992

110
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