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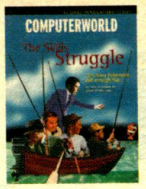

The skills struggle
It's time to restock the global IT labor pool. **Follows page 60**

COMPUTERWORLD

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DEC 07 1998

Grocer trips over SAP

EARLY-RELEASE R/3 STYMIES SYSTEM PERFORMANCE

By Craig Stedman

A SECOND RETAILER in the grocery industry is having major problems installing a retail-specific version of SAP AG's R/3 application software, *Computerworld* has learned.

Corporacion de Supermercados Unidos, a San Jose, Costa Rica, company that runs about 100 grocery stores in Central America, has been wrestling with multiple performance problems since going live with an early-release version of SAP Retail 4.0 in October.

CSU executives last week said the problems have slowed down key business tasks such as processing merchandise orders from stores, reporting their daily sales and shipping goods from the company's central warehouse. That in turn is forcing CSU to assign teams of workers to manually clear transactions around-the-clock and then to clean up incorrect data produced by all the manual work.

Uploading daily sales reports for 78 stores takes at least 40 hours.

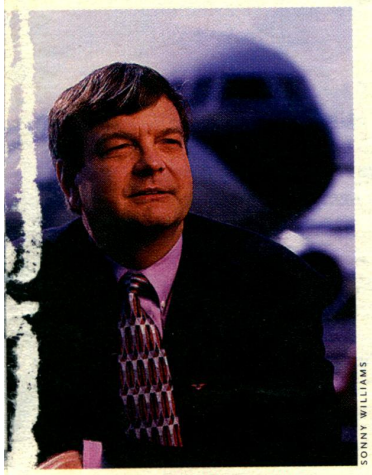
"We knew we were working with a new system that still had bugs, but this is much more than we ever expected," said Hugo Pereira, SAP project manager at CSU. As a result, he added, the retailer has had to slow the rollout and could exceed its $7 million project budget by as much as $2 million.

Raul Vejar, SAP's managing director for Mexico and Central America, said many of the problems at CSU stem from its use of the early release of SAP Retail 4.0, instead of the production version that became available last summer.

The production version "is the one that we want our customers to go live with," Vejar said, and upgrading to that "hopefully will take care of most

SAP, page 89

Delta flies middleware beyond its expectations


SONNY WILLIAMS

Delta's Mark Whitney: "We would rather buy something off the shelf" than devote staff to proprietary middleware upkeep

By Robert L. Scheier

MARK WHITNEY and Larry Lockett had extra reason to be grateful this Thanksgiving.

A new passenger boarding system worked as planned during the holiday — even though a crucial bug fix from IBM arrived too late to install before the Thanksgiving travel crunch.

That's good news for Delta Air Lines Inc. because the application — which relied on Whitney and Lockett's messaging infrastructure — automatically updates gate agents with crucial information, such as when a connecting flight touches down or when another agent

Delta, page 88

Exxon/Mobil sets up mega SAP project

By Julia King and Kim S. Nash

EXXON CORP.'S $75 billion takeover of Mobil Corp. will create the world's largest corporation and what could be the world's largest SAP systems integration project.

But combining the two companies' processes into a single, enterprise SAP system is just one of several critical information technology projects.

The merger of the two oil giants also is expected to yield cost savings in the billions, but pinpointing IT's contribution to that financial bonanza remains a puzzling prospect at best.

The reason: After consolidating data centers and redundant networks, there isn't a lot left to cut from either company's already lean IT organization.

The IT groups "at both companies already have cut costs significantly and become very efficient operations, so you really wouldn't expect there to be much left to cut," said David

Merger, page 89

Boeing layoffs sidestep IT

By Jaikumar Vijayan and Thomas Hoffman

The major restructuring that The Boeing Co. announced last week will mean thousands of layoffs — but probably not in information technology areas.

That's because the $56 billion aerospace giant is consolidating 400 computer systems in its commercial aircraft division in a massive overhaul of its manufacturing processes.

Seattle-based Boeing is counting on such technology projects to turn its fortunes around. So it's likely to leave its 7,000-person IT group intact, said IT and aircraft industry analysts.

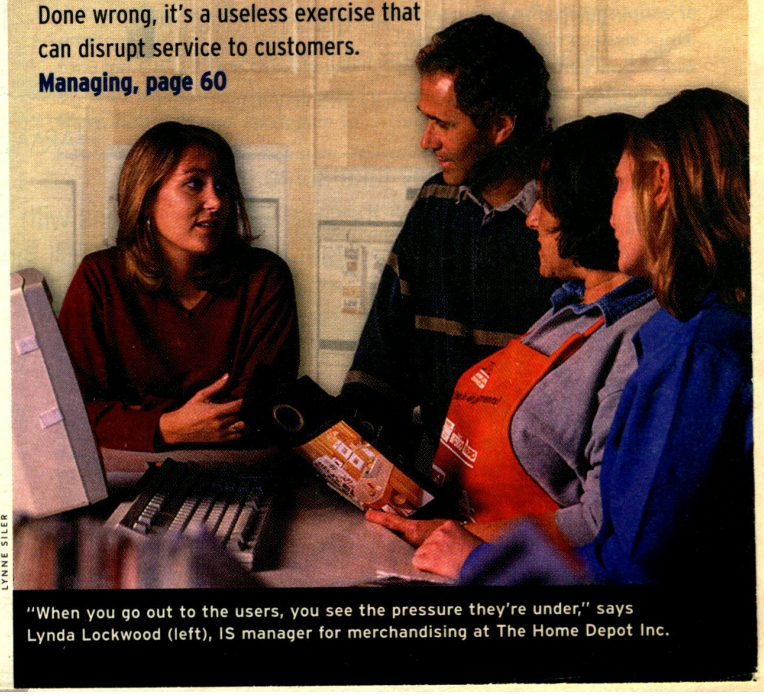
"They've been basically operating their plants on 1970s

Boeing, page 88

WALKING *the* WALK

In their holy quest for business/IT alignment, many companies require IT people to spend some time working alongside cashiers, field technicians and other front-line employees, senior editor Kathleen Melymuka reports. Done right, it gives IT professionals a clear view of what end users really need from their systems, such as faster response times. Done wrong, it's a useless exercise that can disrupt service to customers.

Managing, page 60


LYNNE SILER

"When you go out to the users, you see the pressure they're under," says Lynda Lockwood (left), IS manager for merchandising at The Home Depot Inc.

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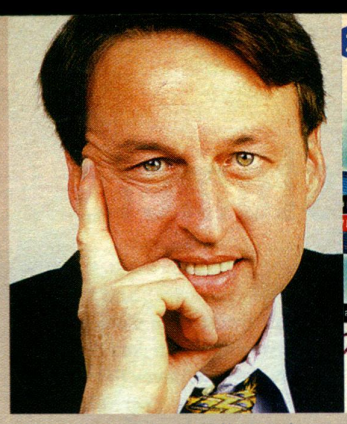
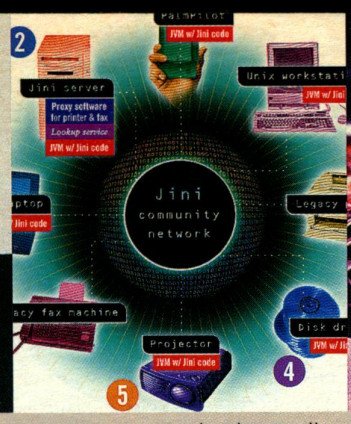
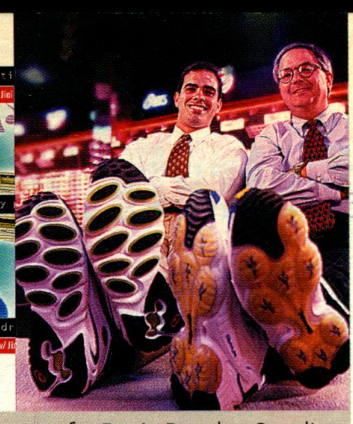


The Net is making seller and buyer relationships three-dimensional. *Net Future*, by Chuck Martin. **In Depth, page 69**



Jini, Sun's new technology, will let users plug devices into a network and immediately start work. **QuickStudy, page 29**



Just for Feet's Brandon Scordino and David Meany say an intranet helped earn record profits. **Internet, page 45**

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EXECUTIVE Briefing

News summary for senior managers

■ **The Exxon/Mobil merger may create the biggest SAP implementation ever, as the two try to merge separate ERP systems. Both companies run very lean IT organizations, however, and year 2000 is looming, so resources for the systems merger may be scarce. After 2001, analysts expect the joint company to pare down IT again. In the meantime, it may retire many techies and rehire them as consultants, analysts said.** Page 1

■ **SAP's retail version of R/3 is causing fits at a Costa Rican grocery chain, which may see its planned $7 million rollout hit $9 million. Orders, reports and distribution functions are slow, forcing the company to clear transactions manually, which introduces more errors. SAP is working on problems but said beta software is part of the cause. A U.S. chain had similar problems, prompting it to shelve the project, but others have dealt with bugs and recovered.** Page 1

■ **Many companies find that putting IT people in the jobs of end users for a while helps them learn how to tune technology for business. But if it's done wrong, the technology people can get in the way, hindering the process they're supposed to help. Done right, it provides insight on the little things — such as how a spreadsheet looks — that make a big difference to end users.** Page 60

■ **Surveys and CIOs both say the role of the top corporate technologist is becoming more focused on the business. But CIOs are split on the value of outsourcing — oft-cited as a panacea for the business-focused CIO. Some think it will off-load mundane work to help them hob-nob and strategize in the executive suite; others think long-term deals will hinder their ability to respond to business changes.** Page 41

■ **FreeMarkets OnLine is applying online-auction technology to the traditional corporate bidding practice. It helps manufacturers put requests for proposals online and lines up suppliers. Users say they save on supplies but acknowledge that some large suppliers resist what can become an electronic bidding war.** Page 45

■ **Cessna started its year 2000 repair work in 1995 and has a solid remediation plan in place this year. Program manager Sandy Gieber says he's worried about how prepared the FAA and Cessna's partners are, but he adds that the company will keep operating right through the deadline. "The world isn't going to end Jan. 1, 2000," he says.** Page 41

■ **Half of all nonbusiness bank accounts are unprofitable to the bank. And more consumers are putting money into mutual funds and other nonbank investments. To improve that picture, banks are using data mining and other techniques to identify and cater to their most profitable customers and figure out how to cut the cost of serving the rest.** Page 14

Online this week

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www.computerworld.com/more

Exxon/Mobil

CONTINUED FROM PAGE 1

Burkett, president of Compass America Inc., an IT performance consultancy based in Reston, Va.

Mobil, for example, took a big hit in 1995, losing 30% of its IT staff as part of a companywide restructuring designed to save $1 billion. Exxon, meanwhile, has been on a cost-cutting binge since the mid-1980s. Now it's banking on saving $2.8 billion as part of the Mobil takeover, as it cuts 9,000 jobs, closes offices and shares technology.

Meanwhile, the combined oil behemoth will face enormous systems and cultural integration challenges. They include merging separate SAP software systems to support a combined global operation with annual revenue of more than $203 billion. Last year, Mobil and Exxon together employed about 122,000 workers.

"There's going to be an awful lot of work doing SAP-to-SAP implementation," said Howard Anderson, president of The Yankee Group, an IT consulting firm in Boston.

Exxon is further along with its SAP implementation, which began in 1994. Mobil was due to begin its SAP project last month and complete it by the middle of next year, according to a July press release from SAP.

BUSY, BUSY

Exxon and Mobil "also have to deal with the fact that almost everybody at both companies already has a full plate between [separate enterprise resource planning] projects and year 2000," said Barry Brunsman, an energy industry analyst at Deloitte & Touche Consulting Group/ICS in Chicago.

In statements filed with the Securities Exchange Commission earlier this year, Exxon reported that it has already spent $130 million on year 2000 work, which it plans to complete by year's end.

Mobil reported that 68% of its year 2000 work had been completed at a cost of $89 million. Additionally, Mobil said it had spent another $154 million on new systems to improve business operations.

"In a merger, cost savings are expected to come out of IT, but the reality is that their project slate is full, and they don't have the ability to let people go. They're also creating a brand-new, huge project in systems integration with SAP. This could potentially compromise other big projects," Brunsman said.

It's only after that integration is completed — probably in 2001 — that the IT employment picture will change, analysts said.

Then, fewer IT employees will be needed, resulting in a combined IT organization about the same size of Exxon's current IT group. Officials at Exxon and Mobil declined interview requests.

"What we'll see during the integration period is a lot of [IT] people being offered early retirement, then hired back as consultants" until the integration work is finished, said Mike Weiner, an energy industry analyst at Computer Sciences Corp. in Boston.

Ironically, it was the generally superefficient and innovative use of IT on the part of oil companies that helped create the current oil glut — and consequently caused profit margins to shrink, said Bart Taylor, an energy industry analyst at Aberdeen Group Inc. in Boston.

Exxon, Mobil and their rivals all have used petroleum-exploration technologies so well that they have found and are able to produce more oil than customers are demanding. In the past few months, that has caused prices to drop to an 11-year low of less than $12 per barrel.

By merging, Exxon and Mobil hope to form back-office systems that are just as efficient, Taylor said. "It is the only way for [energy companies] to survive. Driving down internal costs is a dire mandate for the industry." □

MAJOR SYSTEMS AT EXXON AND MOBIL

PHOTOGRAPH BY THE ASSOCIATED PRESS

EXXON'S SOFTWARE

- SAP R/3 in the U.S.
- J. D. Edwards ERP in Asia, Australia, South America and other regions
- PeopleSoft human resources
- Microsoft Web browsers and servers
- Oracle databases

MOBIL'S SOFTWARE

- SAP AG R/3 in the U.S.
- J. D. Edwards ERP in Asia, Central America and South America
- Netscape Communications Web browsers and servers
- Oracle databases

Grocer

CONTINUED FROM PAGE 1

of the issues" at CSU. But he added that SAP's German development labs also are working to fix additional problems for the retailer. Those fixes are due to be finished next month.

CSU's difficulties follow an October decision by Nash Finch Co., a Minneapolis-based food wholesaler and supermarket operator, to shelve most of its $76 million SAP project after development delays made it impossible to install the software in time for 2000 [CW, Nov. 2].

SAP is making a big pitch to retailers, which have much more complex processing needs than the manufacturers that are R/3's main audience. But only two U.S. companies have gone live with SAP Retail thus far, and CSU is the first user in Central America.

CSU officials said they went live with the early-release software to get SAP Retail installed in time for the holiday season and the start of the company's new fiscal year in October. The retailer isn't convinced yet that the production release of SAP Retail 4.0 will solve all of its problems, they added.

Jim Shepherd, an analyst at AMR Research Inc. in Boston, said the so-called first customer shipment release that CSU installed is akin to beta-test code for SAP.

Experienced R/3 shops start running real applications on such releases "all the time, but it's unquestionably a risky thing for a brand-new user to do," Shepherd said. And the unproven nature of SAP's retail technology "further complicates things" for CSU, he said.

U.S. retailer MJDesigns Inc. turned on the production version of SAP Retail 4.0 in September, using the same mix of a Windows NT server and an Oracle Corp. database that CSU has installed.

MJDesigns ran into "some minor performance issues, but those were resolved quickly and were just a matter of tuning," said Colby Springer, CIO at the chain of 57 arts and crafts supply stores based in Coppell, Texas. "We're surviving quite well."

On the other hand, CSU still is running its old homegrown AS/400 applications in tandem with SAP Retail. That, along with all the manual work that employees are doing, "has created a very negative environment around SAP" within the company, said Pablo Garro, who represents CSU's logistics department on the project team.

Uploading daily sales data into R/3 takes as long as an hour per store, too much time for a company with 78 stores in Costa Rica alone, said Sergio Ortiz, a project team member who works in store operations at CSU. As a result, the company's corporate databases "just aren't getting updated," he said.

CSU has stopped installing SAP Retail at stores for now, Ortiz said. The company also put off going live with SAP's product replenishment and promotions modules, and Pereira said it may temporarily stop processing payments to suppliers on R/3 and go back to the AS/400 instead of shuttling data between the two systems.

"We're still convinced we can take this on, but we're concerned that other people in the company aren't as supportive anymore," Garro said.

"At the lower levels, we're worried that people are losing faith," he said. □

Banking site relies on Domino

By Roberta Fusaro

UNION BANK OF CALIFORNIA N.A. in Los Angeles last week officially launched its online banking service based on Lotus Development Corp.'s Notes client and Domino server.

Officials at the bank and at Lotus said it marks the first use of Domino Web server to conduct online banking.

New customers can open accounts at the Web site, and current clients can customize their Web page view to transfer money among accounts, look at balances and get investment advice stored on the Domino server.

The service has been available to select customers since mid-November and was made generally available last week.

Site creators took into account the best practices of other banks' Web banking sites, said Heather Robinson, vice president of interactive markets at the bank. So far, the site is collecting 200 to 300 account applications per day, she said.

Union Bank had to establish the service to keep up with the Joneses, Robinson said. "It's almost become a commodity [for bank customers] to be able to conduct transactions online."

The bank already used Notes and Domino in-house for messaging and workflow applications and wanted to leverage its investment, Robinson said. □

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Jini

DEFINITION: Jini is networking software created by Sun Microsystems Inc. as an extension of Java, the company's cross-platform programming language. It will be available in the second half of next year. Jini's goal is to enable the creation of simpler, more flexible networks. It will enable devices to immediately start working after being plugged in directly to a network (see diagram, below). Once the devices are connected, Jini will provide a way for machines, applications or devices to automatically "discover" and share resources called "services" (see Jini Speak glossary). The ability to download and move Java code or objects over a network is central to Jini's architecture. It requires very little memory — about 40K bytes of Java code — which will let it run in devices with very low memory, such as printers, personal digital assistants and cellular phones.

JINI SPEAK

Discovery: This is the "Hello, I'm here" piece of Jini — the identification process by which a new machine or device joining the network becomes a part of a Jini "federation" or network group and advertises its services to other users. When a Jini-enabled device plugs into the network, it drops a 512-byte Discovery packet.

Lookup: A key component in the Jini system, Lookup is the equivalent of a network bulletin board for all available services. Lookup stores pointers to various services on the network as well as code for other services. As Java code that resides on the Jini server, Lookup keeps track of what's on the network and what services they can provide to the others.

Proxy: This is the piece of Java code that moves around from device to device acting as the front end for all the Jini-enabled or legacy systems. The proxy essentially tells the client how to use the device. For example, it may include a graphical user interface that shows the user how to work the network projector. In the PC world, the equivalent would be the device driver.

Services: Arguably the most important concept behind Jini, services encompass any useful function that networked devices or software components provide. A service can be computation, storage, a communication channel, a printing function, a hardware device or even another user.

■ *Are there technologies or issues you would like to learn about in QuickStudy? Send your ideas to QuickStudy editor Stefanie McCann at* ***stefanie_mccann@cw.com***

HOW IT WORKS

ILLUSTRATION BY GREG STEVENSON

1 A laptop or other device is plugged into the network, and the Jini code in the Java virtual machine on the device broadcasts its presence. The user requests services that are available, and icons appear on his screen.

2 The Jini Server and its Lookup Service discover the new laptop and register it on the network.

3 Say the user wants to print a presentation. He selects the print option, which launches a query to the Lookup Service on the Jini Server. The server instantly sends proxy code back to the device. The legacy printer, which has no Java or Jini code at all, receives the printing instruction via that proxy code and prints the document.

4 Next, the user decides to store his presentation on the network and selects "save" on the file menu. His laptop queries the Lookup Service, which identifies the Jini-enabled disk drive to the laptop. The presentation is saved to disk.

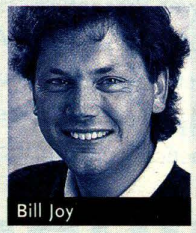
5 Finally, the user wants to display his work on the projector, which already has Jini code embedded in it. He selects the projector icon on his screen, which displays the user interface he needs to use that service.

Q&A

Computerworld executive editor Maryfran Johnson recently spoke with Bill Joy, inventor of Jini and vice president of research at Sun Microsystems, about the relevance of this new, object-oriented technology.

Q: *What's the simplest, quickest way to explain Jini to a businessperson?*

A: It's "plug 'n' work." Devices can plug in and work immediately. A huge complaint with computers today is their complexity. Jini provides a way of having a range of devices on [a company network] providing services that are easy to use.


Bill Joy

Q: *Is the Jini technology primarily for consumer devices, or is it relevant to Fortune 1,000 businesses?*

A: It's widely recognized that most new devices in the next 10 years are going to be personal communicators, Internet phones and embedded devices. People in corporations have these devices, too, and they will need to be managed and work together.

Q: *How important is having a robust, widely accessible wireless network in Jini's future?*

A: We believe wireless will happen, but we designed Jini to work with devices people have today, and especially well with devices that are coming, with the network interfaces built in.

Q: *When will Jini products start reaching the market?*

A: Our goal is to have a variety of Jini products out toward the end of 1999, embedded in appliances. But you can certainly run Jini services on existing Java-based products now. More than 30 companies have already licensed the Jini source code, but I don't think we really know who's developing what. We're not trying to be a referee.

Q: *When will we see the first large-scale deployments of Jini?*

A: That will take at least another year. For example, a hotel could make a decision late in 1999, if it was an early mover, to deploy Jini devices [such as printers] on its network. Any early adopter of handheld devices in vehicles would be [a likely Jini adopter].

Q: *How do Java and Jini relate?*

A: Java is a programming language that's about writing portable software. Jini is about making networks of devices and services that work together. It's about connecting things easily with Java objects.