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Novell, USL seek NetWare integration

Windows NT," said Joe Menard, USL's marketing director.

Menard and Novell executive vice president John Edward said the plans were preliminary, with more details coming in 90 days. The acquisition is expected to be completed in March.

Analysts and customers generally welcomed the Novell-Unix effort.

"Unix can certainly benefit from some technologies in NetWare and vice versa," said Jamie Lewis, analyst at The Burton Group, in Salt Lake City. "[Novell] needed an operating system to do some things they have said they wanted to do."

"This makes Unix more attractive because Novell owns most of the LAN market," said Sally Atkins, a consultant for John Hancock Mutual Life Insurance, in Boston. "It would have taken Univel several years to ramp up to the level that Novell already has."

"If they want to add functionality to interface more seamlessly with PC networks, that's great," said Roy Shilling, MIS director at Arco Exploration and Production Technology, in Plano, Texas.

But some Unix notables voiced some reservation. "We are concerned about having open specifications outlined and available, and low royalty rates," said Scott McNealy, Sun Microsystems Inc. president. Sun buys the base Unix System V.4 operating system from USL for the Solaris OS.

"Unix has been fragmented, which is one reason we didn't support it," said Philippe Kahn, Borland CEO. "Now we are going to step up our support."

Novell sent out assurances that Univel will continue to provide a "productized, shrink-wrapped" version of units to the retail channels, no matter what level of NetWare integration is put into Unix SVR4.

Microsoft, meanwhile, threw cold water on the Novell/USL merger. "Many companies have tried to make Unix a viable alternative on the desktop, but it's just not something customers want," said Dwayne Walker, Microsoft's director for the Windows NT group.

"The market is still Microsoft's to lose," concurred Paul Cubbage, an analyst with Dataquest, in San Jose, Calif.

—Vance McCarthy and Jim Hammett contributed to this story.

APPLE / from page 1

Apple to announce midrange Mac line

Prices have still not been set by Apple, but they are expected to be in the same range as existing products, sources said.

The most widely anticipated new product is the PowerBook 165c, a color version of the PowerBook 160 with a 640-by-400, passive matrix, color LCD.

Apple's first color PowerBook will sport a 33-MHz 68030 processor and a 9-inch display that supports 256 colors.

Later this year, Apple will follow up with the 185c, a color PowerBook based on the 180 model design but with an active matrix display and the capability to use as much as 24 megabytes of RAM.

Apple expects to start the 185c at $4,995 and the 165c at around $4,000, according to sources.

"Apple may have a problem with the 165c," one source noted. "It has all of the normal problems of passive matrix color, so this will be the first product from Apple that doesn't have the typical Apple quality," the source said.

The new CPUs will follow Apple's introduction of five printer products at Macworld in San Francisco in January. The high end of the new printers will be the LaserWriter Pro 600 and the LaserWriter Pro 630, both of which feature a resolution of 600 dots per inch.

The 630 will also feature a 68030 coprocessor as a raster image processor for faster image setting, enabling the printer to produce faster output, sources said. Prices are expected to range between $2,500 and $3,500 for the printers.

Those familiar with Apple's plans had mixed reviews of the new products.

"In some ways it's a little too late," said one analyst familiar with Apple's plans. As more software, particularly high-end graphics software, becomes available on Windows, "graphic professionals will look at Windows seriously," the source noted.

With Apple's traditional high prices, "they're only helping migrate graphic professionals to the Windows platforms," he added.

Others, however, expected Apple be able to compete more aggressively against low-cost 486 products with the new systems.

"Apple's trying to position itself against low-cost 486-based systems with its new products," one source noted. "They're doing a fairly good job of adding incremental performance improvements while keeping the prices low," he added.

PEN / from page 1

Pen vendors dig archaeologist's input

computer keyboard. The workers may not be computer literate, and those who are don't consider computing their primary task. "You think about people who are out doing field work and filling in forms and capturing drawings, and that's pretty much who we expect to be using pen computers," said Patty McHugh, manager of mobile computing planning at the IBM Personal Computer Co., in Armonk, N.Y.

PENS TO PYRAMIDS. This marriage of modern technology and ancient history all began when Joseph Rickert, systems engineer at Parallan Computer Inc., met Renée Friedman, associate director of an archaeological expedition at Tell-el Muqdan. Fascinated by Friedman's work and eager to apply computer technology, Rickert organized the technology portion of a dig at the site last summer.

The archaeologists hope that computers will help them tie together information found at Tell-el Muqdan, in Leontopolis, a city that spanned Egyptian, Persian, and Roman periods.

"It's what we call a tell site, which is a mound of consecutive cities, one on top of another," explained Carol Redmount, assistant professor of Egyptian archaeology at the University of California at Berkeley, who is the project's director.

The computers will help archaeologists gather more data, quantify more facts about the objects, and relate the objects to each other more quickly, Redmount said. The goal of the archaeologists' data collection is to get a picture of a whole society based on the sum of the individual pieces they uncover. These pieces are usually pottery fragments, but the scientists also find mud bricks from walls and metal objects, she added.

As they uncover an object, the archaeologists must painstakingly document it, draw it, and make notations about where it was found and its relationship to other objects around it. The archaeologist tries to record as much information as possible about each object's context at the time it is unearthed, Redmount said.

Using a pen computer in the field should make it easier to record that information for use later. "You have to take what you get in the field and bring it back to a central computer, which everyone can use," Redmount said.

However, archaeological digs are low-budget affairs. The expedition had to seek donated systems from computer companies or have the participants supply the computers themselves. IBM agreed to donate the initial beta version ThinkPad not only because the company saw it as a chance to promote the tablet but also because it was a chance to test the tablet in harsh field conditions. Rickert volunteered himself as computer consultant.

HARDWARE PASSES, SOFTWARE FAILS. In last summer's dig, the tablet hardware held up well under the hot and dusty desert conditions and less than delicate handling by the users.

The ancient history seekers, however, were tripped up by the all-too-new pen computing software.

"We didn't have any kind of database, and we didn't have a two-scale grid [for drawing objects to scale]," Redmount said.

"You think about people who are out doing field work and filling in forms and capturing drawings, and that's pretty much who we expect to be using pen computers."

IBM's Patty McHugh

They had to make do with beta copies of Ink Development Corp.'s InkWare NoteTaker and standard miniapplications bundled with PenPoint.

The system was also often difficult to use in the field. "When you're out in the field, and you're digging, and you're tired, you're constantly under stress," Redmount said. "If you have to think through 20 steps, and wait for 5 seconds while you're scrolling through program choices, you're not going to use the computer because it's a lot easier to pick up a sheet of paper and a clipboard."

NEW APPLICATIONS. This year, several other computer industry folks hope to attend the expedition, including Scott Goodfellow of Autodesk Inc. and Glen Clark of Microsoft Corp. They will bring with them AutoCAD and a custom database application designed by Clark, which they hope will provide a system for relating specific objects together.

Clark's application, written in Visual Basic, attempts to mimic the standard "locus sheets" that are used by archaeologists to describe a specific section of the site. Locus sheets are to archaeologists what spreadsheets are to accountants. So Clark hopes his application will solve the interface problem in the field.

The AutoCAD drawings will be linked to the database. "By building all this stuff, you should be able to create a [three-dimensional] image of the site," said Goodfellow, a product support analyst at Autodesk. "We can actually recreate a pot by gathering the information that they've put in [about the individual pieces]."

The archaeologists hope the donated equipment will coordinate their data collection so that they can draw conclusions about ancient civilizations more quickly. Redmount said it takes an average of 90 years from the time of an excavation until the information is synthesized into a form others can use.

MORE DUST ON THE PICTURE. Although this sounds good, integrating the pieces of the system will still be a challenge. Ease of use might still be a problem because the archaeologists don't know how to use AutoCAD. And, because there is no version of AutoCAD for pen computers yet, the group will have to figure out a way to move the drawings from the pen computer applications to AutoCAD on the notebook while maintaining the latest version.

The toughest challenge of all may be overcoming computer industry politics. At the moment, IBM's ThinkPad 700T tablet runs only PenPoint. Clark's application runs only on Windows. As a Microsoft employee, Clark is also reluctant to build applications for PenPoint instead of Windows for Pen Computing, even though he is not acting in his official job on Microsoft's network transition team.

Clark hopes that somebody can be persuaded to port his application to run on the ThinkPad. It's not likely that IBM would be willing to spend time translating the code, but the company may come out with a tablet that runs Windows next year, according to IBM's McHugh.

If a compromise cannot be reached, it will be somewhat ironic that archaeologists trying to chronicle the coming and going of so many empires will be thwarted by the modern struggle between the empires of Redmond and Armonk.