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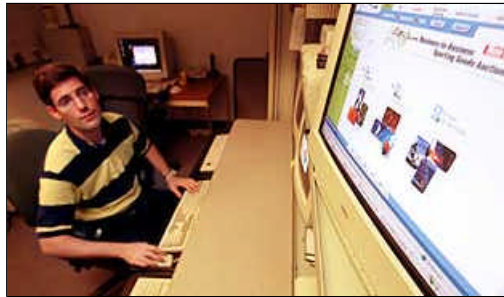
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GABRIEL B. TAIT/Detroit Free Press

Andrew Greenfield, Compuware network and hosting manager, checks progress on several of its Web sites.

Compuware sees the future, and it is the mainframe

June 27, 2000

BY JEFF BENNETT

FREE PRESS BUSINESS WRITER

Compuware Corp. has built much of its success, and is betting much of its future, on mainframe computers.

It became the biggest Michigan-based high-tech company, with sales of more than \$2.2 billion a year, by selling programs and expertise to the world's largest companies.

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Software accounts for more than half of the company's revenues, and about 80 percent of those programs are designed for use on the high-powered machines big companies use to do everything from cutting paychecks to billing customers.

The other 44 percent of Compuware's sales comes from managing and maintaining corporate computers, mostly mainframe systems.

Throughout much of the '90s, many in the high-tech industry thought the big machines had outlived their usefulness. As smaller, less costly mini- and mid-range computers became more and more powerful, they could do much of the work companies previously bought mainframes to do, and at a fraction of the cost.

As the Internet exploded onto the scene, mini- and mid-range machines

Chairman & CEO:
Peter Karmanos Jr.

Fiscal 2000 sales:
\$2.2 billion

Fiscal 1999 sales:
\$1.6 billion

Employees: 16,000

Founded: April 1973

Thumbnail: Provides software and professional services to improve the productivity of both mainframe and client server programmers and analysts in its target market, the 20,000 largest companies worldwide, using data processing technology.

Major products:
Makes software and supplies information technology technicians.

Web site:
www.compuware.com

Ticker symbol:
CPWR

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were also used to create the giant network, storing and routing information to and from personal computers.

So the question is: Are the machines known as "The Big Irons" of the high-tech industry hot enough to continue supporting software and computer services companies like Farmington Hills-based Compuware?

"We are completely confident that demand for our mainframe solutions remain strong as customers continue to utilize their existing mainframe capacity as well as investing new mainframe systems as the backbone of their e-commerce efforts," said Doug Kuiper, Compuware spokesman.

Most experts seem to agree with that assessment.

Although some corporations have traded down to smaller machines, most are keeping and upgrading their mainframes. And the explosion of e-commerce and other uses for the Internet that could barely be envisioned just five years ago is demanding more and more computing power.

Almost 75 percent of the 400 development managers who work in companies with mainframes say they plan to keep their machines, according to a 1999 study conducted by the Santa Cruz, Calif.-based **Evans Marketing Services**.

About 23 percent plan to spend more than \$5 million during the next three years on mainframe services and products while another 75 percent expect to spend more than \$2 million.

"One thing I found fascinating was the

very strong attachment many of these enterprise development managers felt towards their mainframes," said Janel Garvin, vice president of research at Evans Marketing. "Anyone who thinks mainframes are on the way out has got a surprise in store."

That's not only reassuring for Compuware, but for the future of downtown Detroit.

Compuware is building a \$600-million headquarters on Woodward Avenue, and a second office tower on the Detroit River east of Renaissance Center. The new headquarters is expected to be a major boost to downtown when it opens in June 2002, initially employing about 3,000 workers.

If there's a drawback, it's how fast companies that cater to mainframe computer owners can grow.

The machines are undeniably expensive. **IBM Corp.**'s popular System 390 mainframe starts at \$300,000, and that limits the number of companies that can afford them.

Dataquest Inc., the market-research unit of **Gartner Group Inc.**, estimates that worldwide mainframe shipments will drop from 7,179 units this year to 6,775 in 2001 and 6,524 in 2002.

Until the 1980s, the traditional thought was that mainframes would be the primary source of computing power that companies needed to maintain data and store records. If access was needed, someone had to sit at a computer screen built into the mainframe and enter a series of codes.

Compuware's traditional focus is to provide products and professional

services to improve the productivity of mainframes so that companies can do more automated operations, such as processing a company's payroll. Its customers, which generally use IBM products, include carmakers, airlines, banks and manufacturers.

But mainframe dominance began to come into question with the birth of desktop personal computers that could be hooked up to one another through larger machines known as servers.

With the rise of networking, such companies as **Novell Inc.** and **Sun Microsystems Inc.** showed how sharing information over a network boosted productivity.

The buzz was that networking was going to take over the computing world and that client-server applications would drain the demand for mainframes. They were smaller, cheaper and could be set on every desk top in an office.

But then came electronic commerce and the rise of new software technology known as middleware, which connects more users to a mainframe's wealth of storage space and speed.

Robert Vrablik, senior strategist-solution architect at the Enterprise Servers Business Unit at IBM, said today's Web sites have to handle a multitude of functions that require larger amounts of computing power.

For example, e-commerce sites are advertising, filling orders, processing credit cards, storing consumer profiles, sending e-mails and handling thousands of users at one time.

In addition, when a customer makes a

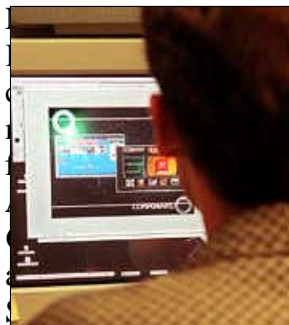
change at some point on a Web site, it must instantaneously be changed in numerous records. For example, if you change your address on a Web site, that change might need to be made in several of the site's computerized files. A mainframe has the power to do that kind of heavy lifting.

The demand for machines to do more of that kind of work is expected to increase as more businesses want more choices and greater interaction with users on their Web sites, especially when customers are lured to buy things online.

U.S. consumers are expected to spend \$184 billion -- or 7 percent of all retail sales -- online by 2004, according to **Forrester Research Inc.**, a Cambridge, Mass.-based research company. The number of online shoppers is expected to hit 49 million by 2004.

Vrablik said there are now two ways a company could go. It could choose to network or it could buy a mainframe.

Based on pure computing power, the ability to process basic instructions or calculations, the Big Irons offer a substantial advantage. The typical mainframe can perform 1 billion instructions per second while a mid-range computer handles about 500 million. A desktop PC, by comparison, performs about 3 million per second.





based
mainframe

GABRIEL B. TAIT/Detroit Free Press

Chris Jackunas Hutchingson, Compuware's digital development art director, designs e-commerce Web

also

said

big

computers have been going through the same evolution as personal computers. The machines have become more powerful even as prices have fallen 30 percent to 35 percent over the last seven years.

"Is it better to have a hundred guys with clippers cutting your lawn or using a power mower to do it?" Vrablik asked.

Major computer companies, such as Compuware and IBM, have begun writing software that plugs the mainframe directly into networks previously run by mid-range machines.

Earlier this month, IBM released the Windows version of a new messaging software that enables mobile workers to access mainframes through cellular phones and laptops.

Dan Shoemaker, a professor with the University of Detroit Mercy College of Business Administration, said major companies have already invested millions in their mainframes.

"All that stuff is still functioning and is part of the company's assets," Shoemaker said. "If you want to talk about client/server, you are saying throw out those assets. Even if better technology came along it would be hard to justify installing it on a cost per basis."

He predicts some part of computing will revert back to its former state

where computer users will be tied directly into a mainframe rather than separate servers.

"Client and server and mainframe are the same," he said. "With client/server, you have a central repository of data that provides upon request data to whoever wants it out there. That is what mainframes do."

Today's marketplace has blurred the lines between the three distinct layers of mainframes, mini-computers and personal computers.

Although mainframes are still at the top in terms of processing power, the middle of the market is now mainly client server computers. **Digital, Hewlett-Packard** and Sun dominate this tier of the market, with 64-bit microprocessors using the Unix operating system.

But these firms are facing increasing competition from PC makers, which can strap together a number of Pentium processors to achieve the same result. These computers run Windows NT, a server operating system created by **Microsoft**.

The future test for Compuware, say analysts, will be to maintain its mainframe business while tapping into these blurred segments.

"The mainframe business will continue to do well as long as people keep coming more applications," Kalmus said.

Contact **JEFF BENNETT** at 313-222-8769 or jbennett@freepress.com

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