



When you think of the way the Internet has changed our lives, it's astonishing. Certainly, in the most obvious ways — such as how we communicate and conduct business — but also in less tangible ways, like our expectations.

Not long ago, if you wanted to purchase an item, you would either visit a bricks-and-mortar store or place a phone order via an 800 number. Then you had to stand in line or remain on hold until someone was available to help you. If the item was out of stock, you would have to wait until the next shipment — maybe a few days or perhaps a few weeks. Even worse, you were constrained by dealing only during business hours - 9:00 a.m. to 5:00 p.m. - closed weekends and holidays. Pre-Web, that was the accepted way of doing business.

HP's E-Parts Direct: Just What the Customer Ordered

"HP-E-Parts Direct works directly against the databases and uses fewer resources on the HP e3000 to process the same request. Overall, it is a much more efficient and scalable solution than the old system."

Steve Yeager
Information Technology Engineer
HP Commercial Computing
Support Division

Whisper Tehnology At-a-Glance

Company: Whisper Technology

Headquarters: London, England

Founded: 1984

Revenues: \$2,000,000

Phone: (888) 465-8145

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Main products: Whisper Technology has been developing and supporting enterprise software solutions for more than 15 years. Whisper Technology currently supports over 400 HP e3000, UNIX and NT customers running mission-critical applications.



Challenge

- Create a scalable, reliable, supportable and user-friendly web-ordering solution.
- Leverage legacy infrastructure.
- Decrease operating costs and increase efficiency.

Solution

- HP E-Parts Direct
- Programmer Studio from Whisper Technology

Results

- User-friendly web-ordering system makes it easier for HP Channel Partners to review parts availability, order and track parts and check warranties.
- Reduced costs 93%
- More than \$1 million in savings per year.

Today, instant access on the Internet has created a whole new set of expectations, as well as new business models. Thanks to the Web, you can purchase whatever you want, whenever you want and usually have it on your doorstep by the next day. Those companies that can't meet the immediate demand for products and services now find that once-loyal customers quickly move on to see what the competition can offer.

In response to this e-business phenomenon, Hewlett-Packard Company launched HP E-Parts Direct in August 1999. HP E-Parts Direct is a Web ordering tool created by HP's Commercial Computing Support Division (CCSD). With HP E-Parts Direct, HP Channel Partners can look up part pricing and availability, order parts, track their order status and perform warranty processing with just a mouse-click. The backbone of HP's newest Web tool is the HP e3000.

Reaping the Returns

It wasn't always this simple for HP's Channel Partners to access the ordering information they needed. Prior to HP E-Parts Direct, customers had to have specific HP ordering software installed on their own systems. Then they would have to log onto the HP system through a toll-free dial-up modem.

"Naturally, this took up a lot of time and tied up the phone lines, not to mention the costs to HP," said Diane Gruber, HP E-Parts Direct Program Manager. "From a time and money standpoint, this was neither efficient nor cost effective. Our customers asked us to come up with a better ordering solution. With HP E-Parts Direct, we've given our customers the instant Web-ordering access they requested and dramatically decreased our support costs 93%."

Ordering Made Easy with the HP e3000

There were six key factors that the HP CCSD team needed to incorporate into its HP E-Parts Direct solution. Simplicity, scalability, reliability and supportability were already built-in, thanks to the HP e3000. That left user friendliness and the ability to leverage a legacy infrastructure for the CCSD team to integrate.

User-friendliness was pretty simple to add. Because customers can access HP E-Parts Direct through their Web browsers, the new ordering system is much easier to use than its predecessor.

"Our customers can also directly link to Fed Ex and UPS to track their orders," said Gruber. "This is an added level of service and convenience that customers have come to expect and that we provide."

Making the Migration

To handle the high volume of web site users, the HP E-Parts Direct HP e3000 applications server processes multiple requests simultaneously. "The migration from the old system to the HP e3000 has been big," noted Gruber. "We have more than 5000 users placing parts orders. We're currently processing 33,000 orders a month through the web site."

Steve Yeager, HP CCSD Information Technology Engineer, led the team that created the web site data transport layer that talks with the HP e3000s. "We use one HP e3000 as the primary application server, and connect to multiple HP e3000s and miscellaneous external systems," he said. "We have been able to leverage and link to many of our legacy systems that were written in C, COBOL and PASCAL."

Increasing Programmer Productivity

The team utilized Whisper Technology's Programmer Studio to perform all coding, compiling and debugging on the HP e3000s.

"Whisper Technology software is similar to Microsoft Visual Studio which I'm familiar with," said Yeager.

"Programmer Studio makes it easier to write and compile code on the HP e3000. Conservatively, we're more than two to three times more productive," said Don Smith, a member of the development team.

Whisper Technology has been developing and supporting enterprise software solutions for over 15 years. Based just outside London, England, Whisper Technology currently supports more than 400 HP e3000, UNIX and NT customers running mission-critical applications.

"Programmer Studio greatly reduces the learning curve for programmers new to HP e3000 development by using intuitive standards found in most Windows development environments," explained Graham Woolley, of Whisper Technology. "Before Programmer Studio, most programmers used terminal-based editors, which looked very old compared to the dynamic development environments found on the PC. Programmer Studio brings the HP e3000 development up to date, providing improved programmer productivity. It also makes HP e3000 programming fun again."

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Whisper Technology

Meeting the Challenge

It makes no difference what your company is selling - it could be clothing, automotive parts or high-tech equipment - creating a Web-ordering system has its difficulties. Although HP had the resources of its best technicians on the job, with HP E-Parts Direct, there were a few challenges to overcome. One of those was to build a high performance, scalable, request-reply application server using an "out-of-the-box" message broker solution.

"At the time we started this project, most of the message brokers that we looked at were new to the market and would have required considerable customization to meet our needs," said Yeager. "So, we decided to write our own protocol using standard middleware."

Additionally, the CCSO team did not care for the TVAL protocol that is frequently used in point-to-point applications. "We needed a protocol that could maintain open databases, process requests in parallel, provide scalability and load balance across multiple servers. We developed a new protocol, Simplified Tagged Value (STV), to accomplish this."

The STV protocol completely decoupled the HP e3000 server and client interfaces so that new HP e3000 servers and/or clients could be rolled out without having to recompile both.

"For example, a new data field can be added to a service call on the server without having to recompile the client code," noted Yeager. "This protocol is very similar to 'well-formed' XML without the extra baggage, and from a programmers point of view, very simple to code. HP-E-Parts Direct works directly with the databases and uses fewer resources on the system to process the same request. Overall, it is much more efficient and scalable solution than the old system."

Technology Highlights

- HP e3000 995/400 as primary server.
- Additional HP e3000s.
- Programmer Studio from Whisper Technology.

Customer Satisfaction Achieved

Gruber said, "HP E-Parts Direct has really been a win-win situation for us and our HP Channel Partners. We're saving more than \$1 million a year over the old system - we've definitely met our return on investment on the project. We know we can increase our customer service and productivity even more by opening HP E-Parts Direct to consumers."

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HP e3000