



# Taking the users' point of view

BY SANDRA GITTLEN

Illustration by Timothy Cook

Application delivery networking enhances the desktop experience.

**A**l Logiodice and the technology team at Epson America knew they had a money-saving strategy. By consolidating the company's myriad websites into a single, dynamic platform, they hoped to better accommodate the growing number of visitors to the site and save money on management and application licensing. But they worried that the increased burden on the existing server infrastructure would result in poor website performance. "We were concerned this might impact our customer experience. We needed to increase capacity in a cost-effective manner," says Logiodice, manager of application development at Epson.

Epson's website is the hub for its customers and business partners, allowing users to access product information, locate dealers, purchase items online, and get tech support. As such, the site often sees spikes in usage during marketing campaigns and product launches. In fact, page views have swelled fivefold since the sites were merged, according to Logiodice.

With this tremendous growth, Epson could not afford to have users

wait for pages to load or transactions to complete as servers hit their maximum utilization. But rather than beefing up the applications and hardware in place—which would have cost a significant amount of money—the team began to think more creatively. They turned to F5's WebAccelerator technology to handle the increased server load. "We didn't need a full systems overhaul; we just needed to be strategic," Logiodice says.

## Strategy rules

Experts agree that often IT teams make the mistake of thinking that additional servers and bandwidth will alleviate performance issues and improve the customer experience. "The biggest problem out there right now is latency. Things like roundtrip times, network errors, and packet loss—those can't be solved with traditional methods of throwing bandwidth and servers at them. It just doesn't work," says Karen Jester, director of product management solutions engineering at F5.

"Users today are demanding a more dynamic Web experience, with immediate feedback. Technologies like AJAX, a blend of JavaScript and XML, are enabling people to provide a 'fat-client' experience at the cost of putting a lot more stress on the network," Jester says. "These new technologies significantly increase the number of requests, each incurring a latency penalty, resulting in poor user satisfaction."

John Burke, principal research analyst at Nemertes Research in Minneapolis, says many companies don't figure out the burden on their networks until it's too late. Users surf to other sites and abandon their shopping carts due to poor site performance.

"The majority of IT shops don't directly and regularly assess the performance of their applications. When people start complaining—that's their number one indicator," he says.

Burke recommends that companies implement network

tools to monitor and measure the customer experience. “You have to know when and where your performance problems occur,” he says. Most importantly, you should be able to determine if they are PC-based, network-based, or application-based.

“If you see there’s no congestion in the network, then you look at how web pages are being served up,” he says. His team

the challenges that application owners face,” says Hicks. “Since each organization has its own unique problems, a flexible solution is important to maximize the return on investment.”

Many companies are unaware of the difficulties with deploying rich web applications to remote and mobile users. “Generally, the problems aren’t discovered until after they are deployed

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constantly monitors their website’s performance: “We keep a lot of statistics. We know how long it takes to render a page, which pages run slowly, and which ones are fastest. All of this information helps us troubleshoot problems,” he says.

### Don’t rush to implement

Joe Hicks, product manager for WebAccelerator at F5, says there are many issues that cause application delivery problems, including latency and congestion; users becoming more remote and mobile; data center and application consolidation; chatty protocols; and the increasing use of rich content served via ActiveX, AJAX, and Java. Many organizations don’t realize which factors are affecting their applications and need help understanding problems with application delivery.

There are many ways to accelerate applications, and it can be difficult for organizations to arrive at the best approach. Differential compression, caching, and application-specific optimizations all may be useful. “Generally, a hybrid approach to acceleration provides the best and most versatile solution for

to users in remote locations. An application that performs well when the users are ‘local’ to the application servers usually will not perform well when the users are remote,” Hicks notes. Adding more bandwidth is usually not the best approach, since the user experience problems can stem from other factors, including latency, overloaded servers, or serving repetitive content.

Zeus Kerravala, senior vice president of enterprise research at Yankee Group, agrees. “You have to have a better understanding of how applications are used and what impact that has on the network,” he says. He recommends developing an application performance strategy that classifies applications according to their problems. Once you’ve determined where the trouble spots are, then you should narrow down your optimization choices and test them carefully. Says Kerravala, “Certain applications respond differently to certain optimization techniques, so you have to be careful.” He warns that rolling out one solution might break another application. “You might buy a product that improves the delivery of one program, but if you didn’t test it with the rest of the ecosystem, it could negatively impact something else,” he says.

## CHECKLIST FOR OPTIMIZATION SUCCESS

Experts offer these tips to improve your customer’s experience with your web-based applications.

- 1 Measure the end-user experience in terms of network and application response times. Continuously monitor how pages are downloading and whether congestion in the wide area is slowing performance.
- 2 Test applications before deploying them enterprise-wide. Some legacy applications were not designed to be used over the wide area.
- 3 Classify your applications into performance needs such as low latency for Voice over IP and real-time videoconferencing. You also need to prioritize applications according to their importance to the business. For instance, your organization may not care about the speed of video downloads, but you require website traffic to always be optimized.
- 4 Match optimization techniques to your application performance issues. For instance, if security overhead is slowing response times, consider offloading SSL functionality.
- 5 Test-drive optimization solutions within your entire ecosystem. An acceleration program might work fine for one application, but might impede the performance of another.

### One size does not fit all

Epson’s Logiodice says companies should take their time and work closely with the vendor to perfect their optimization strategy. In Epson’s case, the company wanted to take the load off of the web application and database tiers. These tiers were involved in every page view, slowing response times. “The caching servers have more flexibility to absorb wide volume fluctuations, but it took some time and effort to get it right. We had to figure out what was cacheable and what wasn’t,” he says.

Hicks says many application acceleration options are available today, including symmetric, which requires hardware on both sides of the connection, and asymmetric, which only needs hardware at one end of the connection. IT teams should consider if they can manage both ends of the connection and if they want a hardware- or a software-based approach.

It’s critical for IT teams to assess the cost of a solution versus the criticality of the application. “IT should say, ‘If we do this, it will cost this much.’ Then, whoever is in charge of the customer experience has to match priority to cost,” Nemertes’ Burke says.

“IT needs to start looking at things through the users’ eyes. It’s not the server CPU or a service-level agreement that’s important—it’s the end-user response time,” Kerravala says. He adds, “Application performance used to be something that only developers worried about. Now it’s at the top of every IT person’s responsibility list.” ✨

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Sandra Gittlen is a freelance writer in Northborough, Mass.