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# Accenture, Akamai make IRS.gov less taxing

## Content delivery network eases site's load, boosts security

BY BRAD GRIMES

At the height of the Internet boom, a company knew its Web site had made the big time when it needed the help of a separate network of servers to meet the demand of site visitors. The added servers proved to be a cost-effective way of locating content closer to users and taking the burden off back-end systems that ran a site.

Government Web sites didn't necessarily fall into that category, but with the growing emphasis on e-government and service to the citizen, the situation is changing. Today, agencies are taking a page from the playbook of leading e-businesses to help deliver Web content quickly and securely.

In July 2001, the Internal Revenue Service inked a five-year, \$33.6 million deal with Accenture Ltd. to redesign and rebuild the IRS.gov Web site. The contract described an easy-to-use site that would make finding forms easier and help pave the way for widespread online tax filing.

When Accenture began its design, IRS provided estimates of how much it expected the site's traffic to grow over the coming years. Those estimates, it turned out, were low.

"They had been expecting annual increases on the order of 20 percent, but it started to come in at more like 45 percent," said Mark Vallaster, a partner in Accenture's federal government practice.

**Project:** IRS.gov Web site  
**Agency:** Internal Revenue Service



Henrik G. de Gyor

**Akamai's Keith Johnson**



Olivier Douliery

**Accenture's Mark Vallaster**

### Partners

- Accenture Ltd., Hamilton, Bermuda
- Akamai Technologies Inc., Cambridge, Mass.
- Qwest Communications International Inc., Denver

### Goal

In 2001, IRS hired Accenture Ltd. to redesign its Web site to make it easier for users to find the information they need and file their taxes online. IRS wanted more people to get information online and fewer calling the agency's phone lines.

### Obstacle

IRS could not foresee the amount of traffic the new Web site would bring. Instead of a 20-percent boost, the new IRS.gov saw about 45 percent more hits. To handle that much additional traffic would have required investing in new servers to run the site.

### Solution

Accenture brought in Akamai Technologies, which offers a network platform that can carry a Web site's content over 14,000 servers worldwide. Not only can Akamai's EdgeSuite relieve the traffic burden on a site's infrastructure, it can help increase security and improve scalability.

### Payoff

IRS.gov has gone from 80 million hits per day to a peak of 127 million hits per day without adding servers to its data centers. Akamai estimates Web sites can save 20 percent to 50 percent on infrastructure costs by using its network. In the case of IRS.gov, Accenture was able to re-deploy several of IRS' servers to help improve application development and other jobs.

IRS was unavailable to discuss IRS.gov, which officially launched in January 2002. But Vallaster said a site typically got 80 million hits per day recently peaked at 127 million hits on tax day 2004.

Supporting that kind of traffic growth would have required "lots of extra servers" at the site's two primary data centers, run by Denver-based Qwest Communications International Inc., Vallaster said. So Accenture turned to Akamai Technologies Inc.

Akamai sprang from the Massachusetts Institute of Technology in 1998. It started as a good idea in a \$50,000 entrepreneurship competition and has grown into a content delivery network used by some of the most high-profile Web sites. Today, its 14,000 servers spread across 71 countries handle Web traffic for companies such as Microsoft Corp. and Yahoo! Inc. Even the Defense Department has used Akamai's service to support its DefenseLink Web site.

Accenture began discussions with Akamai after IRS had already shown interest in the technology, and implemented the technology in time for the most recent tax season.

"Their solution specifically solves the problem of requiring additional servers," Vallaster said. "In government, it's all about the business case. IRS wanted to deploy lots of content ... at the best possible price."

Using Akamai's EdgeSuite of tools and services, content for IRS.gov is

pushed out to Akamai's network of servers where it can be accessed quickly without making requests to the Qwest data centers. All changes to the site are made in the usual way on Qwest's servers, and the site's management team specifies how frequently the Akamai servers should check with the main system to keep outlying content up to date.

Using Akamai's EdgeControl software, IRS can manage its portion of the Akamai network as though it were part of the agency's own infrastructure and run reports to identify traffic trends.

Akamai's ability to reduce infrastructure by up to half is its most obvious appeal, but not its only one, said Keith Johnson, Akamai's public-sector vice president.

"When you run a site on the Akamai platform, you get additional security, because users aren't hitting your actual site," he said. In that respect, Akamai acts as a barrier against denial of service attacks and other security issues.

In addition, Akamai gives IRS the ability to scale quickly while simultaneously redeploying some of its own servers.

"We've taken some of the hosting infrastructure and repurposed it to provide other features to IRS, such as new application development" Vallaster said.

Today, the Akamai platform fields about 80 percent of IRS.gov traffic. During the week surrounding April 15, San Mateo, Calif.-based Keynote

Systems Inc., which measures Web site performance, rated IRS.gov as the top-performing government site, despite the tax rush.

Vallaster said getting the service integrated with the site's back-end servers required some engineering, such as enabling application requests to travel through Akamai and hit the Qwest-based servers.

"Some applications can run on Akamai, but others run better on the hosted environment," he said.

Johnson said Akamai continues to enhance its network to handle things like Java programs, search tools and security applications. The network streams content for Voice of America and recently streamed President Bush's State of the Union address.

And the company's government business continues to grow, as researchers such as Nielsen/NetRatings say government Web traffic is increasing. Akamai has more than 50 government users, including the Education Department, Centers for Disease Control and the Food and Drug Administration.

"We've seen explosive growth in the government," Johnson said. Agencies "would much rather people go through their Web site than come to an office or use the phone. ... So there's been great adoption of this technology." ■

If you have an innovative solution that you recently installed in a government agency, contact Staff Writer Brad Grimes at [bgrimes@postnewsweektech.com](mailto:bgrimes@postnewsweektech.com).

