

## Mirror Image

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*Lazaro Fernandez,  
IT Operations Manager,  
Morningstar*

### Impact Highlights:

- Improved quality of delivery for rich digital media
- Empowered Mirror Image to proactively prevent performance problems
- Differentiated service and enhanced competitive positioning

### Mirror Image

Mirror Image® Internet, a global network for online content, application and transaction delivery, provides content delivery, streaming media, Web computing and reporting solutions that enable its customers to create engaging Web experiences for users worldwide. Principally owned by Xcelera, Incorporated and headquartered in Tewksbury, Massachusetts, Mirror Image customers include Global 2000 enterprises, e-Business and service/hosting providers worldwide as well as organizations in the retail, advertising, media and government industries.

### Challenge: A better end-user Web experience

Mirror Image offers an enterprise-class platform that combines connectivity, processing power and storage to deliver rich digital media quickly and dependably to provide its customer's end users with a better Web experience.

For example, the Boston Globe and the NY Times use the Mirror Image network to enhance their news Web sites with video, audio, graphics,

JPEG and other rich media.

While Mirror Image delivers all types of rich content, its service has been particularly popular for video since reliability issues have forced users to wait for video streams to download.

Mirror Image offers its customers two high-level value propositions:

- The service is located around the globe, putting content closer to users in order to improve performance and the overall user experience.
- Customers can improve the richness they can deliver from their Web site without the capital investment of building the infrastructure and without the ongoing operational costs.

In providing this service, Mirror Image had the tools it needed to effectively manage its internal network. However, it had no control over the Internet and was unable to look at the variables or overhead the Internet was imposing on its service in order to understand how its service was performing from the end users' perspective.

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*Marty Hayward, Director of Marketing, Mirror Image*

Thus, the company realized it could be unaware of slowdowns, and did not have the depth of information it needed to effectively isolate and resolve problems caused by Internet issues.

Mirror Image needed a way to ensure that its customers would receive the highest possible level of performance and to quickly troubleshoot any network issues that might occur to meet its service level agreements (SLAs.)

### **Solution: Keynote Web Performance Measurement Services**

Mirror Image, therefore, adopted Keynote solutions to enable it to meet its SLAs—and demonstrate the high quality of its service. By using Keynote's Application Perspective and Streaming Perspective services, Mirror Image ensures that the performance of its own service exceeds the Keynote Business 40 Internet Performance Index (KB40).

### **Keynote Application Perspective and Streaming Perspective Services**

Mirror Image uses Keynote's Application Perspective and Streaming Perspective services 24/7 to ensure that its service meets its SLAs.

- Keynote Application Perspective is a root-cause diagnostics solution for Web applications that provides a comprehensive system for operational monitoring and application performance management

- Keynote Streaming Perspective is an automated service that measures the quality and reliability of streaming media delivery the way users experience it and effectively alerts Mirror Image of any service availability issues or user experience deterioration

Both Application Perspective and Streaming Perspective use Keynote's global test and measurement network to obtain comprehensive performance data on Mirror Image's online applications from the end user's perspective.

"We use these services to view the performance of our network across the globe and to drill down to identify the source of any problems or delays. By including object-level detail on each individual performance measure, Application Perspective has enhanced our analysis and troubleshooting capabilities," said Steve Hershberg, director of product management for Mirror Image.

Streaming Perspective service has also had a critical impact on Mirror Image's business. Said Hershberg, "Streaming media has become a significant portion of internet traffic—and a major portion of our business across all the industries we target. We haven't seen anything on the market that compares to Keynote's Streaming Perspective service for ensuring the quality of streaming video performance. It's vital for our business."

## About Keynote

Keynote Systems (NASDAQ "KEYN") is the global test and measurement company for mobile communications and online business performance.

As an independent and trusted third-party, Keynote provides IT and marketing executives with an unbiased view into their Internet services from around the world. For over a decade, we have been providing measurement data and testing capabilities that allow companies to understand and improve their customer's online and mobile experience.

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## Keynote Business 40 (KB40)

Mirror Image uses the KB40 as the standard benchmark against which it measures the service performance it provides for its SLAs. The KB40 measures the average download time for the home pages of 40 important US-based business Web sites, such as FedEx, Google, and Charles Schwab.

Subscribers receive KB40 measurements and measurement components such as DNS lookup time and TCP connect round-trip time and are able to investigate KB40 performance based on city, backbone, or agent.

"We feel that KB40 index is the Dow Jones of Web site performance," explained Marty Hayward, director of marketing at Mirror Image, "It's an objective standard. By guaranteeing that our service exceeds that of the KB40—unlike our competitors—we are able to assure our customers' that we can deliver content quickly and effectively."

## Results

Using Keynote solutions has empowered Mirror Image to proactively prevent problems before they occur, resolve any issues quickly and thereby meet high standards of performance. Said Hershberg, "At a strategic level, Keynote services allow us to proactively look at performance history to see trends.

With this knowledge, we have been able to allocate capacity to overcome capacity problems before they cause slowdowns for our end users; for example, we can put in a new content access point or add new drops or bandwidth."

If a problem does occur, Keynote helps Mirror Image track down the source quickly. "We have servers all over the world and so does Keynote. If performance was slow last Wednesday in the U.K. for example, we can look at the Keynote data and narrow in on the source of the problem in our network. We can then circumvent the problem by re-routing traffic," said Hershberg.

Finally, because the KB40 offers an objective standard for performance excellence, Mirror Image uses it not only as the basis of its SLA—but also as a critical marketing tool. Said Hayward, "Keynote has long been the leader in Internet performance measurement. We use the fact that our SLAs are based on the KB40 as a major point of differentiation in our marketing efforts"

