



Using AlertSite's DéjàClick for Competitive Advantage

A Hypothetical Use Case

This hypothetical use case was created by Rebecca Wetzel, President of Wetzel Consulting LLC.

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She draws upon over 20 years helping enterprises, vendors and service providers understand and improve the performance of networked applications.

You can make your website more competitive by delivering an outstanding user experience—and to do that successfully you must understand the user experience. Understanding the user experience empowers website tuning and organizational collaboration across the enterprise to increase customer satisfaction, and ultimately grow revenue.

In the past, simply monitoring server statistics often sufficed. But with new, more visually compelling and interactive applications like Flash and AJAX, you now need to monitor from the user's vantage point—the browser.

DéjàClick™, an “inside-the-browser” user experience monitoring system from AlertSite®, provides information that you can use across your enterprise to optimize user-website interaction.

This use case describes the experiences of a hypothetical DéjàClick-enabled online retailer we'll call Nozama.com. The use case melds the experiences of many DéjàClick customers into a single example that illustrates how inside-the-browser user experience monitoring can “virally migrate” into the daily operations of many functional groups, resulting in improved corporate performance.

Sizing up the Competition

Nozama.com, a Portland Oregon-based online retailer with an exemplary business track record, sells products ranging from toys to power tools—and strives to deliver a world-class customer experience. After years of steady growth, customer traffic and market share recently began declining.

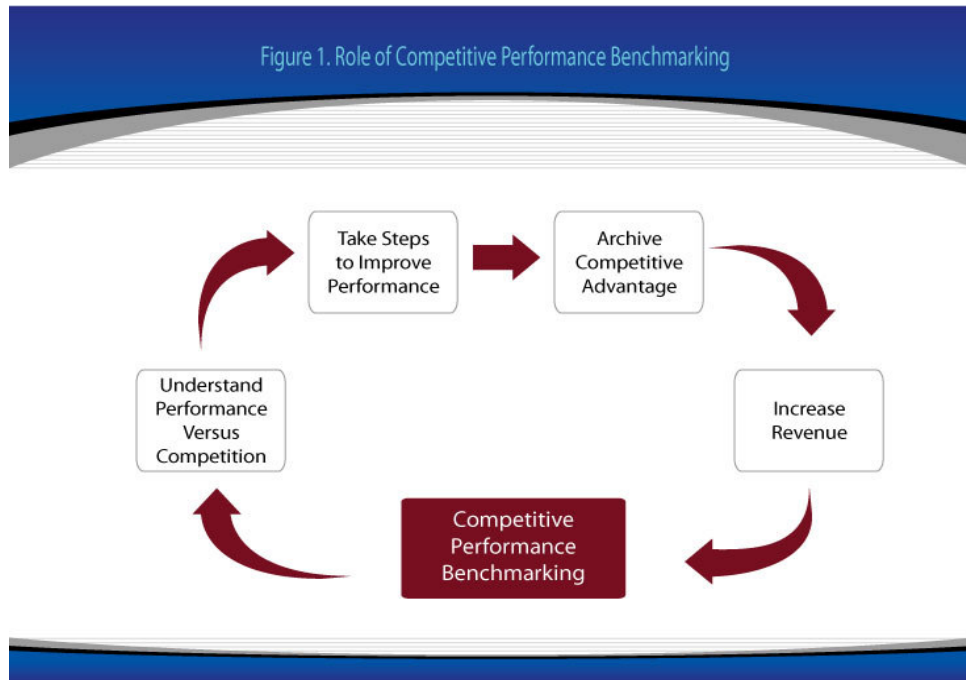
To reverse the market share erosion, in January Nozama.com hired a savvy new Marketing VP named Belinda van Reis. During her first weeks on the job Belinda investigated the competitive decline and learned that, dissatisfied with website performance, many Nozama.com customers were defecting to competitors.

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Belinda established a Website Performance Committee to address Nozama.com’s website performance shortcomings. The Committee’s first members included the company’s CIO Bert Hawes, Customer Service VP Sam Schwarz, and Belinda. As its first task the Committee set out to establish target page load times for key transaction types. Belinda told the Committee, “We can’t just chase tail lights—we need to drive the lead car. So we must beat, not only match, our competitors’ performance.”

Bert and Sam agreed, noting that superior application performance was also critical to meeting the CEO’s goal of expanding sales by 10 percent by year’s end. Belinda drew a diagram showing how—when done right—competitive benchmarking can initiate a cycle of continuous improvement that increases ongoing revenue (see Figure 1).



Having established the importance of surpassing competitors’ performance, Belinda, Sam and Bert’s next task was to determine how fast was fast enough. Bert had studied the subject and learned that best-in-class home pages load in under 1.5 seconds, perform login/authentication in less than two seconds, and execute complex back-end queries in under three seconds.

After much discussion Belinda, Bert and Sam agreed that Nomaza.com’s page load times should average at least 15 percent faster than its top two competitors in the US, France, and Japan. On an ongoing basis they would measure browser-based page load times for the home page, a purchase transaction, and a form-filling transaction for Nomaza.com and its top two competitors in all three countries.

Belinda, Bert and Sam discussed how best to measure page load times. When faced with the same challenge in her last job, Belinda described how she successfully used DéjàClick to obtain the needed information. She said, “In my estimation DéjàClick’s feature set, good customer service record, and price make it right for Nozama.com’s needs.” The Committee agreed to try DéjàClick.

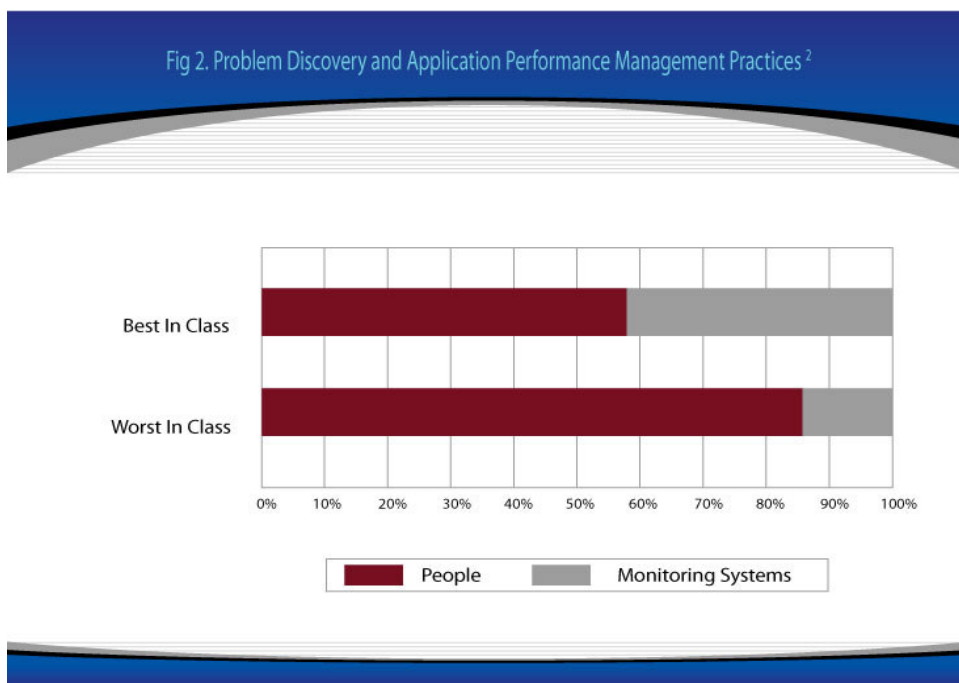
The Committee then decided that as Nozama.com’s internal customer advocacy group, Customer Service would install DéjàClick and generate reports.

After learning of their new responsibilities, Sam’s Customer Service staff members expressed concern that because they were not technical, it would be hard for them to create and deploy DéjàClick scripts. Once familiar with DéjàClick, however, their concerns proved unfounded because such features as an “auto suggest” function that prompts the user to create the most effective monitoring scripts, made it intuitive to use.

Identifying Incipient Performance Problems

In early March, after examining weeks of DéjàClick data, Nozama.com’s Customer Service VP Sam Schwarz gained new insight into page load times, and the effect factors such as network performance have on the performance customers see. He wondered if he could use customer experience monitoring data to decrease customer service call volumes. “If we find performance problems early,” he reasoned, “we should be able to fix them before customers reach for the phone.”

Sam remembered reading in a recent *Business Communications Review* article that just over half of all application performance problems in enterprises with best-in-class performance management practices are discovered by end users rather than by monitoring systems—while in enterprises with worst-in-class practices, users discover fully 85 percent of performance problems (see Figure 2).¹



Sam believed that Nozama.com matched the best-in-class enterprises’ management practices, but felt the company should strive to do even better. His goal was to improve automated problem discovery to 70 percent within two years. He realized, however, that to reach that goal Nozama.com must not only improve its performance monitoring, it must also improve internal communications.

¹ Peter Sevcik and Rebecca Wetzel “Application Performance Management: Best Practices Do Work” *Business Communications Review* May 2007

² Ibid

When Sam's Customer Service staff raised performance issues, Bert's operations staffers often said that based on their information everything was working fine. Operations' monitoring tools often showed that servers and associated infrastructure were operating within acceptable performance and capacity ranges—even while customers were complaining.

Sam began to see that Customer Service and Operations had different views of the same picture. Operations monitored the health of physical assets, while Customer Service indirectly monitored users' actual business transaction experiences through customer complaints. Sam realized that these divergent views inevitably led to different conclusions and to misunderstandings between the two groups. He believed that by becoming more customer-driven, the views of both groups could be reconciled.

To this end, Sam decided to use DéjàClick to monitor business transactions and identify performance problems *before* customers were inconvenienced. If Bert's Operations group had views into both the user experience and infrastructure health, they could resolve problems more quickly and Customer Service and Operations could “speak the same language” and thus avoid misunderstandings.

In early April, after consulting with his staff, Sam walked into Bert's office with a proposal. Sam's Customer Service staff would run DéjàClick scripts simulating the shopping experience in US, France, and Japan, and provide portal access for Bert's Operations team to monitor the data. The data would include such information as alerts when transactions exceed acceptable thresholds or generate errors such as *404 Page Not Available* errors.

Bert liked the plan, so Sam instructed his group to use DéjàClick to create and run what he called “bionic shopper” scripts. He also arranged for Operations to access the data directly, so they wouldn't have to go through Customer Support.

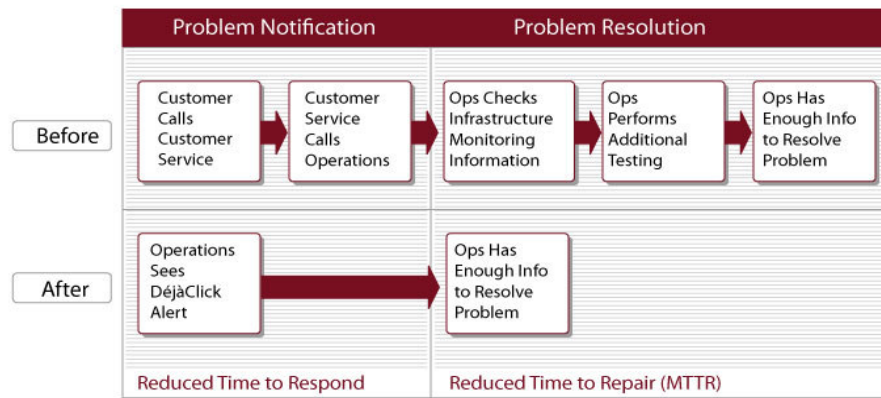
By mid May “bionic shopper” monitoring enabled Bert's Operations staff to detect even intermittent application and database server problems that were difficult to pinpoint before—and they were able to identify site slowdowns caused by poor connectivity and problem code. As Figure 3 shows, the new end-user monitoring system reduced the time to respond to as well as the mean time to repair problems (MTTR).

Bert's Operations staff began using DéjàClick reports and graphs to pinpoint issues for developers in Nozama.com's Engineering group. Operations staffers noticed that developers were much more cooperative—and Bert knew why. Before, developers were often frustrated because Operations would contact them with performance problems but could not provide enough information for developers to locate and fix the problems. Now, armed with solid information, Operations was viewed as a help not a hindrance in diagnosing problems.

In July Belinda convened a Website Performance Committee status meeting and asked Ed Woo, Nozama.com's Engineering VP, to join. Overall website performance compared to competitors had improved from “looking at tail lights” in February to five percent faster than competitors on average. Bert reported that working with Ed Woo's developers his Operations group had knocked an average of three seconds off shopping cart load times. He also reported 25 percent fewer abandoned shopping carts and 11 percent fewer help desk calls.

Satisfied with these results, the Committee investigated other ways DéjàClick technology could help improve website performance and online revenue. Committee members decided to use DéjàClick's capabilities to build an Operational Readiness Test (ORT) process for website features. The Committee also decided to use newly available DéjàClick capabilities to help create load test scripts to ensure the US website could withstand the Christmas onslaught.

Fig 3. Performance Problem Resolution Before and After DéjàClick Implementation



Preparing for Prime Time

To maintain market leadership, Nozama.com constantly adds new website features and tweaks existing ones. These changes occur within a complex environment that places heavy demands on corporate database servers as well as web application servers hosted by several third parties. Within such complexity lurks the danger that even small changes can degrade the customer experience.

Sam Schwarz, the Operations VP, created an Operations Readiness Test Plan to monitor new website features before and after production rollout so developers could quickly identify and remediate problems. In Sam's estimation ORT should lead to faster and better code problem resolution, faster rollout of new site features, and ultimately higher revenue for Nozama.com (see Figure 4).

Lower customer call volumes made possible by DéjàClick-enabled performance improvements enabled Sam to free one employee to test new site features. The employee, Bryan Barlow, was given the title of Customer Service Test Specialist.

Sam, Bryan Barlow, a representative from Ed's Engineering team, and a representative from Bert's Operations team initiated weekly ORT meetings to manage website feature testing and review test results.

When a new feature was test-ready, developers deployed it to a test server and Bryan used DéjàClick to generate and deploy a test script that put the feature through its paces. Bryan then reviewed the results and summarized them at the next ORT meeting. If the feature met ORT performance criteria, developers deployed it to the production website. If not, developers reworked the feature guided by the DéjàClick results, and Bryan retested it.

Fig 4. Role of Operational Readiness Testing



Bryan deployed a DéjàClick “capture on error” feature that records what a screen looks like when an error occurs, and also captures associated source code and header information. This documentation gave developers valuable clues about problem causes and remedies.

After a new website feature was deployed, Bryan again ran a feature-specific test script to ensure acceptable performance in production. By September Bryan had tested 26 new website features and 41 existing features that had been enhanced. At any given time, he had about five features under test. Because Nomaza.com’s website is dynamic, the DéjàClick scripts must periodically be revised—but Bryan found that often scripts self-adjusted to reflect website changes.

When Sam, Belinda, Bert and Ed held their next Website Performance Committee status meeting in mid September, time to market for new website features was 30 percent faster, and the frequency with which new features were pulled from production for performance reasons had decreased by 55 percent since January.

The Committee discussed other ways DéjàClick could improve Nozama.com’s website performance. Bert suggested applying it to a cache repopulation problem he was experiencing. Belinda suggested using it to detect stock outs for sale items, and Sam suggested using a new DéjàClick-enabled capability to load test the website. Belinda wrote the three proposed DéjàClick uses on the white board, and the Committee agreed to pursue all three.

- Cache repopulation
- Stock-out detection
- Load testing

Priming the Pump

Back in August, Nozama.com had installed proxy caches in Tokyo and Frankfurt to improve regional website performance for Portland-homed content. The caches were doing their job well but there was a problem. The caches had to be cleared at 4 a.m. local time before each new business day began to avoid serving stale content such as old prices and outdated product information. An empty cache meant the first site visitors of the day had to wait for data to be fetched from origin servers in Portland—subjecting them to long waits.

Bert's idea to remedy the problem was to automatically run DéjàClick scripts immediately after the caches were cleared to emulate user behavior to repopulate the caches. In this way bona fide early-bird shoppers would experience the same performance as later shoppers.

Bert arranged for Bryan Barlow to create a DéjàClick bionic shopper script and to make a “virtual shopper” the first site visitor of the day. This automatically repopulated the caches, priming the international websites for optimal performance at the start of each day.

Keeping the Goods Flowing

With Christmas approaching and seasonal sales planned, Marketing VP Belinda van Reis and Customer Service VP Sam Schwarz met with Nozama.com's Purchasing Director Ennio Paganelli to address a perennial problem. Popular promotions could quickly deplete inventories, leaving shoppers frustrated and shopping carts abandoned.

Belinda suggested that Bryan create DéjàClick scripts to monitor sale items for out-of-stock product codes. When out-of-stock codes were detected, Customer Service would contact Purchasing to take action.

Ennio arranged for his assistant to send a weekly email about upcoming promotions to Bryan, who used DéjàClick to generate and update a set of out-of-stock detection scripts.

Sizing up the Competition

Belinda and Sam wanted to ensure that Nozama.com's website could withstand holiday shopping crowds. They investigated a DéjàClick-enabled load testing capability and decide to implement it.

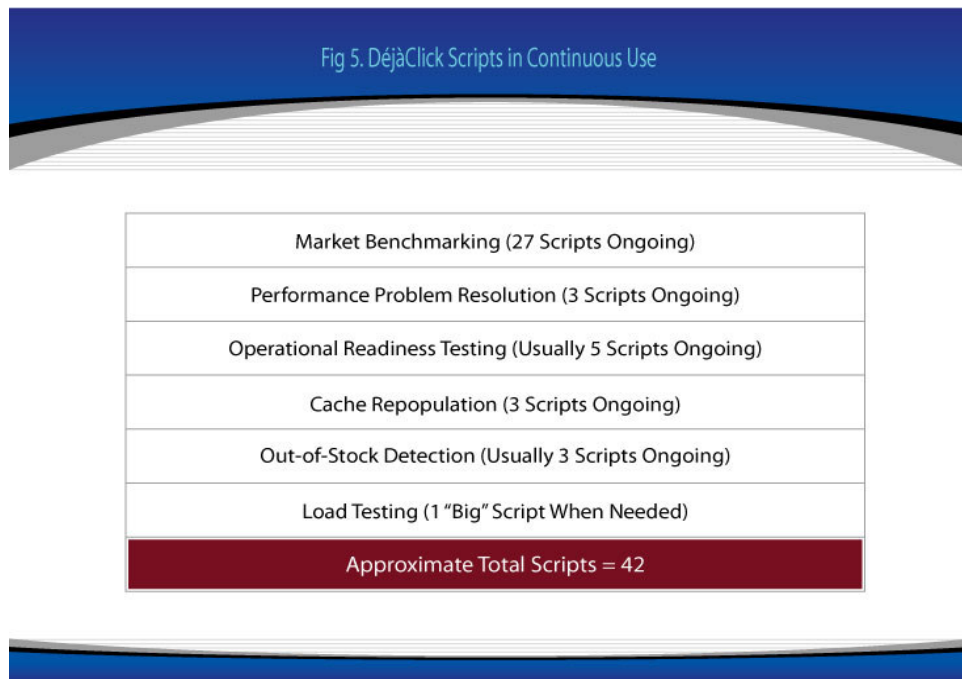
Bryan developed a sophisticated DéjàClick script that randomized navigation events to reflect the actions of a real shopping population. For example he determined what portion of the virtual shopping population was visiting the site for the first time and what portion constituted repeat customers. He also set a range of user “think times” and randomized it for highs and lows to reflect expected variability.

In October the Website Performance Committee met to review the load test results. They identified three areas of stress vulnerability and assembled a team to correct them. Sam noted with relief that if the vulnerabilities had gone undetected, they would have caused portions of the site to lock out shoppers.

Conclusion

In early January the Website Performance Committee held a year-end review meeting during which Belinda congratulated the Committee for helping to exceed the 10 percent sales growth target set by Nozama.com's CEO. Final sales results were 14 percent higher than the previous year.

Belinda noted that DéjàClick monitoring data was now used in five departments (that she knew of) including: Marketing, Customer Service, Operations, Engineering and Purchasing. The Committee tallied up the functions and the count of DéjàClick scripts in use (see Figure 5) at the end of the year.



The Committee agreed that the user experience as monitored by DeJaClick now served as a shared touch point for all Nozama.com departments to improve business processes and to guide website developments and enhancements. The Committee tallied results attributable to these improvements.

- Abandoned shopping carts down by 80 percent
- Customer Service center call volume down by 15 percent
- New feature rollout faster by 35 percent
- Performance-related feature rejection down by 50 percent
- Improved cross-departmental collaboration
- Sales up 14 percent (exceeding the corporate sales goal of 10 percent)

At the end of the meeting Belinda produced a champagne bottle and glasses from her computer bag—and the Committee toasted a job well done.

Wetzel Consulting LLC works with enterprises and vendors to improve the performance of networked applications.

Additional information is available at: www.wetzelconsultingllc.com
