

Keynote Takes QoE Global With KITE

Abstract

In June of 2008, Keynote launched the Keynote Internet Testing Environment (KITE) 2.0 – a unique capability that truly takes QoE-related testing and triage into geographically global terrain. Keynote is well known as one of the industry’s leaders in providing role-specific assessments of how and why the customer experience may be impacted by a whole variety of IT issues, and even some non IT-related issues, for Web applications, voice, and streaming media. Given the variety of roles and tests it can support, KITE can also serve as a catalyst for more effective communication in managing the lifecycle requirements of advanced Web applications by providing common points of reference to support distinctive functional experts. These include application development, Q/A Test, Web Operations and IT Operations overall, as well as business and portfolio planning. This impact analysis is targeted at placing KITE in industry context and providing a snapshot of some of the more distinctive features of KITE’s capabilities.

Event

On June 23, 2008, Keynote announced KITE 2.0, which it plans to roll out in mid Q3, 2008. KITE 2.0 builds on new features and capabilities that already existed in KITE 1.0, announced on October 30, 2007. KITE 1.0 was focused on testing quality of the user experience from the desktop, and supported advanced scripting to capture both individual page and multi-page transactions. KITE 2.0 expands on the KITE 1.0 feature set and takes it global by enabling tests from the desktop and a number of geographic locations across the Internet cloud. These include 2,400 “measurement computers” and mobile devices in 240 locations, with hubs in San Francisco (Sprint), New York (AT&T), London (PSI), Frankfurt (Verizon), and Hong Kong (HKT). San Francisco also offers DSL, last-mile connectivity testing support.

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KITE’s services include advanced scripting, detailed network performance monitoring, DOM analysis, and other tests optimized to support complex Web and Web 2.0 transactions across real-world Internet environments. Scripts can be run in burst-mode, and configured to run on a scheduled basis for baselining. The flexible nature of Keynote’s Software as a Service model optimizes it to support a variety of constituencies with very minimal deployment issues and fast time to value. KITE’s role-based capabilities invite relatively easy collaboration as is expressed by Keynote’s motto – “test locally, monitor globally.”

The KITE service is offered free within Keynote’s customer base in order to socialize the functionality and benefits across different constituencies, from application developers, to Q/A Test, to systems administrators, to Operations. This “free” access should also make it easier for Keynote to clarify and document its value proposition in support of more complete lifecycle collaboration. Keynote customers usually have a subscription agreement so that they’re charged for each script or URL-defined Web transaction

on a monthly basis. “Free” KITE now enables its customers to extend access to the service to non-Keynote subscribers within their own companies.

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Context

Keynote is an industry leader in tackling the thorny issues of capturing real end-user quality of experience and then providing triage for insights into where the problem might lie. Keynote’s services have evolved to become more lifecycle-oriented, supportive of application and Web developers, as well as Operations and portfolio, or business planners. Keynote currently takes two hundred million measurements a day for about 2,700 customers using real and emulated devices. Beyond testing for IT-specific issues, Keynote also supports business and portfolio planners with its services, including support market research for usability, competitive analysis, brand/value proposition Website assessments, and verticalized industry scorecards.

Web experience is Keynote’s dominant focus. This includes test and measurement from the customer perspective, benchmarking against competition, tracking support for SLAs, evaluating performance in real-time and in lifecycle mode, and predicting how a Web site will scale to support user demand. Wireless is about 30% of Keynote’s \$75 million in revenue – which includes support to ensure application and service compatibility across carriers. This makes KITE all the more relevant to current usage patterns for Web-based applications. Unrelated to KITE, Keynote also supports voice and streaming media services.

The Rise of QoE

ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) analysts have written extensively on “Quality of Experience” or QoE – the key word in QoE being “experience.” As a barometer then, QoE suggests that IT and business planners should recognize the multi-dimensional and even the subjective nature of how their customers perceive their services, and then try to honor this complexity with appropriate metrics, open-mindedness to changing business requirements, and customer dialog. While in the past, many IT organizations tried to measure QoE in terms of basic application availability, or operational metrics such as Mean-Time-to-Repair, the industry is evolving to a focus on transaction response time as the end user experiences it. Other factors impacting QoE can be consistency in response time, flexibility and choice in selecting services – including the choice to have the same service over both wireless and tethered environments – cost effectiveness, navigability, and even aesthetics as they may impact the Web interactive experience. In other words, different customers and different applications may require different parameters for QoE, so dialog, level setting and communication are important right along with the best technologies.

Keynote’s capabilities for looking at complex interactive experiences, playing them back, and assessing them over a wide variety of transport types across real-world geographical sprawl makes it a strong foundation for monitoring QoE. KITE focuses on synthetic tests, which provide advantages in benchmarking, governance, availability testing and planning, and diagnostics. As such it is complementary to some of the capabilities for observed transaction response time monitoring available in the industry, which offer

advantages in catching sporadic but often repeating problems that may or may not be captured by synthetic testing at fixed intervals. Keynote's impressive strengths in providing strong collaborative engagement across IT domains also make it a standout in helping QoE to become an integral foundation for IT processes in support of lifecycle application management.

Distinctive Functionality

KITE supports a wide range of Internet technologies including HTML, CSS, HTTP, JavaScript, Servlets, AJAX, SOA, XML, Flash, and video, among others. Kite's focus is on Web 2.0 applications – where the browser can become an active player in orchestrating mash ups and getting information through one or multiple servers. This places a tremendous burden on “front end” performance, which is where Keynote estimates that 80%-90% of the transaction time is lost.

Some of KITE's other distinctive features are:

- It easily detects when AJAX and Flash are used in a Web application. Customers can isolate AJAX calls and then drill down to analyze the effect of an AJAX call on a given home page.
- KITE uses real and emulated browsers that support the point-and-click user interface that records complex Web scenarios and that can then automatically generate scripts from actual user interaction (e.g., buying a book or placing a bid).
- Scripts can be manually recorded and then played back at set intervals either to serve as benchmarks or to perform triage in diagnosing Web application problems.
- Scripts can be run in burst mode up – so that a single test script will regenerate itself automatically up to ten times. Manually instigated scripts have no limit. Administrators can record test scripts, play them back in burst mode, share scripts across constituencies, and/or schedule scripts for benchmarking purposes.
- Network tests can be provided on-demand using ping and trace route measurements between the agent location and the server. Since the return path is not likely to be the same, the trace route can be done between the server and the desktop agent. Typically network testing is done more for diagnosing issues with performance degradation. Keynote finds that this is especially important in parts of the world, such as China, where Internet performance can vary significantly, and evaluating peering points can have a major impact on business performance.
- Keynote also provides discussion groups for KITE users. These include scripting, desktop measurements, provisioning across the cloud, a scripting showcase, a developer showcase, advanced provisioning, reporting and alarms.
- KITE lifecycle support follows the sequence: Design – Build – Test-Deploy – Operate –Optimize. KITE customers can communicate more effectively through a common language of test scripts to consistently test and measure Web applications throughout the lifecycle. For instance, Web Operations may be able to isolate a particularly unresponsive server in a Web 2.0 mash up. Or Web developers may discover that their application exposes too many fields at once, or is too chatty across

the network. Q/A can run functional/regressive tests. And system administrators can easily generate scripts for testing by going to a URL, building a shopping cart, looking up a bid, or e-mailing status of a purchase to a friend. In other words, multi-page transactions that real customers (internal and external) care most about can easily be captured and reused.

EMA Perspective

As Keynote itself suggests, “The richer the interactive experience on Web applications, the more appropriate it is to use Keynote.” KITE is designed to make lifecycle attention to QoE a global phenomenon, and its costs as a service are well worth it for complex Web-based applications that are competitively important from a business perspective. Its breadth of support for distinct constituencies, its “ease of deployment” as a service, and its instant globality make it a natural fit for enterprises and service providers seeking to optimize the value of the more critical Web applications in their portfolios.

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In this sense Keynote is also itself something of a catalyst. It is making it easier for IT professionals and business planners to come together with a common basis for dialog and a common frame of reference. The fact is that there are no well-defined best practices yet for these discussions, because the multi-dimensional nature of IT services as they relate to business competitiveness parallels the multi-dimensional nature of QoE, itself. For enterprises, in particular, it is no longer a question of two extremes – internal productivity-directed applications and external revenue-generating applications. Web 2.0 and eventually SOA and Web Services will enable new ways of doing business, new types of partnerships, and sometimes entirely new business models. KITE can play a valuable role then in not only supporting existing business directions, but in helping IT organizations and the businesses they support sit together at the same table,

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