

# ThousandEyes helps SaaS providers and customers see network problems

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16 Dec, 2013

ThousandEyes has created a modern cloud-delivered application to help identify and remediate network issues that manifest themselves as performance problems with the use of SaaS applications, or (often equally important) demonstrate that the performance issues are not caused by the network. The company is one of the first vendors to address the new challenges that arise as enterprise application use evolves to SaaS applications accessed via mobile devices.

When a company changes from an in-house application to a SaaS equivalent, the transition may be nearly invisible to the application user, but dramatic in terms of application performance visibility for the IT team. The performance of the application proper is no longer directly visible because it is operated remotely by a different organization, and frequently neither is the performance of the connecting network as it evolves from an enterprise WAN connection to some combination of ISP and Internet connectivity.

These new network configurations require new tools in order to restore visibility to issues in network performance (a necessary precursor if poor application performance is to be remediated). The ThousandEyes application fills that gap, providing innovative methods for measuring network performance and localizing problems that occur on networks owned and operated by other organizations, such as the network service provider of the enterprise or of the SaaS application operator.

The ThousandEyes application is a SaaS application, with the attendant advantages of rapid functional development and minimal operational overhead for the customer, as well as structurally enabling some innovative features to aid the collaborative use of the tool by enterprise users with the network and application providers.

## **The 451 Take**

ThousandEyes has created an innovative and differentiated application to address the new problems that use of SaaS applications brings with respect to diagnosing performance issues on other people's networks. ThousandEyes is an easy-to-use application that provides insight into the presence or absence of network problems as a source of SaaS application performance problems. The young company has garnered an impressive list of leading Web companies as early customers, as well as some large financial services firms. Bigger challenges are likely ahead with the enterprise market, where it will have to deal with the established application-performance-monitoring vendors.

## **Context**

ThousandEyes was founded in 2010 by Mohit Lad (CEO) and Ricardo Oliveira (CTO) - both UCLA network researchers - building from an NSF-funded project with a \$5.5m series A round from Sequoia Capital and angels, and currently has 30-40 employees. The San Francisco-based company launched in June, demonstrating a working product and an impressive list of customers, including Equinix, Evernote, Priceline.com, ServiceNow, Twitter, Zendesk and Zynga.

## **Products**

ThousandEyes has incorporated performance-measurement software and services in its eponymous SaaS offering. It enables the network team of an enterprise using SaaS applications (such as salesforce.com), or a SaaS vendor, to view and analyze the performance of the network connections involved when enterprise users access SaaS applications; identify network-caused performance-related issues; and collaborate with partners, including network service providers, to remedy the problems.

The product includes the application itself and a network of distributed performance agents operated by ThousandEyes that the customer can program to measure the performance of key applications - similar to the monitoring services other performance vendors offer, with the additional capability of identifying and tracing the specific network path used at that time. It also includes a virtual machine packaging of the same agent, which the customer can deploy in other specific locations to gain additional data, and a browser agent that can be used to help diagnose application performance from mobile devices from unknown locations.

The product records performance measurement data from these agents and provides the ability to perform DVR-like playback so that reported application-performance issues can be correlated with measured application performance in that time period and with recorded network issues.

Finally, the product includes innovative collaboration features that enable a user to delegate selective access to another person (e.g., a member of the enterprise's service-provider team) in the form of a URL that lets the other person see the same data and collaborate on remediation, whether or not the other person is also a registered ThousandEyes user.

## **Technology**

The ThousandEyes offering builds on technology in multiple dimensions. It is a single-instance, multi-tenant (SIMT) cloud-based application that has been designed for universal Web access. It is able to determine network paths and performance across third-party networks, and it enables collaborative use.

An SIMT application has a single version of the software that is shared by all users. Contrasted with the legacy model of application delivery - where software is distributed to, and customized, installed and operated by each customer separately - an SIMT SaaS application is significantly cheaper to operate and support, and can be

evolved much more rapidly. In the SaaS version, each customer is using precisely the same software, so bug repair and functional enhancement can be much more rapid (fast software turns). A team the size of ThousandEyes could not have developed and brought to market a comparable legacy application.

The ThousandEyes application has been designed for use on essentially all modern mobile devices by assuring that it can be used on any modern browser (browser-specific technologies such as Flash are not used). Mobile devices play a critical role in support activities because they enable support technicians to work from anywhere they may find themselves when a problem arises. In a demo, ThousandEyes appears to have a modern and attractive user interface, so usability has not been compromised by universality.

ThousandEyes has developed and integrated network diagnostic tools that can be used on network segments not owned or operated by ThousandEyes customers, in contrast to most of the legacy tools, which reasonably assumed that the network was managed, and therefore that privileged-device access was possible. Getting performance and diagnostic data on managed networks is more straightforward (and well-supported by the existing products), but ThousandEyes has done a good job developing alternative methods, thereby creating a differentiated offering for unmanaged networks.

ThousandEyes includes features that enable collaboration between the different teams that may be involved in the diagnosis and remediation of the network problems that ThousandEyes identifies (e.g., an enterprise network team, the enterprises network service provider, the SaaS team). While working within the tool, a network admin can easily enable a partner to use suitable functions in the application by sending the partner a URL – the application is SaaS and used through Web interfaces – that, when referenced, puts the partner into the application with the context relevant to the problem being addressed collaboratively, similar to how a Dropbox user can easily share a URL that enables another person to access a specific file or folder whether or not the other person is a Dropbox user.

## **Competition**

There are few direct competitors for ThousandEyes in the sense of providing network tools specifically for SaaS application use. There are certainly myriad application-performance-monitoring tools to help identify application and network issues with conventional applications (AppNeta, AppDynamics), and there are vendors that can help diagnose networks that are not directly managed (Nimsoft). Vendors like ExtraHop specialize in measuring application performance as seen on the network, and New Relic and Boundary Inc provide Web application performance analysis in greater detail. However, none of these vendors provide a comparable offering today. As the value of the application is more broadly appreciated, there should be no shortage of potential competitors.

## **SWOT Analysis**

### **Strengths**

ThousandEyes is a well-architected, easy-to-use and highly functional application delivered as a service, with an impressive list of referenceable customers. Today it provides unique insight into network performance issues with modern SaaS applications that are increasingly part of the enterprise IT mix.

### **Opportunities**

With the expanding enterprise use of SaaS applications, the ThousandEyes business opportunity looks more than enough to fuel its growth in the short to midterm.

### **Weaknesses**

ThousandEyes is a small company with mostly first-mover differentiation. It has identified this important product opportunity before the established vendors, whose response has yet to be seen, but has not yet had to compete directly with these market incumbents.

### **Threats**

ThousandEyes has done a great job of showing what this kind of application looks like and can operate. Copying what it has done is not easy (creating a SIMT application requires careful design from the beginning; the indirect measurement methods have to be researched and implemented). It remains to be seen when and how the established vendors will respond.

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