

Enable Mobility With Application Visibility At The Edge Of The Network

Introduction

Customer-obsessed companies have shifted their strategies to embrace the mobile mindshift of their customers and are using digital disrupters to enhance their customers' experiences.¹ To shape those experiences, companies have to be intimately connected to the customer, which requires real-time application control and visibility. Consequently, businesses are looking to infrastructure and operations professionals to build a customer-centric network. To accomplish this task, packet processing has to be distributed and scaled linearly as the amount of services at the edge of the business increases. Similar to how servers changed the mainframe data centers, distributed architecture is the only way forward as more devices connect and applications increase both in quantity and requirements per device.

In September 2014, Aerohive commissioned Forrester Consulting to evaluate the adoption and perceptions surrounding application control and visibility. To do so, Forrester leveraged data from existing Forrester surveys and supplemented that data with a custom survey of 63 US and UK IT decision-makers at large firms of 1,000 or more employees.

Mobile Apps Are Transforming Business Processes

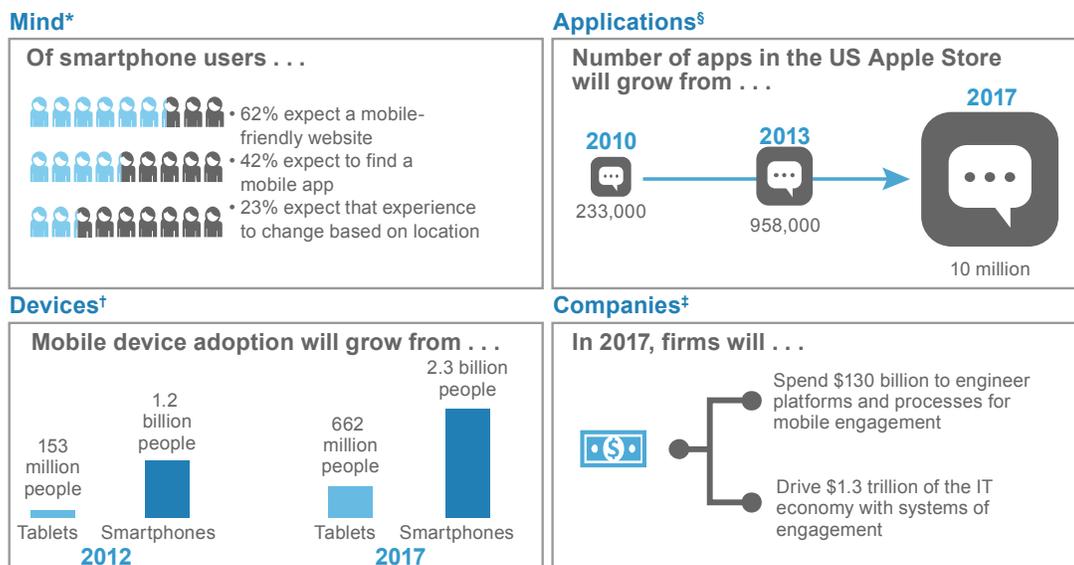
According to Forrester, the growing number of smartphone users will reach 2.3 billion people by 2017, which is causing a fundamental shift in the way businesses interact with their customers (see Figure 1). In the world of the mobile mind shift, people count on their mobile devices for everything. Customers expect any desired information or service to be available whenever and wherever they need it. Consumers can reserve meals, hotels, and cabs; share information; make videos; and even select potential mates on their phones. Whatever product or service your business offers, your customers (and employees) expect you to deliver on their mobile moment.²

Forrester estimates that by 2017, companies will spend over \$130 billion in building platforms and processes for mobile engagements. Applications are a crucial element of business success and are often the customer's first interaction with and impression of the brand. Mobile apps capture the essence of companies' value and brand promise and provide the means of engagement for customers.³ Currently, Apple's App Store has more than 1 million apps, which have been downloaded a cumulative

total of 60 billion times, or 8.5 downloads per person worldwide.⁴ By 2017, the amount of applications available in the App Store will exceed 10 million.

Applications have to be more than icons on mobile devices. The hard work is creating applications that provide value by accomplishing four goals: 1) proving intuitive operations; 2) defining task orientation; 3) creating contextual experiences; and 4) satisfying performance requirements.⁵ A customer walking into a store, hotel, or restaurant expects a system of engagement that interweaves various infrastructures and services to create application value across smartphones, tablets, and wearables. To create this experience, businesses have to be able to identify the customer at each touchpoint and then capture, track, analyze, and respond to their activities.

FIGURE 1
Businesses Are Turning To Mobile Engagements



Base: 4,404 US online adults (ages 18-plus) who use a smartphone

Source: "Mobile Moments Transform Customer Experience," Forrester Research, Inc., January 24, 2014

Traditional Practices Hamper Businesses

Organizations often enhance services and tackle challenges by deploying bigger, faster, or new hardware solutions without fully understanding the environment.⁶ Monitoring and data gathering take a back seat. Our survey found that when organizations have application performance issues with their wide area network (WAN), IT decision-makers will deploy WAN optimization appliances, increase WAN bandwidth, or upgrade data center infrastructure before leveraging monitoring tools (see Figure 2). Consequently, time and resources are wasted solving problems through shotgun approaches without identifying the real source of the problem.

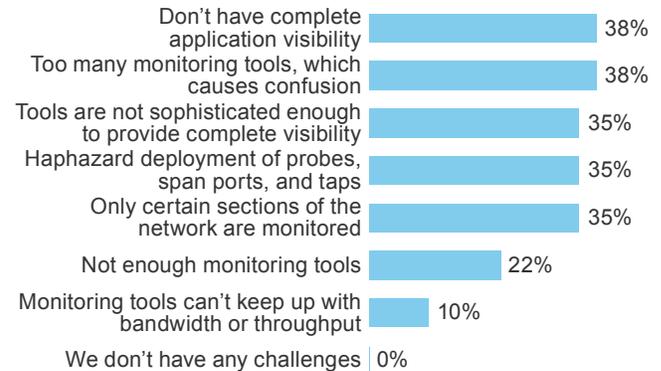
Forrester clients have told us that even when monitoring is deployed, it is often done in a haphazard manner that increases response times and erodes customers' experiences. Companies typically deploy monitoring in an ad hoc fashion when they have issues on certain parts of the infrastructure. Over time, networks become random pockmarks of span ports and taps that deliver redundant monitoring information in some spots and no information in others.

Our survey confirmed that even those companies that have deployed application management solutions often do not feel that they have "real-time visibility." The top cited challenge is overcoming monitoring solutions that are incomprehensive and offer monitoring and control for only a limited subset of applications (38%). Other major roadblocks within the organization include too many monitoring tools (38%); lack of adequate sophistication in providing complete visibility (35%); haphazard deployment of probes, ports, and taps (35%); and partial monitoring of sections of networks (35%) (see Figure 3).

FIGURE 2
Forty-Three Percent Of Organizations Have Implemented Performance Monitoring Solutions

"What are the primary challenges preventing your organization from implementing a real-time application monitoring system?"

(Select all that apply)



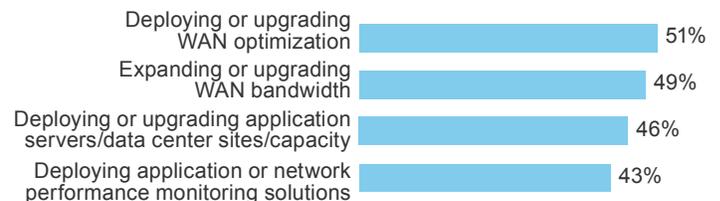
Base: 63 UK/US-based IT decision-makers at 1,000-plus employee firms

Source: A commissioned study conducted by Forrester Consulting on behalf of Aerohive, October 2014

FIGURE 3
Many Solutions Do Not Offer Real-Time Visibility

"Which of the following initiatives are you currently leveraging or will leverage to help improve the performance of applications and services or user experience across your WAN?"

(Select all that apply)



Base: 63 UK/US-based business decision-makers at 1,000-plus employee firms

Source: A commissioned study conducted by Forrester Consulting on behalf of Aerohive, October 2014

Leading Companies Start The Engagement At The Edge

By collecting data in such an ad hoc manner and/or ignoring it when attempting to solve performance issues, businesses can't create an accurate portrait of their customers' locations, activities, and requirements, and they are less equipped to meet their needs. At a time when mobile end users are equipped with a plethora of devices and an ever-increasing set of expectations, leading-edge businesses have taken steps to optimize mobile experiences by:

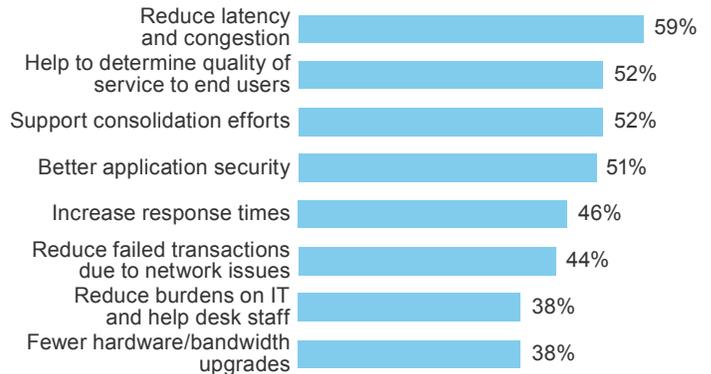
- › **Deploying application visibility capabilities.** Our study indicates that the IT decision-makers surveyed understand the important benefits of monitoring tools. The top five primary benefits that IT decision-makers expect from more application visibility are: reduction of latency and congestion due to resource monitoring and allocation (59%); help in the determination of quality service to end users (52%); support in consolidation efforts to manage more apps remotely (52%); better app security (51%); and an increase in response times by better understanding bandwidth requirements of various applications (46%) (see Figure 4).
- › **Supporting a distributed architecture.** An additional consideration as a response to the proliferation of mobile and virtualization is a network monitoring tool that monitors visibility "at the edge" of the network, where devices are connecting. Forrester's survey of 63 IT decision-makers shows that respondents believe there are some critical advantages to this additional visibility. IT decision-makers identified enhanced core applications and firewalls (67%); easier prioritization of business-critical apps (65%); and granular control for application usage based on context (53%) as major to critical advantages (see Figure 5).

The distributed monitoring architecture doesn't necessarily mean a separate monitoring environment. Over the years, networking has gone through a transition in which advanced network services have shifted from the core to the edge. Network components, such as access points and routers, come with the ability to find, identify, classify, reroute, or block packets with specific data or code payloads. This, in essence, provides the ability for network components to deliver application visibility and control at the edge of the business.

FIGURE 4
Application Visibility Leads To A Wide Array Of Business Benefits

"What are the primary business benefits that your business would expect from more application visibility?"

(Choose top five)

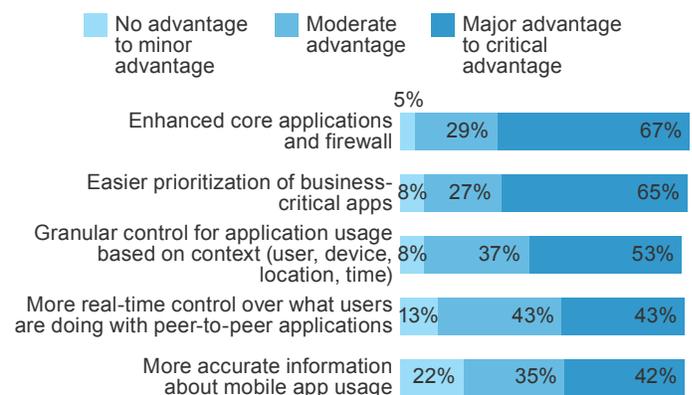


Base: 63 UK/US-based IT decision-makers at 1,000-plus employee firms

Source: A commissioned study conducted by Forrester Consulting on behalf of Aerohive, October 2014

FIGURE 5
Edge Visibility Offers Additional Benefits

"In addition to the visibility/performance monitoring typically available at the core of your network, some solutions also offer visibility at the edge of the network where devices are connecting. Please rank the advantage that this additional visibility would provide in regards to each of the following business benefits."



Base: 63 US/UK-based IT decision-makers at 1,000-plus employee firms

Note: Percentages may not total 100 because of rounding.

Source: A commissioned study conducted by Forrester Consulting on behalf of Aerohive, October 2014

Conclusion

To deliver the best user experience, IT decision-makers are striving to constantly measure and monitor their end users' activities across all application types and devices. Clear visibility enables IT to identify application problems and isolate each one to a specific application, location, or user within the network. This results in higher network performance, lower latency, and more productive end users. To gain this visibility while following the best practice of scaling by distributed compute power to meet business needs, organizations look to implement a standardized monitoring strategy that pushes visibility out to the edge where employees and customers connect.

Methodology

This Technology Adoption Profile was commissioned by Aerohive. To create this profile, Forrester leveraged data presented in its “Mobile Moments Transform Customer Experience” report. Forrester Consulting supplemented this data with custom survey questions asked of 63 IT decision-makers at 1,000-plus employee firms who are significantly involved in network and data communications responsibilities. The auxiliary custom survey began in September 2014 and was completed in October 2014. For more information on Forrester’s data panel and Tech Industry Consulting services, visit www.forrester.com.

Endnotes

¹ Forrester defines the “mobile mindshift” as customers’ expectation that they can get what they want in their immediate context and moments of need. Source: “Mobile Moments Require A New Technology Strategy,” Forrester Research, Inc., October 20, 2014.

² A mobile moment is a point in time and space when someone pulls out a mobile device to get what they want in their immediate context. Source: “Mobile Moments Transform Customer Experience,” Forrester Research, Inc., January 24, 2014.

³ Source: “Brief: Systems Of Engagement Take Center Stage,” Forrester Research, Inc., May 16, 2014.

⁴ Source: “Mobile Moments Transform Customer Experience,” Forrester Research, Inc., January 24, 2014.

⁵ Applications should provide the following: 1) intuitive operation: Customers will not read documentation about using a mobile app. If it's not immediately usable and engaging, they'll simply delete it from their device. The supporting stack of information technology systems may be complex, but the user interface must not be. Additionally, security controls must match the true risk of the data at the time of the mobile moment; don't put controls in place simply because they were there in the web version; 2) task orientation: Task-oriented experiences are a complete change in direction from web applications that often aimed to do everything for every browser user. Modern applications focus on executing a small number of tasks extremely well. And that means a surgical approach on the back end as well versus web applications that often dictated large, monolithic data architectures; 3) contextual experience: Connected devices know more about their owners' immediate context and personal habits than their own family — truly personalized experiences must leverage this power without being obtrusive. Modern personalized experiences communicate the context of every data exchange; 4) satisfying performance: Today's customers are impatient — apps that force customers to wait risk losing them to competitors. Customer expectations for response time and rendering are increasing right along with the scale of connected devices and interactions. What used to be proudly termed “web scale” is insufficient in the mobile world, and even mobile will pale relative to Internet-of-Things (IoT) scale. Source: “Mobile Moments Require A New Technology Strategy,” Forrester Research, Inc., October 20, 2014.

⁶ Identify, design, engineer, and analyze (IDEA). Source: “Re-Engineer Your Business For Mobile Moments,” Forrester Research, Inc., January 24, 2014.

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