End-To-End Application Acceleration Technologies Overcome SaaS Challenges

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Introduction

Even though infrastructure and operations (I&O) professionals were skeptical, business professionals have been quick to embrace cloud-based offerings; they are finding that cloud delivery can lead to some significant benefits, including reduced costs, improved time to market, and simplified technology rollouts. Forrester surveys indicate that enterprises have focused their software-as-a-service (SaaS) purchases on the following areas: to support business process areas (e.g., customer relationship management [CRM] or human resources [HR]), for collaboration (including messaging, email, and web conferencing), and for industry-specific process areas. SaaS releases shackles, enabling businesses to leverage applications that support a workforce that is mobile, empowered, and closer to their customers.[1]

As a result, employees are accessing business applications in the cloud, which used to reside within the corporate network, over an often unpredictable public Internet that I&O professionals no longer solely own, manage, or control. With packets traversing both internal and external networks, I&O pros can't rely on isolated and static solutions to support the new dynamic and business-driven workforce. This profile examines:

- The SaaS adoption rate and key trends behind this rate, as well as how SaaS adoption is accelerating changes within infrastructure and operations.

- The issues, including scalability, performance, security, and availability, that SaaS adopters encounter.

- I&O evolving from deploying point solutions to leveraging and interweaving existing infrastructure with other application acceleration technologies.

The SaaS Market Hits The Mainstream

As an increasing amount of organizations look for ways to cut capital expenditure and move future investments to an operating expenditure (opex) model, IT departments are growing investments in SaaS applications and expect to move even more applications to the cloud. In some cases, SaaS applications are completely replacing traditional models of application deployment. In a recent survey of IT decision-makers at large enterprises with more than 1,000 employees, Forrester found that firms made use of an average of four SaaS applications in 2010 and seven in 2011, and they expect to use up to 13 SaaS applications in 2012
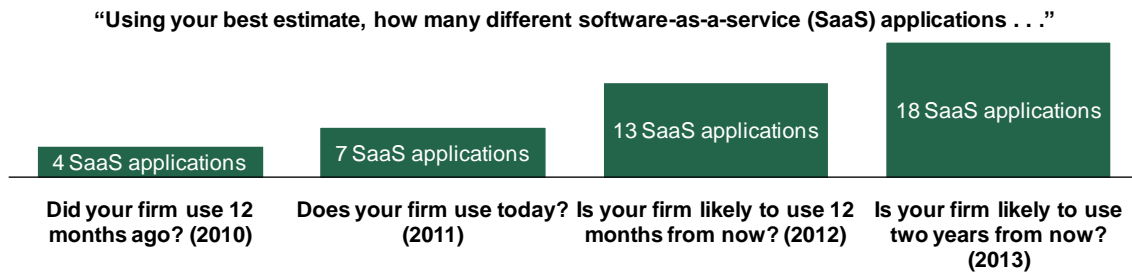
(a growth of 86%). By 2013, the surveyed organizations expect a further growth of 38% in the number of SaaS applications they use (see Figure 1).

And firms that have made investments in SaaS are beginning to achieve a variety of benefits, including lower costs, support efficiencies, and application flexibility (see Figure 2). The ability to significantly reduce overall costs is one of the leading benefits of SaaS deployment, with 38% of firms already achieving this benefit. Beyond the obvious cost benefits, the use of SaaS applications also makes it easier and quicker for organizations to roll out new services to users, enabling faster time-to-market (36%). Additionally, IT organizations can use SaaS to add new features and functions when needed and add and remove users, only paying for what they use. Business agility (45%), resource reallocation (36%), and the support of remote/mobile users (24%) are also key drivers of SaaS adoption.

Figure 1

SaaS Usage To Grow Exponentially

"Using your best estimate, how many different software-as-a-service (SaaS) applications . . ."

4 SaaS applications	7 SaaS applications	13 SaaS applications	18 SaaS applications
Did your firm use 12 months ago? (2010)	**Does your firm use today? (2011)**	**Is your firm likely to use 12 months from now? (2012)**	**Is your firm likely to use two years from now? (2013)**

Base: 291 US IT decision-makers at organizations with 1,000 or more employees

Source: Forrsights Software Survey, Q4 2011

Figure 2

SaaS Buyers Cite Cost, Speed, And Better Support As Drivers For Adoption

"How important were the following benefits in your firm's decision to use SaaS?"

Benefit	Percentage
Improved business agility	45%
Lower overall costs	38%
Faster delivery of new features and functions from SaaS/as-a-service providers	36%
Allows us to focus resources on more important projects	36%
Speed of implementation and deployment	34%
Lack of in-house IT staff to maintain a traditional software solution	25%
To support a large number of mobile and remote users	24%
Ability to substitute upfront costs with regular monthly payments	19%
Iterative deployment model supports a higher level of innovation within the business	17%
Gaining a feature or functionality that is not available in a traditional, licensed software package	16%
Having access to a wide ecosystem of solutions around the core SaaS application	11%

■ Very important factor = 5

Base: 258 US IT decision-makers at organizations with 1,000 or more employees

Source: Forrsights Software Survey, Q4 2011

SaaS Concerns Slow Deployment

In addition to benefits, the rapid growth of SaaS also brings with it some significant challenges to the IT organization. These challenges stand in the way of firms realizing the full potential of SaaS investments. Top on the list of concerns firms have are security, integration, lock-in, and performance issues.
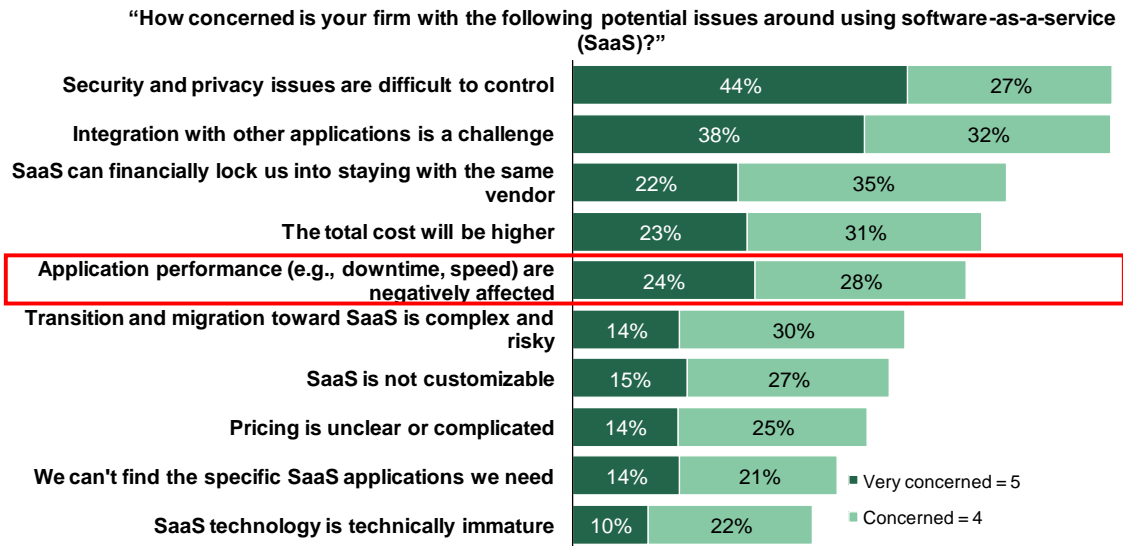
Of the firms Forrester surveyed, 52% reported being very concerned about the performance of SaaS applications. Downtime, speed, and application access are key concerns (see Figure 3), especially as organizations look to support mobile and remote workers through the use of SaaS. Firms reported being especially worried about the speed of web-based applications and that, in high traffic environments, SaaS applications might not be able to handle the speed requirements. For this reason, companies have been hesitant to move mission critical applications to the cloud, preventing the full realization of ROI from the use of SaaS.

To drill deeper into the actual application performance challenges organizations face with SaaS, Forrester surveyed 54 US IT decision-makers at large enterprises with more than 1,000 employees. Fifty-four percent of organizations surveyed had not experienced any performance issues with SaaS applications and planned to extend their use of SaaS. Organizations are still relatively early in the SaaS adoption cycle (see Figure 4). Surveyed firms had not fully replaced or complemented applications with SaaS apps, and, as such, they may not being seeing SaaS-specific challenges today.

However, for those organizations that have made deep investments, cracks are beginning to appear. Twenty percent of firms reported performance issues for a select number of SaaS applications; 19% stated that SaaS

applications across a select number of remote locations have performance issues. Of those that have realized performance issues, a further 11% reported performance issues for applications across all locations.
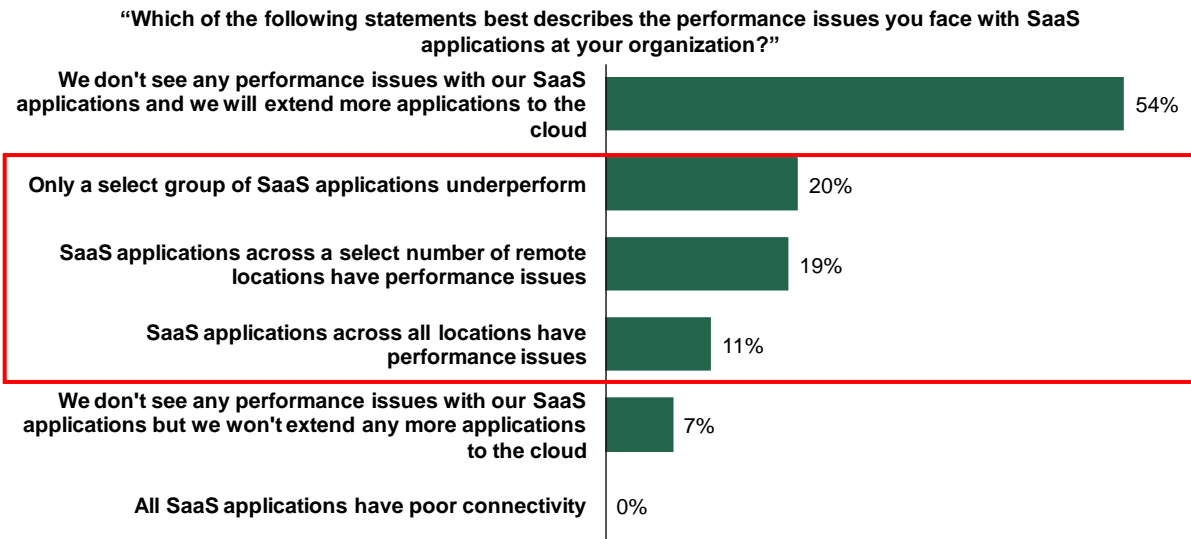
Figure 3

Security, Integration, And Performance Are Top Concerns

"How concerned is your firm with the following potential issues around using software-as-a-service (SaaS)?"

Issue	Very concerned = 5	Concerned = 4
Security and privacy issues are difficult to control	44%	27%
Integration with other applications is a challenge	38%	32%
SaaS can financially lock us into staying with the same vendor	22%	35%
The total cost will be higher	23%	31%
Application performance (e.g., downtime, speed) are negatively affected	24%	28%
Transition and migration toward SaaS is complex and risky	14%	30%
SaaS is not customizable	15%	27%
Pricing is unclear or complicated	14%	25%
We can't find the specific SaaS applications we need	14%	21%
SaaS technology is technically immature	10%	22%

Base: 338 US IT decision-makers at organizations with 1,000 or more employees

Source: Forrsights Software Survey, Q4 2011

Figure 4

SaaS Performance Issues Are On The Rise

"Which of the following statements best describes the performance issues you face with SaaS applications at your organization?"

Statement	%
We don't see any performance issues with our SaaS applications and we will extend more applications to the cloud	54%
Only a select group of SaaS applications underperform	20%
SaaS applications across a select number of remote locations have performance issues	19%
SaaS applications across all locations have performance issues	11%
We don't see any performance issues with our SaaS applications but we won't extend any more applications to the cloud	7%
All SaaS applications have poor connectivity	0%

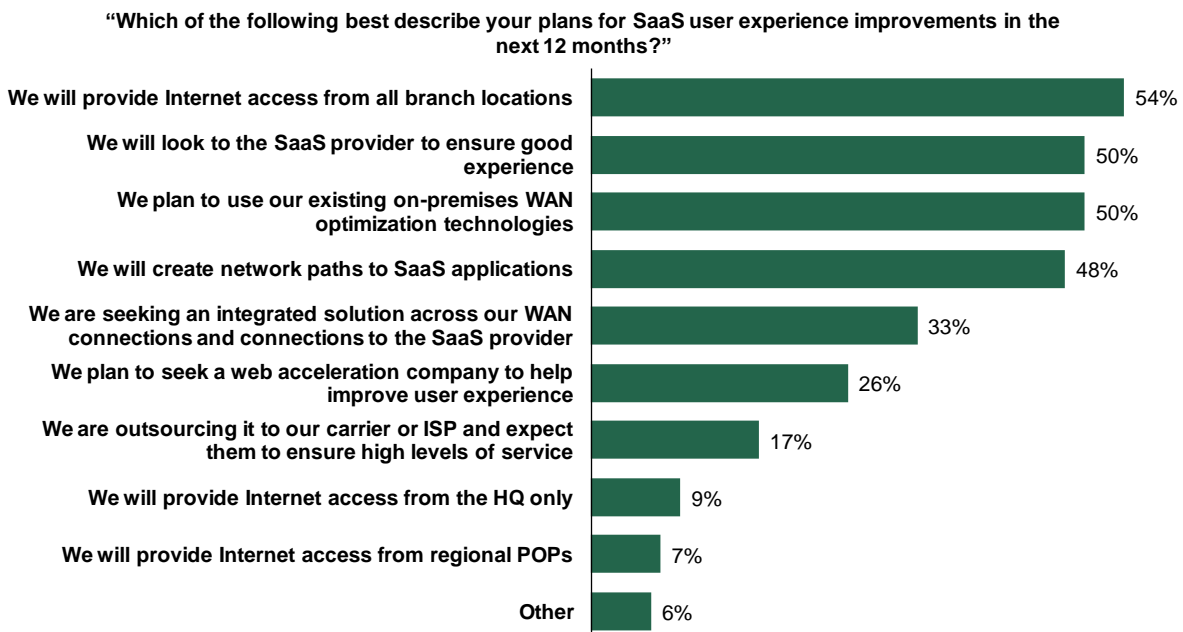Base: 54 US IT decision-makers responsible for software applications

Source: A commissioned study conducted by Forrester Consulting on behalf of Akamai and Riverbed, February 2012

Introducing The Solution: SaaS Application Acceleration

Application reliability, speed, and availability are critical to a successful SaaS implementation, and mounting SaaS performance issues are driving software application decision-makers to find solutions. When Forrester asked professionals responsible for software applications about their plans to improve the SaaS user experience in the next 12 to 18 months, we found that they were most likely to throw darts at the problem. From providing Internet access to all branch locations (54%), to looking to the SaaS provider to ensure good experience (50%), to using existing on-premises wide area network (WAN) optimization technologies to accelerate applications (50%), many organizations move into a purely reactive mode when considering any technology that may help solve performance problems (see Figure 5).

But simply throwing a lot of technology at the problem is unlikely to solve future SaaS application performance issues. Organizations need to be more strategic in their purchase decisions. They need to find solutions that intertwine all aspects into one coherent solution.

Figure 5

Organizations Use An Ad Hoc Approach To Solve SaaS Performance Problems

"Which of the following best describe your plans for SaaS user experience improvements in the next 12 months?"

We will provide Internet access from all branch locations	54%
We will look to the SaaS provider to ensure good experience	50%
We plan to use our existing on-premises WAN optimization technologies	50%
We will create network paths to SaaS applications	48%
We are seeking an integrated solution across our WAN connections and connections to the SaaS provider	33%
We plan to seek a web acceleration company to help improve user experience	26%
We are outsourcing it to our carrier or ISP and expect them to ensure high levels of service	17%
We will provide Internet access from the HQ only	9%
We will provide Internet access from regional POPs	7%
Other	6%

Base: 54 US IT decision-makers responsible for software applications

Source: A commissioned study conducted by Forrester Consulting on behalf of Akamai and Riverbed, February 2012

Organizations need new, consolidated ways to accelerate SaaS applications. Eighty percent of organizations believe that application acceleration technologies will help with providing a good user experience for SaaS applications from remote sites. I&O professionals will need to understand that:

- **WAN optimization controllers are only half the answer.** WAN optimization controllers can only support application acceleration in the business-owned WAN links.

- **Web acceleration technology is only half the answer.** Web acceleration technologies can help users connect to the closest source, but users still need to overcome any contention or WAN issues over the business links.

- **Hybrid networks require hybrid solutions that interact with one another.** As traffic traverses company-owned links and the public Internet (hybrid networks), users who are leveraging SaaS technology will get incredible benefit out of combining the two technologies.

Basically, hybrid networks act not as a single instance solving a specific issue but as a fluid and intertwined set of functions leveraging the most optimized set of capabilities and resources for the users. One piece will optimize connections within the business network against other business demands, while the other works with internal components to connect the user at the best location.

Figure 6

Applications Acceleration Solutions Bring Business Value

"Regardless of current use/plans, how much business value do you believe can be derived from technologies that accelerate the performance of SaaS applications (such as WAN optimization and other application acceleration solutions)?"
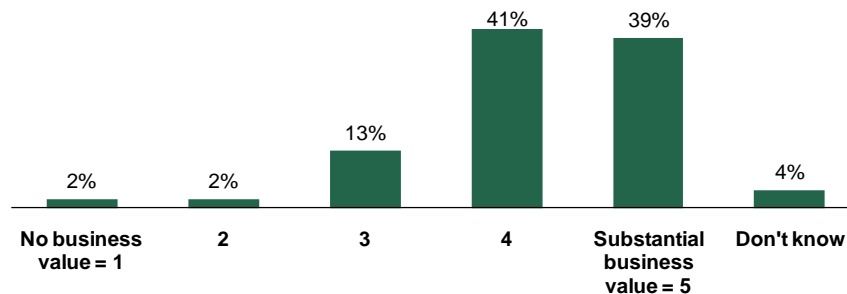
Base: 54 US IT decision-makers responsible for software applications

Source: A commissioned study conducted by Forrester Consulting on behalf of Akamai and Riverbed, February 2012

New Hybrid Application Acceleration Solutions Transcend Network Limitations

As businesses improve their responsiveness to their customers and their operational efficiency with new technologies like SaaS, demarcation lines that once controlled users, applications, and data are disintegrating. While I&O professionals are still bound by them, this doesn't mean there is no hope. Enterprises will need to combine optimization solutions to accelerate applications from the SaaS provider (or the front door step of the SaaS provider) all the way to the branch, headquarters, or mobile enterprise user. By leveraging internal optimization solutions and syncing them up with external optimization techniques, hybrid application solutions will provide the best user experience; these hybrid applications will allow firms to optimize the connection through the business network and the public internet to as close to the SaaS data center as possible, whether at home, on the road, or in the office. Fused application acceleration technologies enable users and applications to rise above the public and private network limitations and help businesses realize the benefits of CRM, web conferencing, and other software-as-a-service tools.

Methodology

This Technology Adoption Profile was commissioned by Akamai and Riverbed. Forrester leveraged its Forrsights Software Survey, Q4 2011 and isolated responses of US IT decision-makers at large enterprises with 1,000 or more employees. Forrester Consulting supplemented this analysis with custom survey questions asked of 54 IT software decision-makers. The respondents were asked about the SaaS application performance issues their organizations face and the methods they plan to use to overcome those challenges. This supplementary survey was conducted in February 2012. For more information on Forrester's data panel and Tech Industry Consulting services, go to www.forrester.com.

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[1] June 21, 2011, "Why I&O Must Design A WLAN To Provide The Best User Experience," Forrester report.