

The Ongoing IT Struggle: Delivering Availability 24x7x365

CIO Strategies Must Evolve For The
Always-On Enterprise

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Executive Summary

Today, there is more pressure than ever for businesses to be always on and always available. The enterprise ecosystem has expanded to include customers, employees, partners, and suppliers — and all of these stakeholders are demanding services be available 24x7x365. With this heightened demand for availability, businesses can't afford downtime. Every hour that systems are unavailable can significantly impact brand reputation, revenue, customer loyalty, and employee productivity.

IT organizations are under the gun to meet availability demands but struggle to keep up. With the business identifying an increasing number of critical systems and demanding greater resiliency and faster recovery, IT is unable to consistently meet performance service-level agreements (SLAs) and recovery time and point objectives (RTPOs).

In order to achieve a high level of availability, IT organizations must have a clear understanding of the factors affecting availability and a solid business continuity (BC) plan. The cloud can play a significant role in your availability strategy, but proceed with caution: Not all applications and workloads are suitable for the cloud.

Forty-five percent of IT and business managers and executives surveyed cited loss of customer confidence as the most significant business impact of downtime.

In July 2015, Veeam commissioned Forrester Consulting to evaluate availability strategies and practices at midlevel enterprises (1,000 to 5,000 employees). Then to further explore this trend, Forrester developed a hypothesis that tested the assertion that while workload and data protection will always be a key concern for preserving assets and the reputation of every organization, the status quo is shifting toward availability, driven by the growth of mission-critical and business-critical workloads. Availability requirements will extend beyond the confines of the on-premises data center. Workload and data mobility in, out of, and between private and public clouds will be a core requirement for midlevel enterprises.

In conducting an in-depth survey of 110 business and 110 IT managers and executives, Forrester found that organizations are scrambling to put processes and technologies in place to meet the demands of 24x7x365

availability. But for many companies, unplanned downtime is inevitable, and IT organizations are struggling to deliver on SLAs, often unable to meet business users' expectations.

KEY FINDINGS

Forrester's study yielded four key findings:

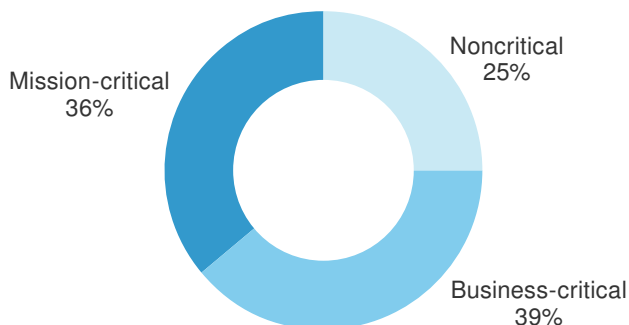
- › **Nearly every application is considered critical.** With the increased focus on serving both internal and external customers, critical applications are driving the demand for the always-on enterprise. On average, survey respondents reported that 39% of their organization's applications were business-critical, and another 36% were mission-critical.
- › **Every organization should prepare for downtime.** The likelihood your organization will experience unplanned downtime is high: Nearly half of the IT managers and executives surveyed reported having a disaster declaration or business disruption within the past 12 months. And while "disaster recovery" may conjure up images of hurricanes, earthquakes, and other natural disasters, operational failure is the main cause of unplanned downtime.
- › **IT falls short on meeting business demands.** Meeting SLAs some or most of the time doesn't cut it. By IT's own admission, it is failing to consistently meet performance SLAs, and its business counterparts are taking notice. The biggest gaps in perception between IT and business respondents — where IT reported better performance than the business perceived — were for applications supporting the acquisition, servicing, and retention of customers.
- › **Cloud services will play an increasing role in availability strategies.** Organizations currently have limited ability to move workloads to the cloud, but by next year, about three-quarters of IT respondents predict these capabilities will be extensive. Use of disaster-recovery-as-a-service and disaster recovery in the cloud is also expected to increase over the next 12 to 24 months, from about one-third of midlevel organizations to approximately 80%.

Critical Systems Are Driving Demand For The Always-On Enterprise

Today's enterprises seldom solely operate within the confines of their own "four walls." The reality is that modern organizations have an extended enterprise — one consisting of customers, partners, suppliers, and employees — and every stakeholder in this ecosystem expects services to be available 24x7x365. With that comes the expectation that nearly all systems are critical to business operations, whether they are systems of record or systems of engagement.¹ Our survey found that, on average, three-quarters of applications are considered mission- or business-critical (see Figure 1).

FIGURE 1
Majority Of Applications Are Considered Mission-Or Business-Critical

"What percent of your organization's applications and data are noncritical, business-critical, or mission-critical?"
(Mean average)



Base: 110 business managers and executives at organizations with 1,000 to 5,000 employees

Source: A commissioned study conducted by Forrester Consulting on behalf of Veeam, September 2015

There are several factors driving the increasing shift to critical systems:

› **Changing business requirements.** As enterprises become more dependent on technology to perform routine tasks, the number of critical systems increases. For example, email — which may not have been considered a critical application for most organizations as recently as five years ago — is now a mission-critical application for many companies.

- › **Changing customer expectations.** Today, both internal and external customers not only expect continuous availability for services, but they also want to be able to access these services via multiple devices. Forrester calls this trend "the era of now": The availability and resiliency of infrastructure has an impact on customer retention and satisfaction, for both internal and external customers.
- › **Increasing complexity with interdependencies.** We live in a world of interconnected applications, making each application an element in the chain. This increases dependency and, inherently, the complexity. All components must be available for a customer transaction to execute. If a critical application A relies on applications B, C, and D to be functional, all of those applications are now critical.
- › **Challenges communicating with the business.** IT professionals are charged with the task of determining the relative criticality of systems during a business impact analysis, which is a considerable challenge when each business unit feels its application is important. True criticality can be derived through objective measures, driven by monitoring tools tied to financial performance. However, more often than not, too many systems are deemed "critical" — not because of their actual business importance, but due to an application owner insisting on it.²

Be Prepared For Downtime

While the goal may be to provide your extended enterprise with seamless availability, chances are your organization will experience unplanned downtime — whether the result of a major natural disaster, such as hurricane, or a more mundane event like a power failure. It is critical for organizations to prepare for disasters and business disruptions, as downtime and availability issues can have significant internal and customer-impacting implications. Enterprises must recognize that:

- › **There's never a good time for downtime.** When you think of downtime, it's easy to conjure up the nightmare scenario of a major retailer's eCommerce site going down on Black Friday, one of the busiest shopping days of the year in the US. However, with the advent of the mobile workforce, an extended workday, and the global nature of doing business, there really is no good time for systems to go down. The reality is that the chances your organization will experience unplanned downtime are high: 46% of the IT managers and executives we surveyed indicated they

had had a disaster declaration or business disruption within the past 12 months.

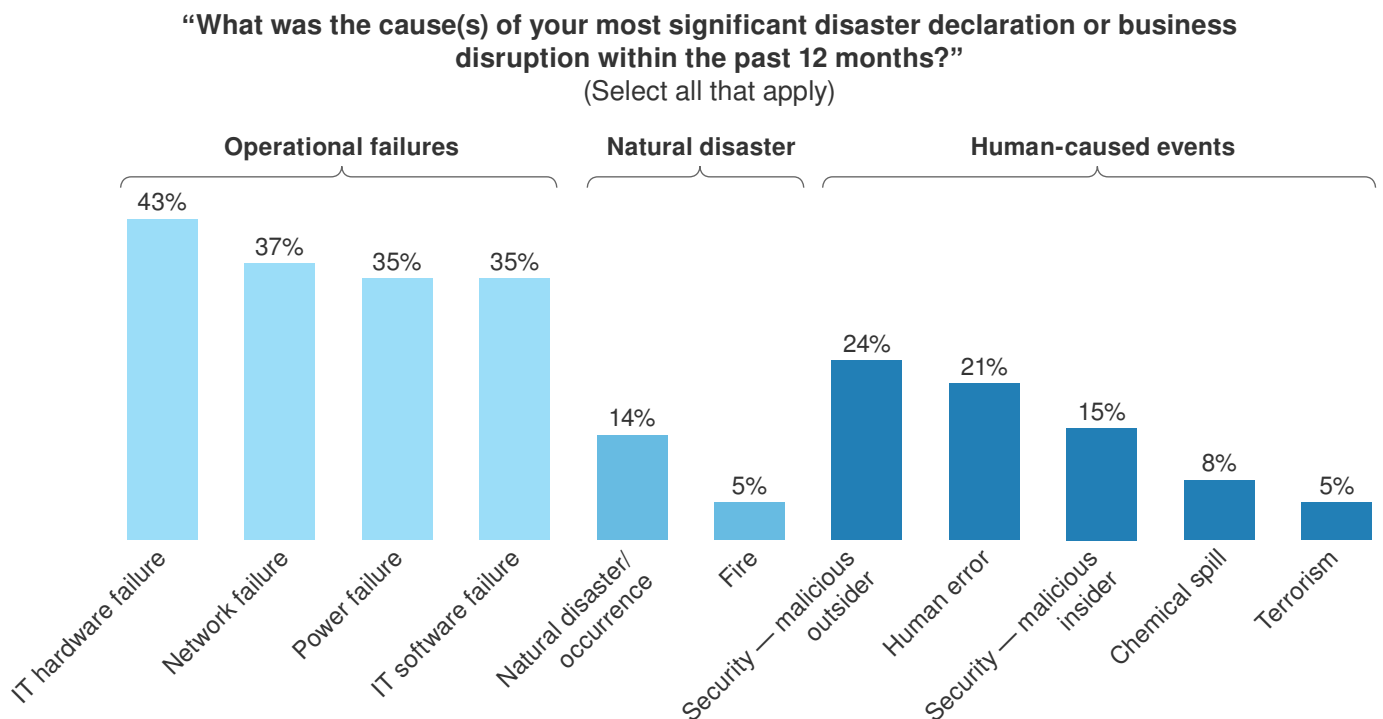
- › **Natural disasters are the least of your worries.** Major natural events — such as hurricanes, snow storms, tornadoes, earthquakes, and fires — can bring down systems at even the best-prepared organization. However, the greater likelihood is that your systems will be rendered unavailable by more mundane and potentially preventable causes. Among those organizations experiencing downtime within the past 12 months, IT hardware (43%), network (37%), IT software (35%), and power (35%) failures were the main culprits. But don't count out the human element. Malicious insiders (15%) and outsiders (24%) and human error (21%) can also wreak havoc on the availability of your most critical systems (see Figure 2). In fact, many operational failures are caused by human error.

- › **Downtime can have significant business implications.**

The majority of enterprises today have multiple systems in place to communicate and interact with the extended enterprise. Technology has become an important component in the way organizations work with employees, customers, partners, and suppliers. Because of this, downtime can have significant internal and customer-facing impacts. The IT and business managers and executives surveyed cited loss of customer confidence (45%), lost revenue (44%), loss of employee productivity (40%), and damaged corporate reputation (39%) as the top implications of poor availability (see Figure 3).

- › **Lack of planning is a recipe for failure.** To avoid — or at the minimum, mitigate — the impact of downtime on the organization and its customers, an in-place availability strategy is critical. However, the companies we surveyed still have a ways to go, as just 57% of IT pros reported

FIGURE 2
Causes Of Downtime



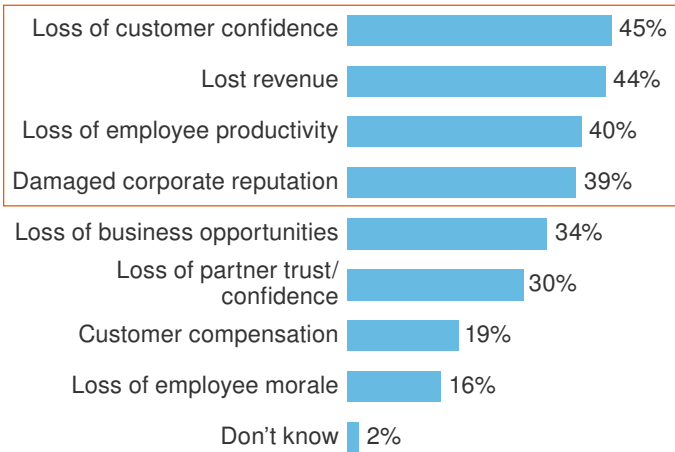
Base: 102 business and IT managers and executives at organizations with 1,000 to 5,000 employees that experienced unplanned downtime within the past 12 months

Source: A commissioned study conducted by Forrester Consulting on behalf of Veeam, September 2015

taking steps to build a backup and disaster recovery (DR) plan as a means to help address the risks related to downtime and business disruption. Without a solid BC/DR plan in place, it is nearly impossible to meet recovery objectives.

FIGURE 3
The Impact Of Downtime

“What are the most significant business implications of downtime and/or insufficient performance?”
(Select up to three)



Base: 220 business and IT managers and executives at organizations with 1,000 to 5,000 employees
Source: A commissioned study conducted by Forrester Consulting on behalf of Veeam, September 2015

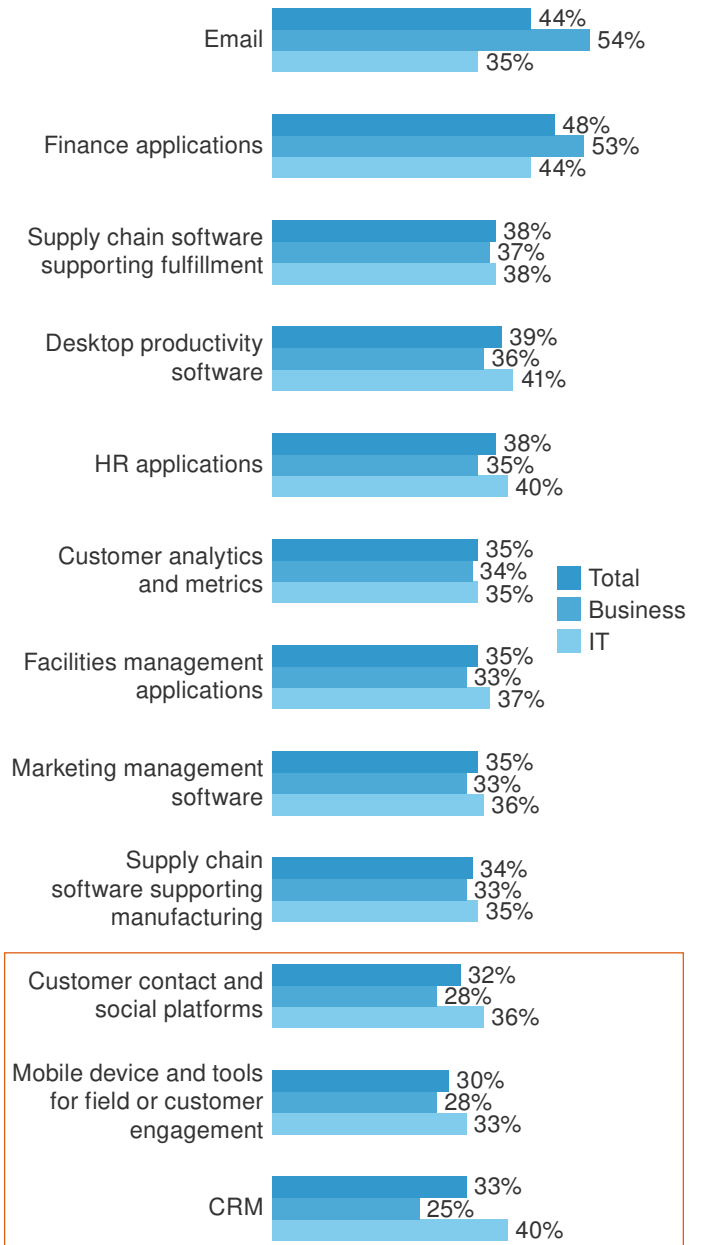
The Availability Gap

With the far-reaching internal and customer-facing implications of downtime, differences are inevitable between business expectations for recovery objectives and IT’s ability to deliver on them. According to a Forrester/Disaster Recovery Journal survey of global disaster recovery decision-makers, 35% of companies reported that mismatched business expectations from technology capabilities was one of the biggest challenges faced when recovering from their most recent disaster or major business disruption.³ The business managers and executives we surveyed are demanding their IT organizations deliver better availability, but IT is struggling to meet those expectations:

› **IT is missing the mark on SLAs.** IT is failing to consistently meet performance SLAs, with the majority of respondents indicating that IT is falling short across the

FIGURE 4
IT Falls Short In Meeting Performance SLAs

“How well is your IT organization meeting performance SLAs for these systems?”
(Those who answered “consistently meets SLAs”)



Base: 110 IT and 110 business managers and executives at organizations with 1,000 to 5,000 employees
Source: A commissioned study conducted by Forrester Consulting on behalf of Veeam, September 2015

board (see Figure 4). A closer look revealed that IT and the business had slightly differing viewpoints on the matter. The biggest gaps in perception between IT and business respondents — where IT reported better performance than the business perceived — were for systems of engagement: customer contact and social platforms (36% of IT respondents versus 28% of business respondents said IT consistently meets SLAs); mobile devices and tools for field or customer engagement (33% versus 28%); and most notably, CRM (40% versus 25%). Applications that support the acquisition, servicing, and retention of customers are the lifeblood of every organization. It's not enough to meet SLAs some or most of the time. Anything less than all of the time is unacceptable.

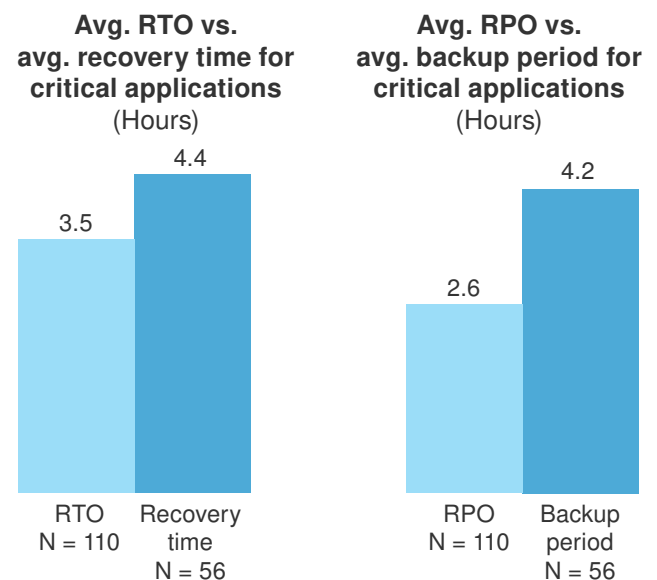
- › **Business and IT value workloads differently.** At the heart of the issue is that IT and business users have different opinions on the groups within their organization for which continuous availability is most critical. While the top three areas for IT respondents were the IT organization, core business areas, and the executive suite, business respondents valued customers, sales, and end users. An internal focus will keep core infrastructure systems running and available, but it cannot be to the detriment of the customer.
- › **Availability requirements are getting more stringent.** With the pressure for organizations to be always on and always available, it comes as no surprise that the demand for shorter recovery times and points is increasing. The majority of IT professionals we surveyed reported an increase in recovery time objective (57%) and recovery point objective (61%) requirements over the past 12 months.
- › **IT is struggling to keep up.** Business users are demanding more from IT, and with 45% of business respondents looking for better resiliency from their IT organization, IT is definitely under the microscope. Unfortunately, current delivery goals are seemingly out of IT's grasp. IT respondents reported an average recovery time objective (RTO) for mission- or business-critical applications and data of 3.5 hours, but an average recovery time of 4.4 hours. IT is similarly falling short in meeting recovery point objectives (RPO), with an average RPO of 2.6 hours but an average backup period of 4.2 hours (see Figure 5).
- › **Organizations' current availability capabilities are immature.** The IT organizations we surveyed are

currently utilizing common availability capabilities in their data centers. Two-thirds (65%) are providing security for data on-premises, and just a slim majority are ensuring security for data in flight or in the cloud, using backup data as a production-like test environment, or employing verified protection or data loss avoidance (see Figure 6). And while current high-speed recovery, complete visibility, and self-provisioning adoption is low, enterprises recognize the importance these capabilities play in a comprehensive availability strategy and are planning accordingly: According to our survey, by 2017, over 85% of midlevel enterprises plan to have these capabilities in place.

Building The Always-On Enterprise

There is no shortcut to 24x7x365 availability. For those organizations that have matured their approach to high availability and disaster recovery to the point where they are one and the same — a concept Forrester refers to as “continuous availability” — it has taken years of refining processes, adapting responses to downtime, and securing the appropriate levels of investment.⁴ In order to achieve this level of availability, IT organizations must have a clear understanding of the factors affecting availability and a solid business continuity plan.

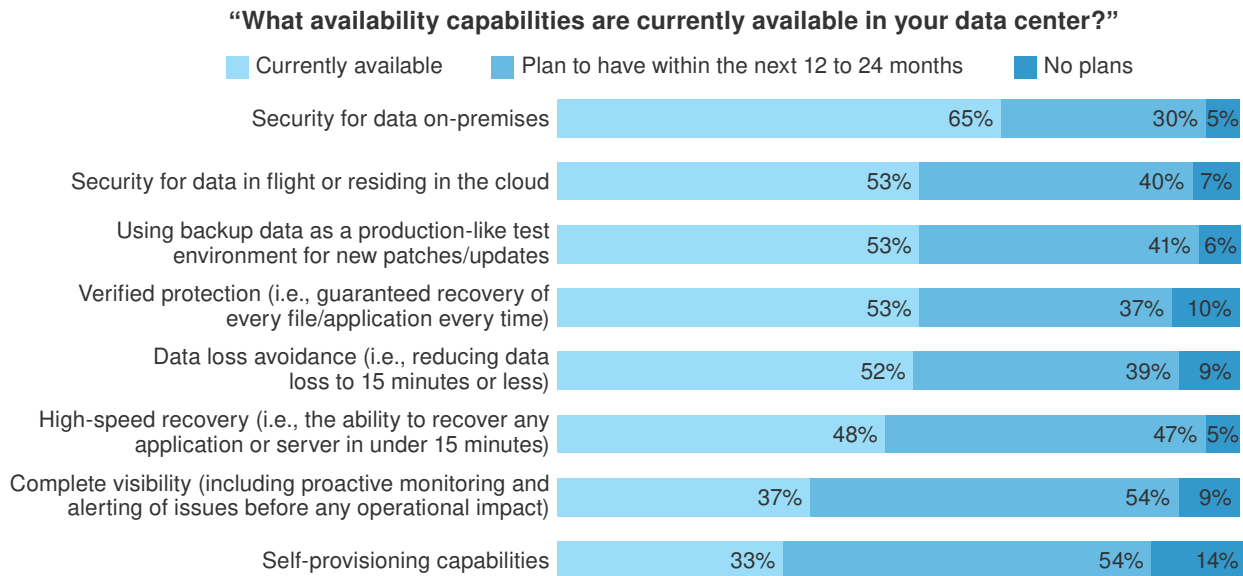
FIGURE 5
IT Is Failing To Meet RTPOs



Base: 110 IT managers and executives at organizations with 1,000 to 5,000 employees

Source: A commissioned study conducted by Forrester Consulting on behalf of Veeam, September 2015

FIGURE 6
Current Availability Capabilities Are Immature But Poised For Improvement



Base: 110 IT managers and executives at organizations with 1,000 to 5,000 employees

Source: A commissioned study conducted by Forrester Consulting on behalf of Veeam, September 2015

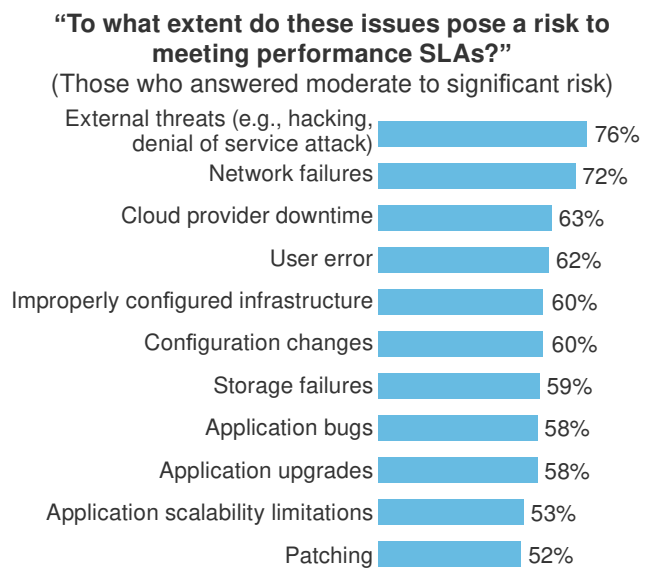
As previously discussed, IT organizations are failing to consistently meet SLAs. And while a natural disaster can significantly impact an organization’s ability to meet SLAs, it’s important to plan for more routine and common factors. Security incidents, upgrades and configuration changes, system failures, and even user error can all be potential hurdles to meeting SLAs (see Figure 7). These scenarios necessitate the need for both local and remote availability.

CLOUD SERVICES WILL HELP BUILD A RESILIENT ENTERPRISE

Regardless of the issue, it seems like everywhere you look these days, cloud is being touted as the solution. A recent Forrester survey of infrastructure decision-makers at midlevel enterprises found that developing a comprehensive cloud strategy is a critical or high priority for 69% of organizations.⁵ While it’s a common misconception that cloud services come with inherent resiliency, cloud *can* play a critical role in your availability strategy.

› **The ability to move workloads to the cloud will improve.** Cloud provides IT organizations the ability to scale up resources on demand while reducing costs during idle periods. While just 40% of the IT professionals surveyed reported that they currently have extensive

FIGURE 7
External Threats, Routine Processes, And System Failures Impact The Ability To Meet SLAs



Base: 110 IT managers and executives at organizations with 1,000 to 5,000 employees

Source: A commissioned study conducted by Forrester Consulting on behalf of Veeam, September 2015

ability to move workloads to the cloud, there will be substantial improvement over the next year, with the number jumping to 77% — a 93% increase over current capabilities.

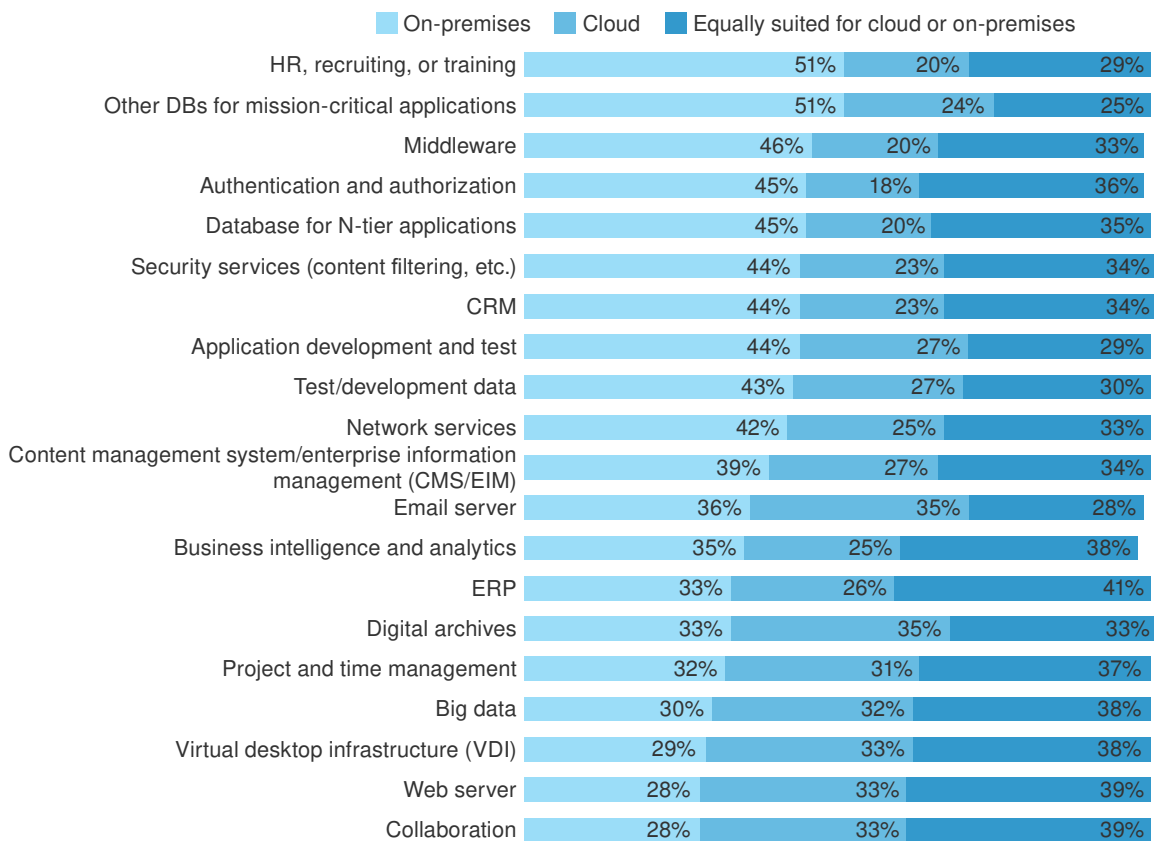
But not all workloads are cloud-appropriate. Before you pull the trigger on cloud services, it's important to understand which of your organization's workloads and applications would be best served in a cloud environment. While our IT respondents were willing to consider a cloud or hybrid model for collaboration, web or email servers, enterprise resource planning (ERP), BI/analytics, big data, or digital archives, they preferred to keep HR, recruiting, and training applications and certain databases for mission-critical applications on-premises (see Figure 8).

› **Use of cloud-based recovery services will increase.**

Few organizations today are leveraging cloud-based resiliency services. While 51% of IT respondents reported their companies are using backup-as-a-service or online backup for servers, just about one-third are using disk-to-cloud, do-it-yourself disaster recovery at a cloud services provider, or disaster-recovery-as-a-service (DRaaS). However, organizations are building cloud-based recovery services into near-term strategy: Within the next two years, use of DRaaS and do-it-yourself DR in the cloud in midlevel enterprises should reach about 80% (see Figure 9).

FIGURE 8
Not All Workloads Are Created Equal

“What types of workloads and application categories are most appropriate for the cloud, on-premises, or both?”



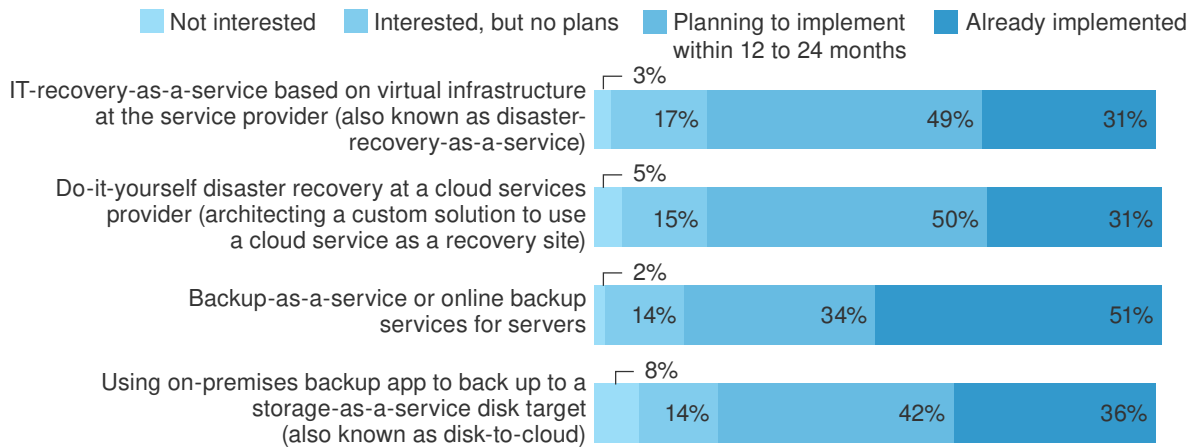
Base: 110 IT managers and executives at organizations with 1,000 to 5,000 employees

(“Don't know” responses not shown)

Source: A commissioned study conducted by Forrester Consulting on behalf of Veeam, September 2015

FIGURE 9
Use Of Cloud-Based Recovery Services Will Grow Over The Next Two Years

“What are your organization's plans to adopt the following cloud resiliency service offerings?”



Base: 110 IT managers and executives at organizations with 1,000 to 5,000 employees

(percentages may not total 100 because of rounding)

Source: A commissioned study conducted by Forrester Consulting on behalf of Veeam, September 2015

SERVICE AVAILABILITY IS EVOLVING TO AN AUTOMATED AND CLOUD-BASED MODEL

Enterprises struggle with the changing landscape for service availability; however, much of the friction has been self-inflicted. Survey responses indicate an adherence to classic backup models, despite the benefits of evolving to automated solutions that better capture state in real time and simplify service restoration. Cloud offers many advantages over older removable media for backup, so interest in cloud-based services is now growing rapidly after some heavy initial resistance. Still, the pressure to provide exceptional service for customers is finally accelerating newer availability assurance models focused on automation and resilient design. Gone are the obsolete manual backup methods. What is difficult to even call “backup” anymore is now becoming transparent, operating quietly behind the scenes. IT organizations now recognize the profound benefits of transparent operation because it frees technical labor to focus on more important customer-oriented work instead of babysitting systems. Those clinging to obsolete models face severe pressure and possible irrelevance.

Key Recommendations

The accelerated digital business is intolerant of legacy IT practices. The new challenges and opportunities for business continuity, disaster recovery, and data/service resiliency are stark departures from the old models. Forrester's in-depth surveys with business and IT managers and executives yielded several important recommendations to meet the needs of the new digital business demands and to deliver availability for the always-on enterprise:

- › **Know your business-critical service portfolio.** Business resiliency begins with understanding the digital assets of the business and how they should be prioritized. Everyone in IT should know the customer-focused business priorities for technology and their role in delivering services.
- › **Plan to build capability to meet SLAs in line with business expectations.** Design services to be dependable from the start. Human error is at fault for far too many failures. Well-engineered services and solid yet flexible processes will prevent many of these human error scenarios and deliver reliable results. Build the right level of dependability for the job, however. Business priorities will dictate the level of engineering and expense necessary for each service, with commensurate commitments to service levels.
- › **Classify workloads suitable for deployment in the cloud.** Business functions hosted on cloud services can unshackle you from many DR responsibilities, but not all. You will always be responsible for the data and for most applications, while the cloud provider can ensure solid infrastructure. Many business functions are not yet viable for cloud computing, however. Systems of record, which are back-end business systems, usually do not migrate well to cloud without significant reengineering. Newer systems of engagement are much better cloud candidates. Most business-critical systems fall in the former category and are thus less suitable for cloud. Pursue cloud services aggressively but realistically.
- › **Evaluate cloud-based disaster recovery possibilities.** Cloud-based DRaaS offerings are becoming popular because they provide trustworthy capability with good flexibility to changing needs and at a reasonable price.
- › **Deploy automated solutions.** You should not perform manual backups at this point in history. Technology in the form of new software, infrastructure architectures, and cloud-based services render classic backup obsolete. Pursue automated solutions that require little human intervention yet maintain trust that data and systems can be easily restored to a prior state when needed.

Technology management is critical to the digital business. Your own organization must meet these demands to deliver superior customer experiences. Those unable to abandon old practices will face severe pressure, and many will even disappear altogether, held back by their own inertia. The great businesses of the future will be great because they will excel at the new nimble models for technology development and management. They will be able to adapt and even preempt market changes and satisfy customers before the competition even knows what happened.

Appendix A: Methodology

In this study, Forrester conducted an online survey of 220 organizations in the US, Germany, and Australia to evaluate availability strategies and practices at enterprises with 1,000 to 5,000 employees. Survey participants included 110 IT and 110 business managers and executives. IT participants were involved with strategy setting, product selection, or day-to-day management of networking, data centers, storage/backup, or cloud services/virtualization. Business respondents were responsible for operations, business analysis, business analytics, customer experience, or finance. Respondents had to be at organizations that had data sets in the cloud, were moving or considering moving data sets to the cloud, or were creating new applications or data in the cloud. Questions asked of the participants were designed to identify perception gaps between IT and business users. Respondents were offered a small incentive as a thank you for time spent on the survey. The study began in August 2015 and was completed in September 2015.

Appendix B: Supplemental Material

RELATED FORRESTER RESEARCH

“The State Of Business Continuity 2015: Mission, Priorities, Program Management, And Budgeting,” Forrester Research, Inc., September 10, 2015

“Inquiry Spotlight: Business Technology Resiliency, H1 2015,” Forrester Research, Inc., July 22, 2015

“Brief: Four Trends Transforming Enterprise Storage To Support The BT Agenda,” Forrester Research, Inc., July 2, 2015

“Building The Always-On, Always-Available Enterprise,” Forrester Research, Inc., June 11, 2014

“The State Of Business Technology Resiliency, Q2 2014,” Forrester Research, Inc., May 12, 2014

Appendix C: Endnotes

¹Systems of record support the internal operations of the enterprise. These applications typically include finance, HR, facilities management, supply chain software that supports manufacturing, email, and desktop productivity software.

Systems of engagement support the acquisition, servicing, and retention of customers. These applications typically include CRM, mobile device and tools for field or customer engagement, customer analytics and metrics, marketing management software, customer contact (i.e., websites) and social platforms, and supply chain software that supports fulfillment.

² Source: “The State Of Business Technology Resiliency, Q2 2014,” Forrester Research, Inc., May 12, 2014.

³ Source: “The State Of Business Technology Resiliency, Q2 2014,” Forrester Research, Inc., May 12, 2014.

⁴ Source: “Building The Always-On, Always-Available Enterprise,” June 11, 2014.

⁵ Source: Global Business Technographics[®] Infrastructure Survey, 2015, Forrester Research, Inc.