

A Forrester Consulting Thought Leadership Paper Commissioned By BMC

Delivering On High Cloud Expectations

Meet Expectations With A Unified Cloud Strategy That Is Responsive And Transparent

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FORRESTER

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Executive Summary

The business and IT expect that cloud will solve many problems; however, we think that significant obstacles exist in the path to success. In February 2012, BMC commissioned Forrester Consulting to evaluate this hypothesis and provide recommendations to executives and architects considering their options. We conducted an in-depth survey of 327 enterprise infrastructure executives and architects with knowledge of their firm's cloud strategies and challenges.

We found that use of public cloud services has become ubiquitous and that most firms are planning to run mission-critical workloads on them. Business demands for easier, faster, and more flexible IT services are driving this behavior, and IT organizations can't afford to respond sluggishly, even while pursuing simplification and cost reduction objectives. CIOs sense the competitive pressure that cloud is applying to their organization and are prioritizing the creation of a comprehensive cloud strategy for their firms in the coming year. This strategy must create a path toward cloud that: 1) unifies management across public, private, and virtual services; 2) automates complex service provisioning and operations; and 3) creates transparency to enable real discussion about IT demand and cost.

Sixty-five percent of respondents thought that public cloud services compete with those provided by IT.

Key Findings

Driven by high expectations, 81% of our survey respondents indicated that creating a holistic cloud strategy is a critical or high priority for the next 12 months. However, our data also indicates that firms face significant hurdles as they attempt to deliver against these expectations. For example, among our respondents:

- **Fifty-eight percent run mission-critical workloads today in the unmanaged public cloud, regardless of policy.** Our survey suggests that the business is going around IT to get public cloud services today, regardless of policy, and IT leaders perceive this as a major contributor to complexity.¹ The need for fast, flexible, and highly available services is a major business driver for public cloud adoption.
- **Seventy-nine percent plan to run mission-critical workloads on unmanaged public cloud services in the next two years.**² Today, only 36% allow this; the large increase indicates IT acknowledgement that public cloud use can't be effectively stopped and may even have benefits in certain situations.
- **Thirty-nine percent reported five or more virtual server pools, and 43% reported three or more hypervisor technologies.**³ IT is struggling with significant complexity, and according to the study, this is not likely to change in the next two years. Not surprisingly, our study also found cost reduction to be the top IT priority in the next 12 months, with complexity reduction the top strategy for achieving savings.
- **Seventy-one percent thought that IT operations should be responsible for public cloud services.** While struggling with complexity, almost three out of four respondents thought that IT operations should be responsible for ensuring that public cloud services meet their firm's requirements for performance, security, and availability.
- **Seventy-two percent of CIOs believe that their business sees cloud computing as a way to circumvent IT.** The simultaneous pull of cost reduction and simplification in one direction and better, cheaper, faster in the other is

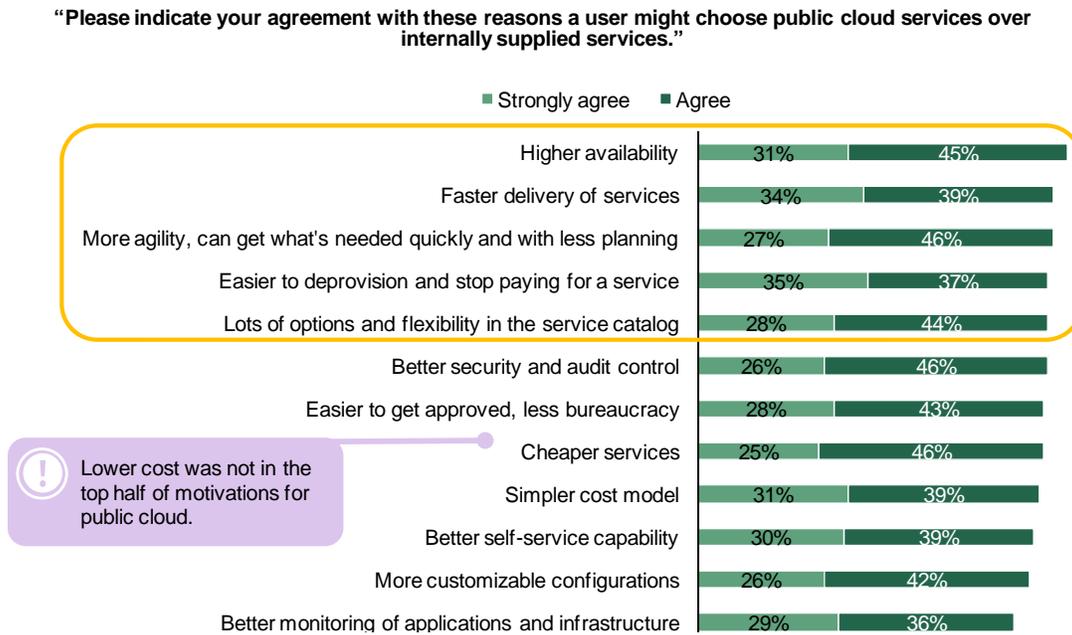
putting a strain on IT's ability to meet expectations. CIOs are concerned that cloud provides their business a way around IT, which undermines the strategic partnership they are trying to build with business leaders.

Cloud Expectations Are High Across The Board

Our survey found that expectations for cloud computing are generally high from both the business and IT. The survey data indicates that:

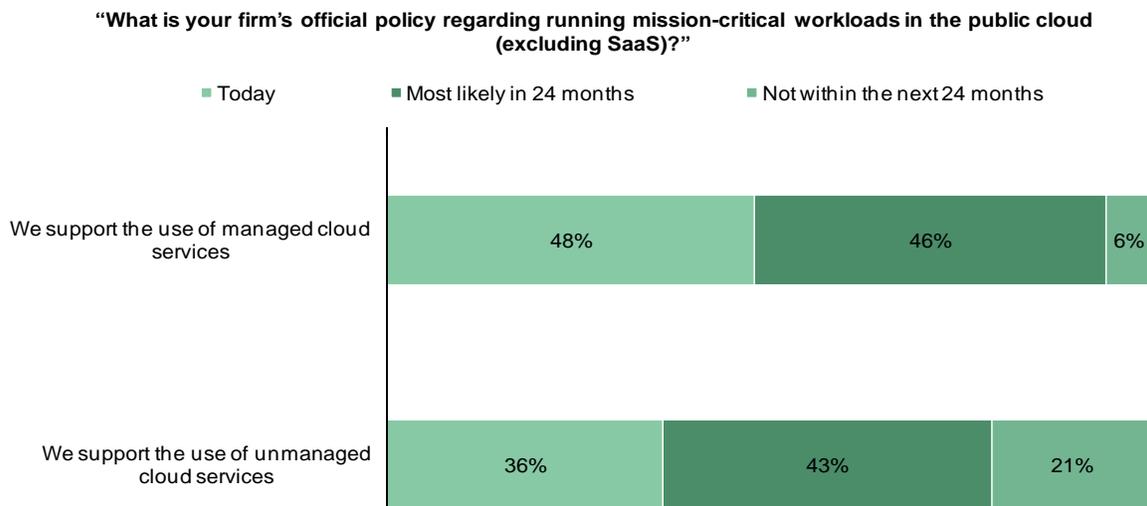
- **The business sees public cloud as higher availability, faster, more flexible, and to a lesser extent, lower cost.** Eighty percent of respondents reported deploying mission-critical workloads to managed public cloud services today, while 58% reported the use of unmanaged services. This drive to embrace public cloud services is in part due to the business perception that they are: 1) more highly available; 2) delivered more quickly; 3) more agile; and 4) easier to acquire (see Figure 1). In support of our assertion, we found that business departments with the most need for agility have most interest in cloud.⁴ “Cheaper services” was in the middle of priorities, indicating a belief that cost is important but not at the top of the list.
- **Firms are embracing public cloud services, with a preference for managing them internally.** Ninety-six percent of respondents will officially support managed public cloud services for mission-critical workloads in the next two years, while 82% will allow the use of unmanaged services (see Figure 2). We believe this finding to be a tacit acknowledgement that public cloud services are here to stay, and that, in some circumstances, they even represent the best approach. Furthermore, more respondents indicated plans to support managed cloud services, signaling they think that public cloud risks are lower when services are managed internally.
- **IT is struggling to both lower costs and deliver more capability.** Eighty-five percent of respondents said that operating cost reduction is a high or critical priority in the next 12 months. This reflects similar results in many other Forrester studies and indicates the central tension in most enterprise IT shops — the drive to lower costs brought on by complexity while also delivering services better, cheaper, and faster.
- **IT expectations for cloud benefits are high.** In our study, we asked respondents to prioritize a potential list of benefits that the cloud could deliver; faster IT service delivery was the top priority, with 83% indicating it was high importance (see Figure 3).⁵ While this result was expected, the lowest priority benefit — reducing infrastructure sprawl — still garnered a 77% high priority response. The narrow margin between highest and lowest indicates a general expectation that cloud will deliver all the potential benefits nearly equally. We think this is a tall order.
- **Amid these high expectations, CIOs worry that public cloud challenges their organization.** Sixty-five percent of respondents agreed that public cloud services compete with IT today. This isn't surprising: Consider that 28% of CIOs strongly agreed with the statement, “Business executives perceive cloud as a means to be less dependent on IT.” Only 19% of non-CIO respondents felt the same way (see Figure 4).⁶ This contrast indicates CIOs are more concerned than their teams that public cloud challenges, and maybe even undermines, their organization. We agree with their concern; unbridled public cloud acquisition by shadow IT circumvents carefully planned strategies to reduce complexity, control costs, and provide reliable services.

Figure 1
 Users Think Public Cloud Is Generally Faster, Easier, And More Agile



Base: 327 cloud-computing leaders
 Source: A commissioned study conducted by Forrester Consulting on behalf of BMC, February 2012

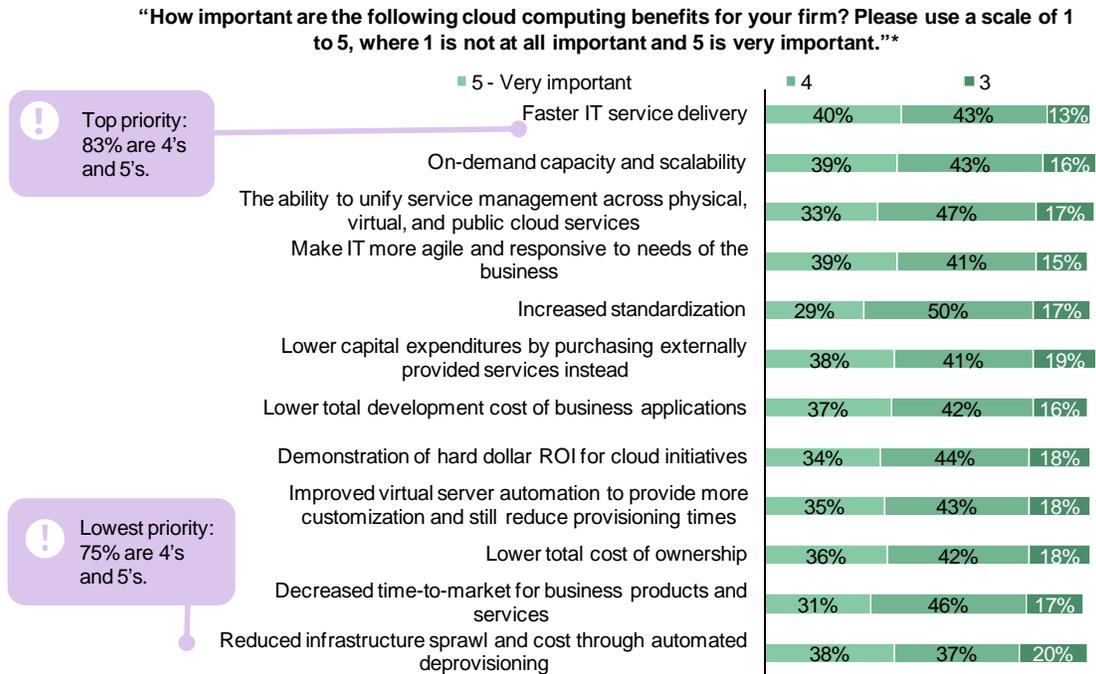
Figure 2
 Firms Are Expecting To Run Mission-Critical Workloads On Public Clouds



Base: 327 cloud-computing leaders
 Source: A commissioned study conducted by Forrester Consulting on behalf of BMC, February 2012

Figure 3

Very Small Spread Between Highest And Lowest Importance Indicates Broad, Elevated Expectations



Base: 327 cloud-computing leaders

*Note: 1 and 2 responses are not included.

Source: A commissioned study conducted by Forrester Consulting on behalf of BMC, February 2012

Figure 4

CIOs Are More Worried Than Their Teams That Cloud Enables The Business To Circumvent IT



Source: A commissioned study conducted by Forrester Consulting on behalf of BMC, February 2012

IT Faces Significant Hurdles In Pursuit of A Comprehensive Cloud Strategy

In response to the pressure, 81% of survey respondents told us that developing a comprehensive cloud strategy was a critical or high priority for them in the next 12 months. In executing this strategy, firms face significant hurdles because:

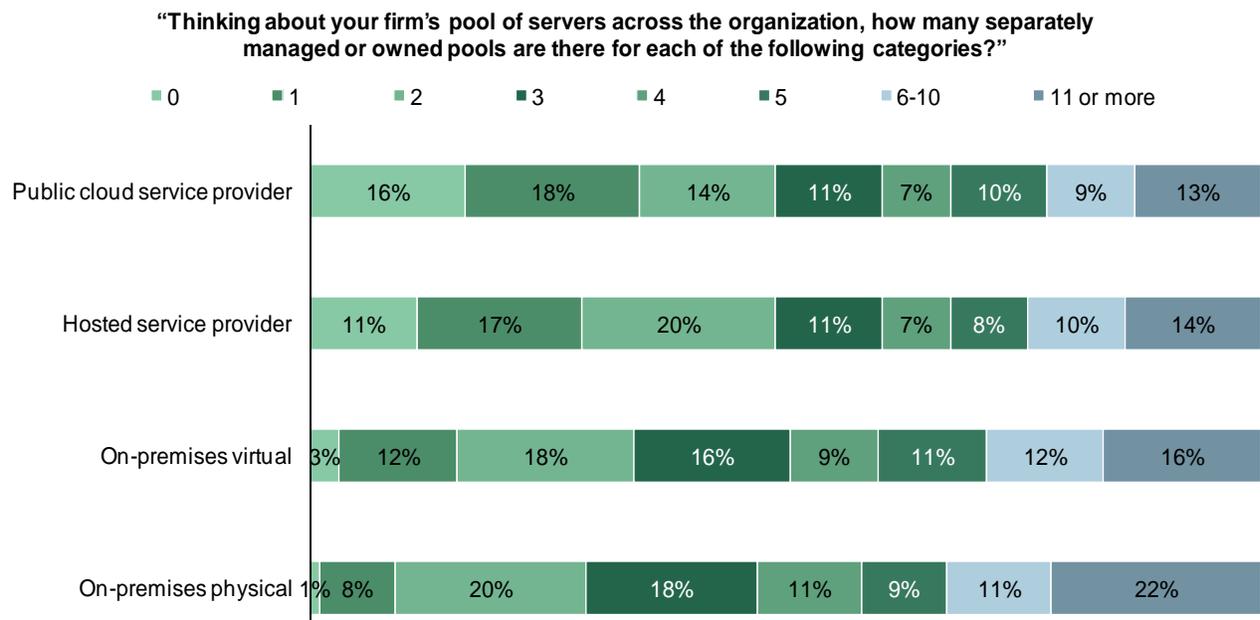
- They’re dealing with IT complexity from many sources, slowing progress.** In our survey, we found substantial evidence that IT complexity comes from many sources. As examples: 1) 39% of respondents reported having five or more on-premises virtual pools ; 2) 43% reported managing three or more hypervisor technologies; and 3) firms, on average, had 712 x86 servers in addition to their mainframe and RISC-based ones (see Figure 5).⁷ Highly interconnected, mission-critical applications and the technology requirements for legacy applications were the top two factors contributing to this complexity (see Figure 6). Further, when we asked about expected progress toward simplification over the next two years, the results can best be described as “slow and steady.”⁸ The bottom line is that complexity is not going away as a problem in the foreseeable future.
- “Shadow IT” acquisition of unmanaged public cloud services adds to complexity.** Today, 48% of firms surveyed officially support deploying mission-critical applications to managed public cloud services; however, as previously noted, 80% of firms are actually deploying these services. The 32% difference suggests that many firms circumvent IT to get the services they want, confirming CIO worries. The data for unmanaged cloud services is

similar. Furthermore, respondents reported that shadow IT's acquisition of unmanaged cloud service is a top contributor to IT complexity.

- IT feels responsible for supporting public services.** Seventy-one percent of respondents thought IT operations should be responsible for ensuring that public cloud services meet business requirements for performance, security, and availability (see Figure 7). This indicates that amid pressure to reduce cost and develop a comprehensive cloud strategy, IT feels it should be managing public cloud services — even those acquired behind its back.
- IT believes it will be difficult to achieve similar service levels across public cloud and internal infrastructure.** Sixty-one percent of respondents agreed or strongly agreed that it will be difficult to provide the same level of management across public and private cloud services (see Figure 8). Further, respondents told us that managing public cloud services requires planning and knowledge to get the best prices and manage usage properly (see Figure 9.) The IT attitude reflects the pragmatic reality of most public cloud service levels today and stands in stark contrast to business belief that public cloud delivers resources faster and with more ease.

Figure 5

An Example Of Complexity: We Found Firms Managing Multiple Server Pools



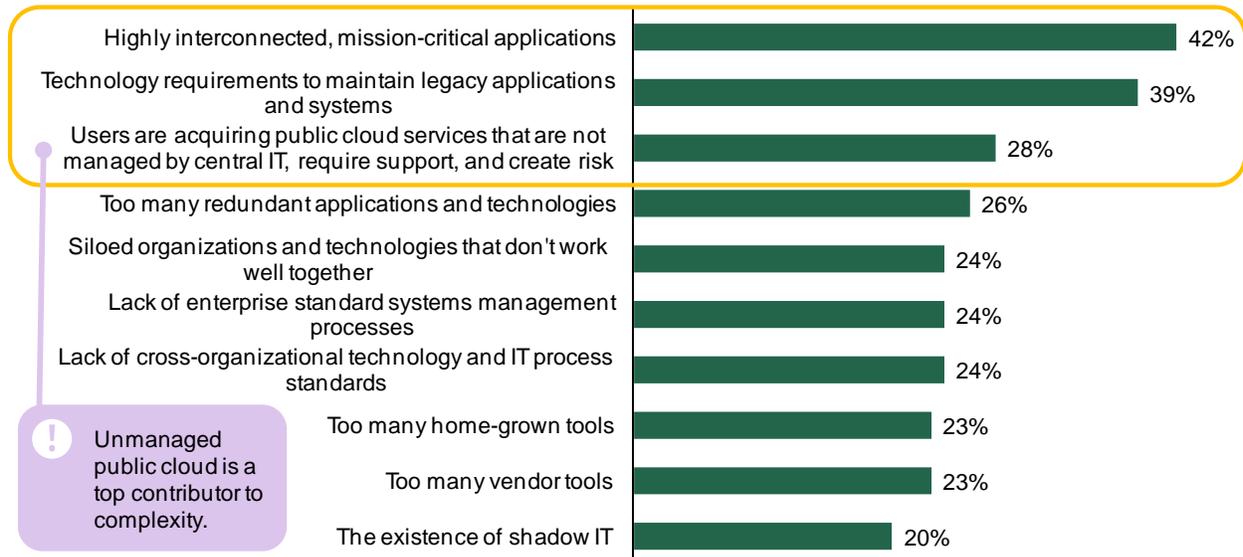
Base: 327 cloud-computing leaders

Source: A commissioned study conducted by Forrester Consulting on behalf of BMC, February 2012

Figure 6

Interconnected, Legacy Applications And Unmanaged Public Cloud Are Top Complexity Contributors

“In the following list, pick the top three contributors to your firm’s current state of IT complexity.”



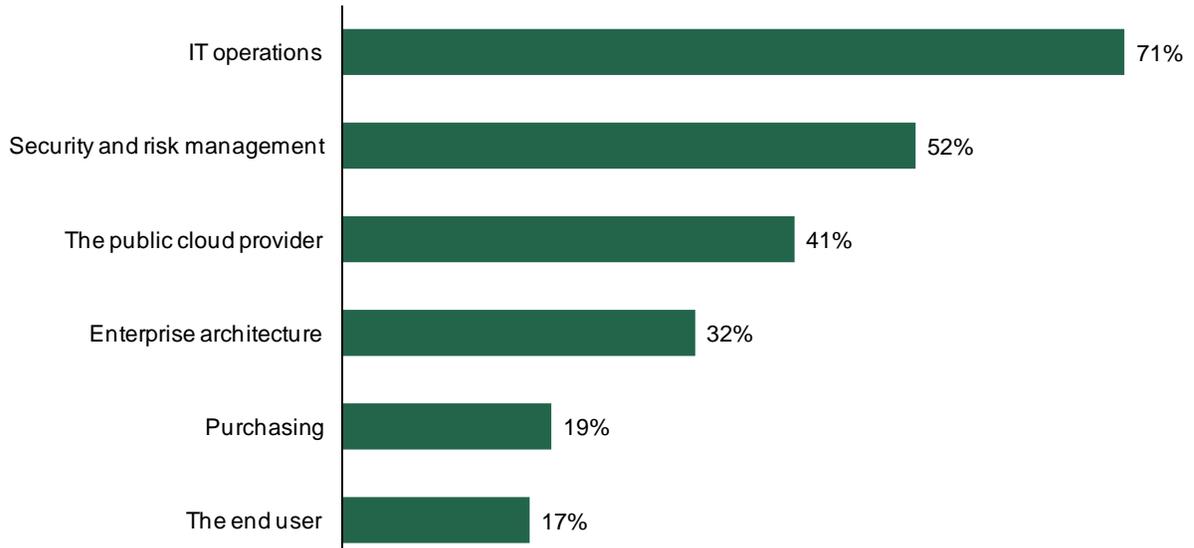
Base: 327 cloud-computing leaders

Source: A commissioned study conducted by Forrester Consulting on behalf of BMC, February 2012

Figure 7

IT Operations Believes It Must Ensure That Public Cloud Services Meet Enterprise Requirements

“Who should be responsible for ensuring that public cloud services meet your firm’s performance, security, and availability requirements? (Select all that apply)”



Base: 327 cloud-computing leaders

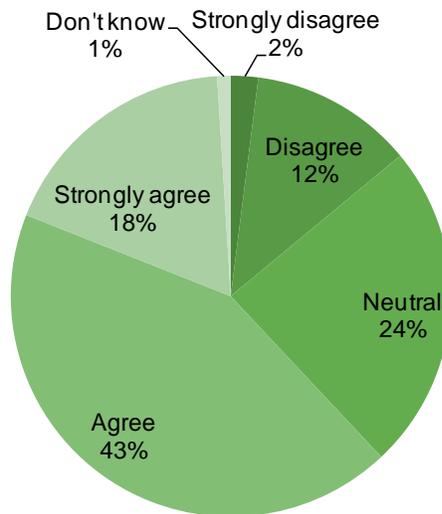
Source: A commissioned study conducted by Forrester Consulting on behalf of BMC, February 2012

Figure 8

Firms Acknowledge That Managing Public Cloud Services Will Be Difficult

“Please indicate your level of agreement with the following statement:”

“It will be difficult to provide the same level of management across both public and private cloud services.”

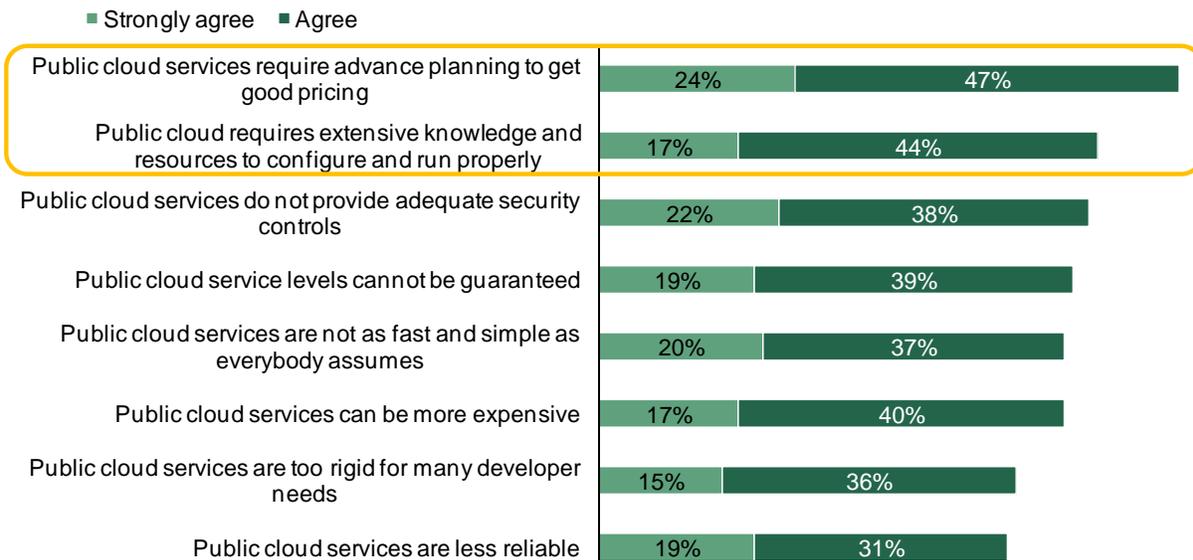


Base: 327 cloud-computing leaders

Source: A commissioned study conducted by Forrester Consulting on behalf of BMC, February 2012

Figure 9
Successfully Managing Public Cloud Requires Knowledge And Planning

“Please indicate your agreement with these statements about the shortcomings of public cloud.”



Base: 327 cloud-computing leaders

Source: A commissioned study conducted by Forrester Consulting on behalf of BMC, February 2012

A Responsive, Transparent, And Unified Approach Leads To Success

Succeeding in this challenging environment requires that firms meet business demands, control costs, and manage the public cloud services their users are acquiring without IT’s knowledge. To be competitive, a comprehensive cloud strategy must create a user experience that approximates what users can get from public providers. IT professionals must realize that their customers have a choice, which they are apt to take. Our survey indicates business’ willingness to opt for public cloud when internally provided services don’t meet requirements.

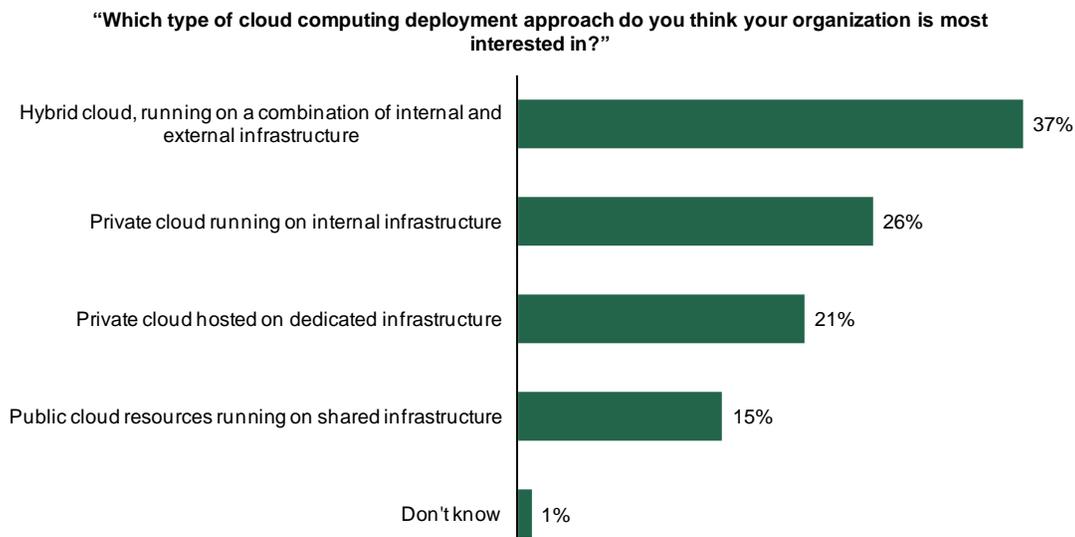
Successful cloud strategies will address the gap between what the business needs and what IT can deliver by:

- **Creating responsive services that go beyond simple server virtualization.** Thirteen percent of respondents reported plans to implement highly automated virtual server farms in two years, by far the largest increase of any service management discipline. This might not be enough, however, to meet business demands for agility. For example, our respondents reported the lowest degree of homogeneity for middleware services, which are notoriously complex. Responding to changing needs quickly in this heterogeneous environment will require: 1) sophisticated provisioning of middleware services (not just servers) via policy-driven workflows, and 2) IT operations automation to monitor complex service performance and take action quickly when targets are not met.

- **Creating transparency as a step toward shifting cost accountability to service consumers.** Cost control remains a top priority for IT executives, and implementing cloud is no different. The catch is that cloud enables cost transparency if done correctly, and this can change how your business makes decisions regarding IT. For example, 77% of survey respondents said that the cloud is focusing business expectations on IT cost transparency within the next two years. At the same time, 58% said that their business is not ready to accept a more transparent model that cloud enables, while 61% said that chargeback was a politically sensitive issue that the business is unlikely to agree to. Having fine-grained resource-allocation and consumption-tracking capabilities will help create transparency in actual service consumption and costs, in turn enabling real conversation about IT cost.
- **Unifying virtual, private, and public services to enable seamless delivery.** When asked which type of cloud computing they were most keen on pursuing, our respondents overwhelmingly said hybrid (see Figure 10). This response is consistent with our conclusion that public cloud services have become ubiquitous and that IT is acknowledging they must be included in their cloud strategy. Just managing internal virtual, private, and public cloud services in a hybrid solution may not be sufficient to achieve both the responsiveness your business demands and the cost controls IT is committed to achieve. Consider that technology requirements for legacy applications are a primary driver for complexity and that many of these applications will never run in the cloud or even virtually. Add this to the average 1,400+ physical servers that our respondents reported and you quickly realize a solution that unifies all of these is the best answer.

Figure 10

Interest In Hybrid Cloud Reflects The Broader Need For Unified Management



Base: 327 cloud-computing leaders

Source: A commissioned study conducted by Forrester Consulting on behalf of BMC, February 2012

KEY RECOMMENDATIONS

We realize that achieving the ultimate solution is a long journey. Begin by taking action now to:

- **Build trust with your business by understanding why public cloud is attractive to them.** Like it or not, central IT is not the only game in town for technology services anymore. We think your business would rather acquire services from IT, but a lack of trust regarding flexibility and speed of delivery has eroded their confidence. The first step in rebuilding trust is to have an honest conversation about their needs and IT's capability to deliver. Incorporate business requirements into your cloud strategy, and demonstrate progress toward them; this will go a long way toward establishing a true business technology partnership.
- **Shift from unmanaged to managed public cloud services.** Shadow IT's acquisition of unmanaged public cloud services is what introduces risk and complexity to your technology environment; however, our data shows that this is occurring, and we think it will continue. Ensure that your cloud strategy includes steps to convert unmanaged to managed public cloud services. For example, you can deploy your firm's standard services to Amazon Web Services (AWS), and some cloud vendors enable IT operations to monitor and manage performance of these remotely.
- **Unlock cloud agility by pursuing high levels of automation for complete service provisioning and operations.** Our survey indicates that the top priority for cloud is responsiveness to changing demands. With the speed of business today, the ability to rapidly provision and then operate services is critical; however, simple, image- or template-driven server automation won't be sufficient to provision complex, compound services such as those typical in middleware deployments. Instead, implement configurable workflow solutions that provide custom options so that your users can more rapidly deploy the services that meet their individual needs.

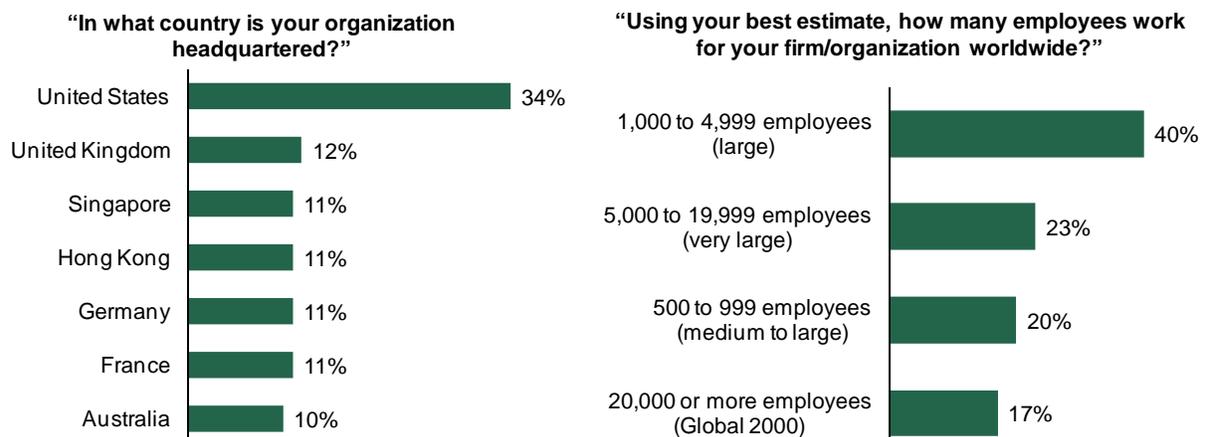
Appendix A: Methodology

In this study, Forrester conducted an online survey of 327 cloud-computing IT leaders across several industries in seven countries to evaluate cloud computing and IT's expectations around delivering the cloud. Survey participants included decision-makers relating to information technology. The study was conducted in February 2012.

Appendix B: Demographics/Data

Figure 11

Breakdown Of Survey Respondents By Country And Size

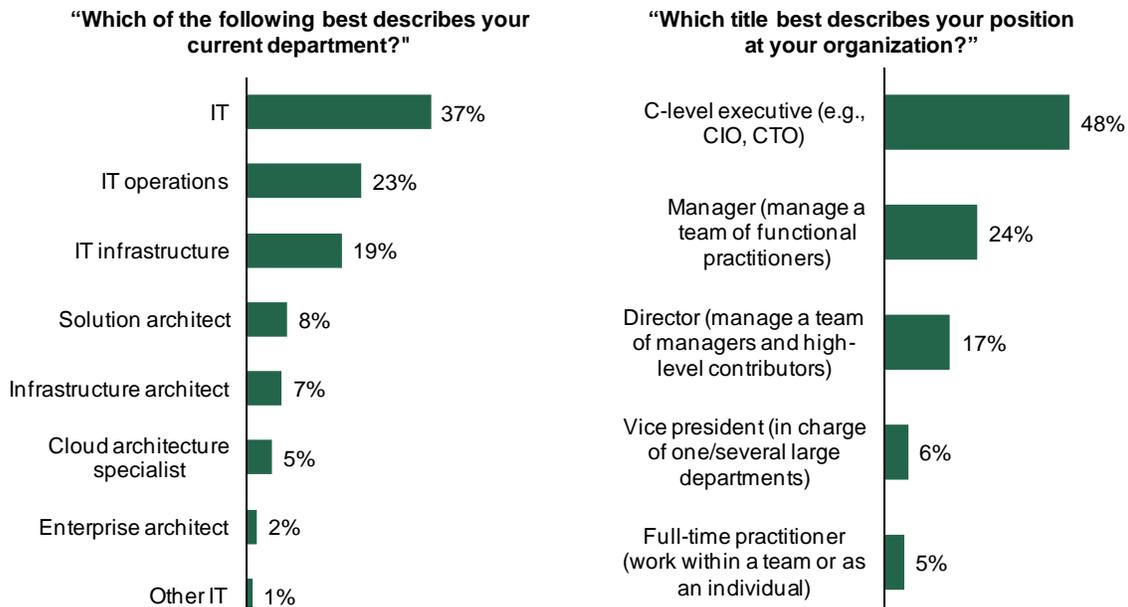


Base: 327 cloud-computing leaders

Source: A commissioned study conducted by Forrester Consulting on behalf of BMC, February 2012

Figure 12

Breakdown Of Survey Respondents By Department And Title



Base: 327 cloud-computing leaders

Source: A commissioned study conducted by Forrester Consulting on behalf of BMC, February 2012

Appendix C: Endnotes

¹ A cloud service is an infrastructure or application service offered in a highly standardized, automated fashion, available through a service catalog and billed according to usage. This service may be public (hosted on shared infrastructure by a third party), private, or hybrid. We do not include "software-as-a-service" in this definition. "Public" refers to cloud services that are hosted by a service provider in a multitenant environment, where the tenants are different legal entities.

² Managed public cloud services are cloud services hosted on shared infrastructure at a third-party location but actively managed by your central IT services organization. Unmanaged public cloud services are cloud services hosted on shared infrastructure at a third-party location that you trust the service user or service provider to manage.

³ A server pool is a logical or physical group of servers from which you draw resources.

⁴ In our survey, we asked respondents to indicate which departments had the most interest in cloud in their organizations - sales and marketing ranked first, with 34% of respondents indicating this department (or departments) was highly interested. R&D/product development was a close second, with 31% of respondents saying this department

was highly interested. We think this is because these departments deal with a substantial amount of market-driven risk and thus need the ability to change directions as markets shift.

⁵ We define “high importance” as responses of 4 or 5 on a 1-5 scale where 5 is “highest importance” and 1 is “not important.”

⁶ Seventy-two percent of CIOs agreed or strongly agreed that their business views cloud as a way around IT, compared with 65% of non-CIO respondents. Regardless, the message is clear — IT knows that public cloud gives the business an alternative to central IT, and this is putting pressure on them.

⁷ Our survey found that most firms have between 251 and 1,000 servers, with the following averages — x86: 712; mainframe, IBM, or other servers: 162; IBM Power: 338; Sun SPARC or Fujitsu SPARC: 251.

⁸ In our survey, we asked firms to assess the degree of homogeneity in their IT service management systems today and what it will be in two years; we felt that homogeneity — the number of technologies, tools, and differing processes — was a good proxy for environmental complexity. Respondents could indicate whether each system, such as storage management, network management, or server management, was: 1) highly homogeneous; 2) somewhat homogeneous; or 3) mostly diverse. In comparing responses for today and “in two years,” we noted that the biggest change was in middleware management, which increased from 15% highly homogeneous today to 24% in two years. All the other increases were less, indicating that firms intend to make slow and steady progress in simplifying their environments.