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Thought Leadership Paper
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Boosting Innovation With Public Cloud



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Executive Summary



Public cloud is now core to the success of the most innovative companies. Across the globe, organizations are realizing the transformative potential of public cloud platforms: Cloud is no longer just another way to provision technology. Cloud is now the engine of digital transformation, helping companies not only modernize how they build and operate IT resources, but fundamentally transforming the culture of their businesses as a whole.

In July 2018, AWS commissioned Forrester Consulting to explore how company cultures shifted once they adopted public cloud.ⁱ Forrester conducted an online survey of 412 IT decision makers with responsibility for cloud strategy and investments at organizations across North America, Europe, and APAC to explore how public cloud has shifted their companies' cultures. While everyone surveyed uses public cloud today, 41% are also using internal private cloud and 51% have used a hosted dedicated private cloud — use of cloud in all its forms continues to grow steadily. Within each organization, we surveyed a broad spectrum of roles and responsibilities — from C-level executives to practitioners. Our study found that companies view public cloud as more than another data center: It is an opportunity to fundamentally change and optimize their business models.

KEY FINDINGS

- › Public cloud adoption and expertise are both growing and expanding everywhere. Fifty-seven percent of organizations we spoke with have been using cloud for more than five years; 84% have been using cloud for more than three years.
- › Public cloud is transforming business process and strategy. Seventy-nine percent state that their businesses have been transformed by public cloud. Thirty-four percent report that they use cloud to fundamentally transform their business models and operations — a group we call the transformers.
- › Moving to cloud has significantly impacted culture across teams, divisions, and departments. As companies embrace public cloud across their organizations, they must think broadly to the individual roles and teams that will be impacted by public cloud and prepare employees accordingly.

ⁱForrester defines a public cloud platform as a publicly-accessible application-hosting platform for developing customer-created executables and running both custom-developed and commercial applications. Public clouds are standardized software foundations, are freely accessible by developers through a self-service interface, employ pay-per-use billing, and provide services on demand. Popular cloud services include a range of infrastructure (e.g., compute, storage) and development (e.g., database, integration, containers, machine learning) services. Public cloud platforms are distinct from cloud products that run in customer data centers (“private clouds”) and from hosted, multitenant software applications (SaaS), but share self-service and on-demand features.



Public Cloud Is Transforming Business

Public cloud adoption rates have increased significantly every year over the past decade, and that momentum continues today. According to Forrester Analytics' Business Technographics®, only 32% of companies had implemented or planned on implementing public cloud platforms in 2014; by 2017, 71% of global businesses reported implementing or planning to implement public cloud.¹ It's no wonder adoption rates continue to soar: Public cloud is more flexible, scalable, and recoverable than most alternatives.

Cloud allows *all* parts of the business to build new applications, modernize legacy apps, and turn IT and business users into innovators within their departments. These capabilities align perfectly with decision makers' top business priorities today: innovate faster, improve products and services, and create better customer experiences. Cloud is not only the fastest way to get started on business innovation, but it accelerates and increases returns on further innovation with its self-service, frictionless process for accelerating the adoption of new services. Companies want to get better, do things quickly, and remain cost-efficient, and they see public cloud as the best path forward.

- › **Nearly one-third of organizations are already using public cloud for software development/testing, rehosting, and extending existing apps — the full spectrum.** These businesses recognize that cloud is not just for creating net-new applications or adding a few new features to existing applications; today, organizations harness cloud to modernize even the most important business-critical applications to benefit the business in the long term. Nearly a quarter of respondents are actively using public cloud to extend or modernize existing data center applications in parts, proving that a hybrid approach to app transformation is increasingly popular. Cloud allows for flexibility; instead of an all-or-nothing approach to app and IT modernization, it allows customers to adopt change incrementally, at their own pace and on their own terms.
- › **Seventy-nine percent of businesses say that cloud is enabling fundamental shifts to their business models.** Thirty-four percent of those use cloud to significantly transform their business model and operations — a mere 16% are approaching cloud as purely another data center (see Figure 1). This is a notable change; companies now view cloud as a driver of business transformation, rather than simply another technology tool or computing location. Crucially, these transformers see public clouds as important for applications in every aspect of their businesses: operations, management of core business records, customer engagement, and metrics/monitoring analytics.



By late 2017, **71%** of businesses had already adopted public cloud or planned to by the end of 2018.

Figure 1

“Which of the following statements most closely describes your company’s use of public cloud platforms today?”

16% Tactical improvement:

We use cloud to incrementally improve some apps, infrastructure, or processes, but don’t fundamentally change our business model and operations.

45% Transition:

We use cloud to change or modernize many apps, infrastructure, or processes as we implement fundamental changes to our business model and operations.

34% Transform:

We use cloud to significantly transform our business model and operations as an immediate goal.

3% We don’t have a formalized strategy.

Base: 412 IT decision makers with responsibility for cloud strategy/investments at global organizations

Note: Percentages do not total 100 because of rounding.

Source: A commissioned study conducted by Forrester Consulting on behalf of AWS, July 2018

89% say cloud enables business model changes in part or all of their businesses, and 34% say cloud helps them significantly transform.

› **Regardless of their maturity, businesses across the globe agree that public cloud promotes culture change within their companies.** Three-quarters of respondents say that public cloud platforms have promoted cultural change at their company, more than half say that these cultural changes have positively impacted several parts of the business, and, remarkably, nearly one in five says the changes have been felt in *all* roles and departments (see Figure 2). This data shows clearly how cloud adoption is expanding throughout companies, encouraging changes to corporate culture that start a positive feedback loop. Cloud enables teams to work together more effectively, speed up and automate processes to improve delivery times, and collaborate more effectively. Cloud-driven cultural shifts are already well underway; the time has come to prepare your business to take advantage of these shifts — before a competitor does.

Barriers Are Falling

Improved IT infrastructure manageability and flexibility, security, and performance at scale are the top reasons businesses choose to move to public cloud; they expect cloud to make them faster, more secure, more automated, and able to handle any spike in demand. Transformers — those that use cloud to significantly change their business models and operations — are adopting public cloud platforms the most broadly. Tactical respondents start with low-hanging fruit like web and mobile applications (see Figure 3) — the classic public cloud use case. While barriers to cloud adoption are steadily falling, challenges do still exist.

Figure 2

“To what degree has public cloud driven cultural changes to your organization?”

19% Major changes to all roles and departments

51% Major changes to one or two departments

16% Major changes to small number of job roles

10% Minor changes to all roles and departments

3% Minor changes to one or two departments

0% Minor changes to small number of job roles

Base: 412 IT decision makers with responsibility for cloud strategy/investments at global organizations

Note: Percentages do not total 100 because of rounding.

Source: A commissioned study conducted by Forrester Consulting on behalf of AWS, July 2018

- › **Application architecture, security/privacy, and performance issues were the top challenges businesses had when they initially expanded their use of public cloud.** With each successive deployment, however, these challenges were easier to overcome. Cloud encourages and simplifies experimentation. As a result, companies iterate faster toward the best solution, since the incremental cost of each experiment is small. Sixty-one percent of respondents agree that with each successive public cloud project, application architecture challenges became easier to overcome; 55% agree that performance issues were easier to manage with each successive deployment; and 51% agree that security/privacy concerns fell away as companies became more comfortable and skilled with cloud.
- › **Notably, 57% of respondents report that education was a key adoption barrier that was easier to overcome with successive deployments.** Whereas 45% of organizations were challenged by staff expertise during their first expansion into public cloud, nearly two-thirds agree that, with each successive deployment on public cloud, teams were better equipped.



“Maintenance is not something that we have to worry about, since moving to public cloud.”

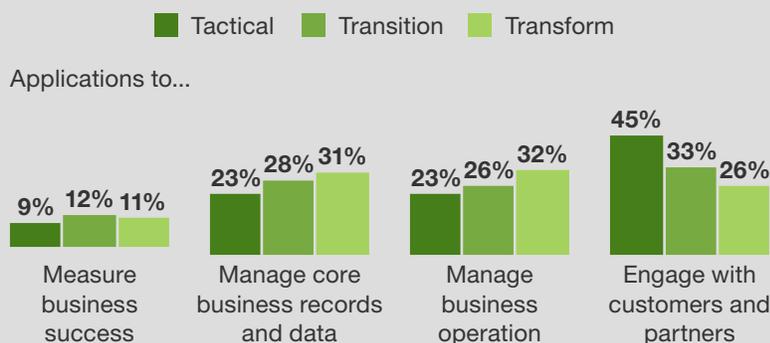
Director, Australian electronics company



While companies will always consider security, performance, and cost concerns when looking to add cloud to their IT portfolios, these barriers to adoption will fall away as companies expand their use of cloud for more workloads, more development activities, and more business processes. Familiarity breeds comfort, and public cloud is now mature and proven. The advantages of public cloud adoption at scale help assuage security concerns for many organizations. Today, the key challenges to expanding cloud adoption are optimization (learning to use the right mix of services for the right workload), skills (learning about how to use new services), training new staff, and identifying the best applications to transform using cloud. Cloud’s viability and benefits are proven; companies are now focused on execution.

Figure 3

“In which part of your business did you first use public cloud platforms?”



Base: 391 IT decision makers with responsibility for cloud strategy/investments at global organizations
 Note: Percentages may not total 100 because of rounding.
 Source: A commissioned study conducted by Forrester Consulting on behalf of AWS, July 2018

Transform respondents began their cloud journey more holistically — looking to transition complete business operations to the cloud — while tactical respondents started with quick-win projects such as mobile and web applications.

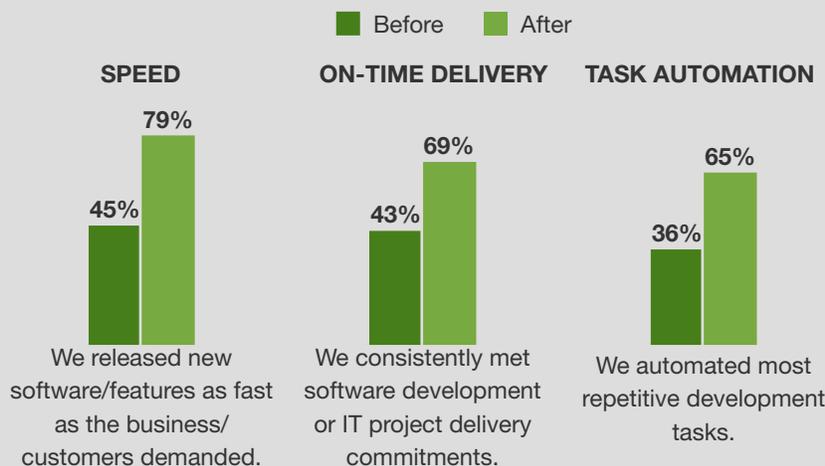
Cloud Has A Direct And Positive Impact On Both IT And Company Culture

Respondents report that public cloud has helped them move faster and try new things, collaborate better with their peers in the business, drive up cost efficiency, look deeply into the data they collect for new insights, and improve relationships with their security and compliance peers. This shows that while cloud's impact on agility and cost reduction is well-known and established, organizations are realizing — and capitalizing on — new impacts on culture, collaboration, and communication.

- › **Process cultural improvements: speed, on-time delivery, and task automation.** Moving to public cloud has allowed organizations to move faster, meet deadlines more consistently, and automate mundane or error-prone tasks (see Figure 4). Employees report that their day-to-day jobs are easier, while they are also able to meet their commitments and satisfy customers — improving overall job satisfaction.
- › **IT improvements: better security, transparent costs, and higher uptime due to faster recovery times.** Businesses report that cloud has allowed their IT to reach their global customer bases quickly and easily, use the data center infrastructures they still have more efficiently, and ramp up their overall availability — creating more agile, efficient, and nimble organizations.

Figure 4

“On a scale of 1 (does not describe us at all) to 5 (describes us completely), rate your level of agreement with the following statements:”
 (Showing those who selected 4 or 5)”



Base: 412 IT decision makers with responsibility for cloud strategy/investments at global organizations
 Source: A commissioned study conducted by Forrester Consulting on behalf of AWS, July 2018



“Since moving to cloud, everyday tasks are easier to complete, and we get more customers.”

Manager, US business/professional services company



› **Employee culture improvements: transparency, accountability, and efficiency.** Respondents report that across their organizations, transparency, accountability, and efficiency all improved dramatically once their businesses embraced public cloud (see Figure 5). Cloud improves collaboration when project status is transparent, people are held accountable, and more teams deliver on time and on budget. From visibility grows trust.

Moving to public cloud dramatically shifts company culture, which in turn directly impacts business performance. Seventy-eight percent of organizations tell us it has been easier to meet rising customer expectations by using public cloud; remarkably, 77% say cloud has significantly improved the reach and impact of their companies' brand.

"[My work] has become less complicated and less stressful, and attention is more focused on starting new projects instead of being stuck on old ones since moving to public cloud."

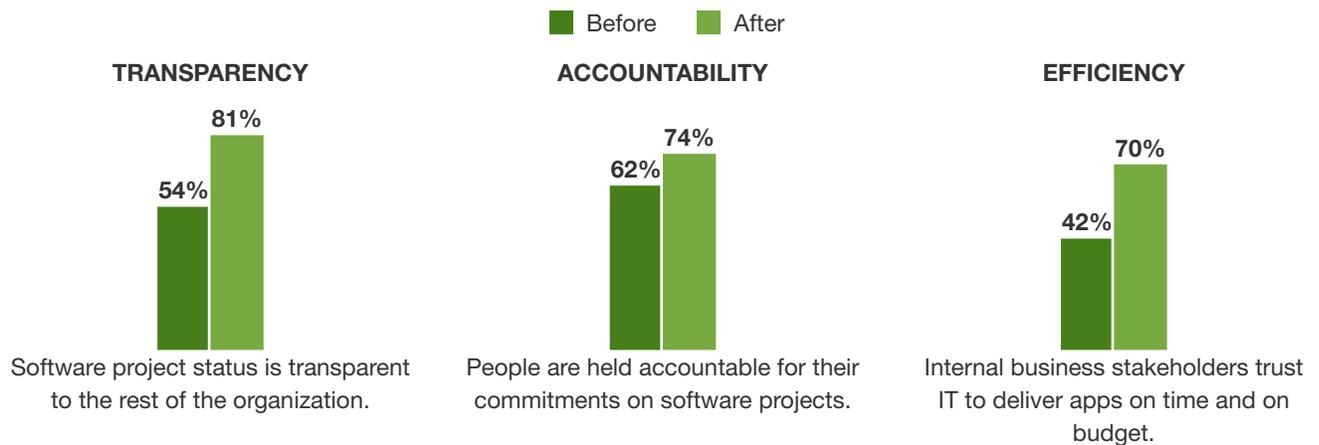
Director, French media company



Figure 5

"On a scale of 1 ("Does not describe us at all") to 5 ("Describes us completely"), rate your level of agreement with the following statements."

(Showing those who selected 4 or 5)



Base: 412 IT decision makers with responsibility for cloud strategy/investments at global organizations

Source: A commissioned study conducted by Forrester Consulting on behalf of AWS, July 2018

Further, 77% of businesses say that their ability to innovate increased once they adopted public cloud — they saw new opportunities to rethink how they approach both business process and applications. In many cases, the most innovative new technologies and services, from software containers and functions to machine learning and internet-of-things services, are being pioneered, tested, and made available first in public clouds. And experimenting with these new services is easier and faster, freeing companies to try new things more often than they might have done previously, when experimentation came with a hefty price tag.

Most importantly, public cloud adoption has helped break down the silos within organizations and enabled companies to create innovative products and services. The second highest benefit realized by organizations was improved IT-business collaboration and communication, followed closely by stronger IT relationships with security, risk, and compliance teams. By empowering all parts of the business, cloud has broken down decades of IT/business divisions and allowed every part of the business to be a technology decision maker. As businesses embrace public cloud even more holistically, they must think broadly to the teams and roles that will be impacted as adoption moves from small projects to full-scale migration.

Key Recommendations

Public cloud is now in its second decade of significantly impacting how companies around the globe source and manage technology, create new applications, modernize core business processes, and — as our survey reveals — transform their entire businesses to compete in the digital age.

Forrester's in-depth survey yielded several important recommendations:



It's public cloud “go time”; don't wait for someone else to transform your market with public cloud.

The most innovative companies we surveyed view public cloud as a set of services, tools, and, most importantly, methodologies to infuse their businesses with speed, agility, and a culture of experimentation. Public cloud is as important a component of your digital business strategy today as powerful compute and storage platforms were in decades past. Use public cloud to leapfrog your competition, redesign cumbersome business processes, and create the most compelling customer experiences.



Be a transformer: Public cloud helps the most innovative companies modernize more than their data centers.

Public clouds are no longer only cheaper, faster, and more elastic technology platforms. They are the engines of digital transformation in companies that apply the principles of cloud computing broadly to their people, processes, *and* technology. These transformers achieve greater benefits — including improved reputation as an innovate company and higher business agility — than those that view cloud as simply a technology transition state or a tactical solution for a few web or mobile apps.



From security to scalability to performance, public cloud improves every aspect of your most important business applications.

While barriers to cloud adoption remain, as they do during every technology transition, we found that companies that expand public cloud use for more varied and broader use cases see these barriers reduced over time. In short, public cloud becomes more secure, performant, available, and reliable the more you invest time and energy into it.



Adopt cloud to infuse your IT operations with speed, on-time delivery, and automation.

Cloud's most proven benefits are now infusing companies that use it with new levels of speed, agility, and flexibility. Cloud encourages automation, not just for traditional IT processes, but for app development and testing, machine learning and data analytics, and more. The inherent on-demand, highly-automated nature of cloud platforms supports companies' own attempts at automating and accelerating a wide range of apps and business processes.



Use cloud broadly to become a more transparent, accountable, and efficient business.

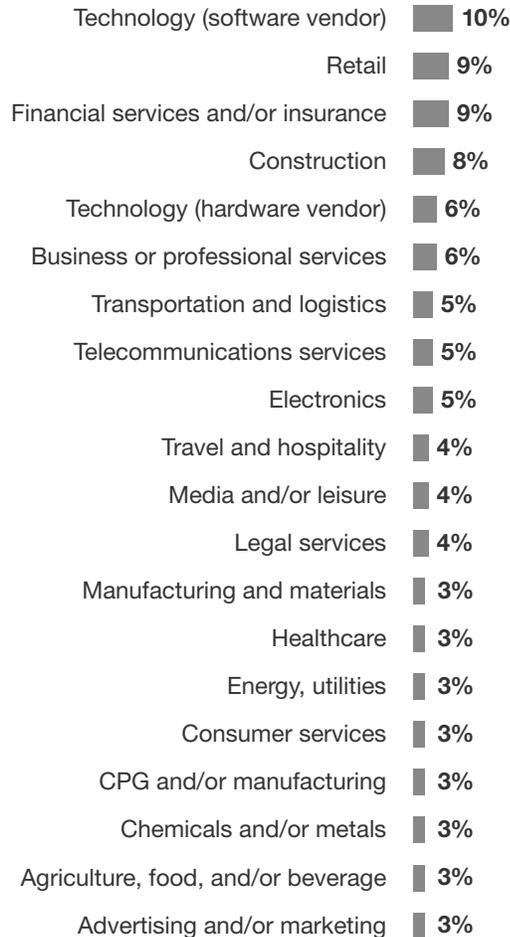
Beyond technology operations, public cloud's open, transparent, and pay-per-use model is also helping companies become more open themselves — and improving collaboration among teams, clarity in communications, and efficiency in all they do. Public cloud is where companies try new things with little friction; leverage these features to transform your own cumbersome, opaque processes and help your company fail fast and fail often — the key to innovation.

Appendix A: Methodology

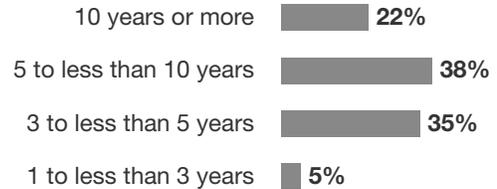
In this study, Forrester surveyed 412 IT decision makers in North America, Europe, and APAC to explore public cloud's effect on company culture. Survey participants included decision makers in IT and business operations. Respondents were offered a small incentive as a thank you for time spent on the survey. The study was completed in July 2018.

Appendix B: Demographics/Data

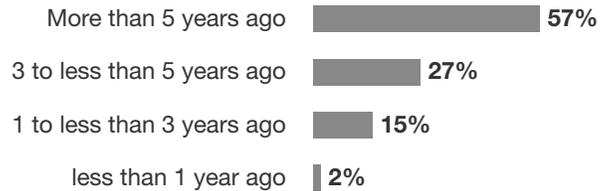
INDUSTRY



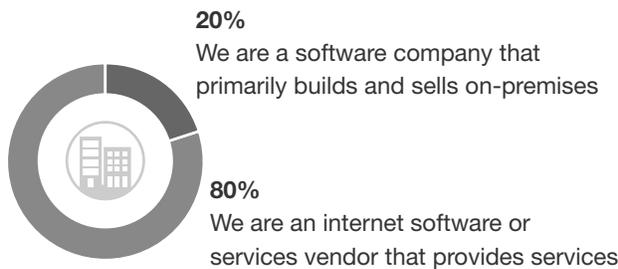
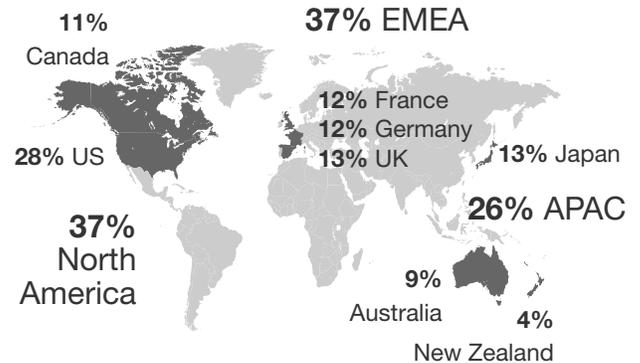
“How long have you been employed at your current organization?”



“When did you start using public cloud?”

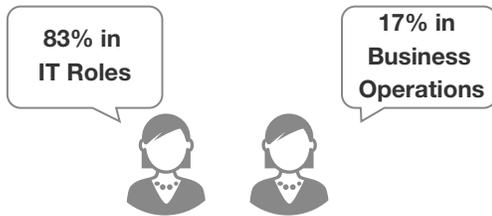


GEOGRAPHY

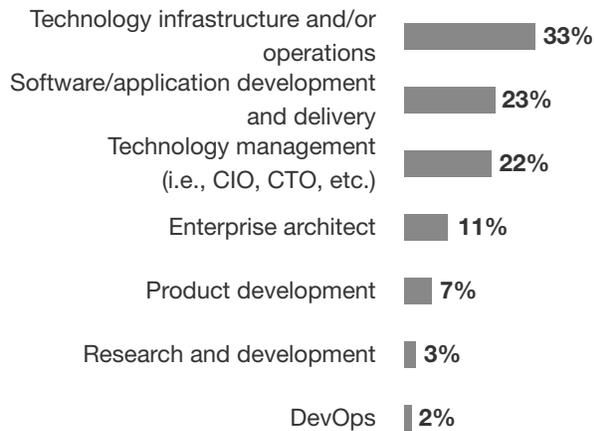


Base: 412 IT decision makers with responsibility for cloud strategy/investments at global organizations
 Note: Percentages may not total 100 because of rounding.
 Source: A commissioned study conducted by Forrester Consulting on behalf of AWS, July 2018

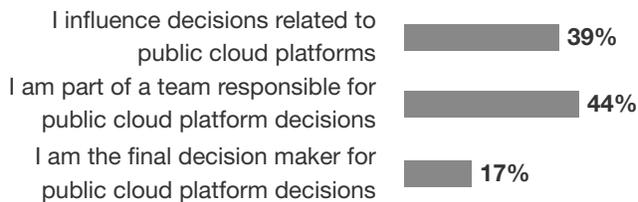
RESPONDENT ROLE



ROLE WITHIN IT



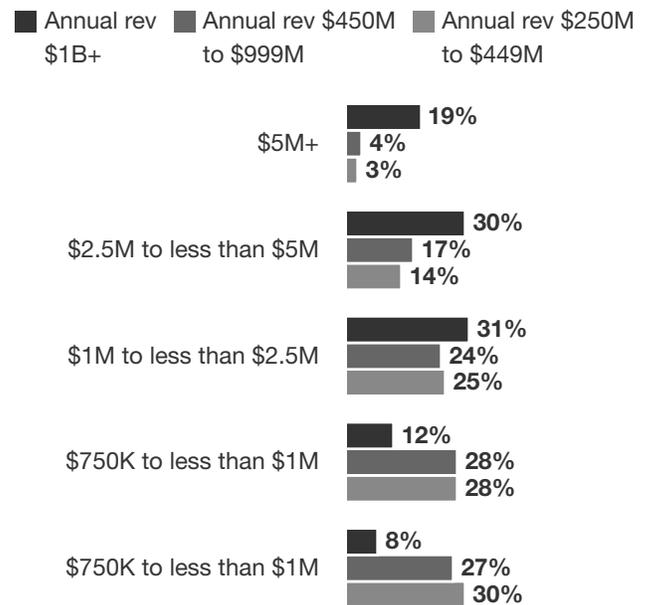
RESPONSIBILITY LEVEL



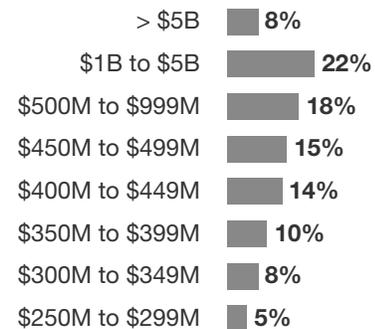
RESPONDENT LEVEL



ANNUAL SPEND ON PUBLIC CLOUD PLATFORMS BY ANNUAL REVENUE



ANNUAL REVENUE (USD)



Base: 412 IT decision makers with responsibility for cloud strategy/investments at global organizations
 Note: Percentages may not total 100 because of rounding.
 Source: A commissioned study conducted by Forrester Consulting on behalf of AWS, July 2018

Appendix C

ENDNOTES

¹ Sources: “Data Brief: Public Cloud — The Momentum Continues,” Forrester Research, Inc., November 15, 2017, and “The Public Cloud Can Be Your Enabler Of Business Innovation,” Forrester Research, Inc., January 19, 2018.