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What Financial Services Organizations Auditing Their Public Cloud Infrastructure Spending Have Uncovered:

Industry Spotlight

AUGUST 2022

DELLTechnologies

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RESEARCH OBJECTIVES AND METHODOLOGY

OBJECTIVES

Financial services companies tend to be very progressive in terms of technology adoption, driven by a need for efficiency, speed of service, and differentiated customer experiences. From real-time trading applications, the need to deliver modern mobile applications, and a desire to make customer lifetime value models increasingly more predictive and accurate, traditional financial services companies (banking, securities, insurance), and the adjacent fintech industry, are among the industries with the most well-funded IT departments.

However, greater investment carries with it the pressure to deliver a bigger return. Technology strategists, and their partners in the accounting department, are responsible for ensuring technology investments deliver the returns expected, deliver the performance and reliability demanded by mission-critical applications (at an appropriate cost), and don't run afoul of a complex regulatory environment. In this regard, use of the public cloud is of particular interest.

This eBook discusses new research conducted by ESG specific to the financial services industry. The research aimed to uncover trends in three areas:

Understanding financial services organizations' use of public cloud infrastructure and its impact on IT complexity.

Measuring if and to what degree public cloud infrastructure spending is outpacing expectations in the financial services sector.

Assessing the forward-looking IT landscape trends among financial services organizations as they balance IT costs and requirements.

The goal of this eBook is to give IT and business strategists in the financial services industry insights into their peers' public cloud infrastructure experiences and show how they are adapting IT strategies to best serve the needs of their businesses.

RESEARCH METHODOLOGY

The data in this eBook is derived from a double-blind survey¹ of 200 technology decision makers (CIO/CTO/VP/directors of IT) and senior members of finance teams (CFO/VPs/directors of finance) at enterprise-class financial services companies. The survey was conducted in the first half of 2022, and was complemented by three hour-long interviews with cloud strategists at financial services companies. All respondents (both survey respondents and interviewees) were required to be knowledgeable about their organization's cloud infrastructure spending to qualify to participate.

Survey respondents were located across the US (40%), Canada (9%), the UK (17%), Germany (17%), and France (18%).

HIGHLIGHTED FINDINGS

Hybrid and multi-cloud approaches dominate in the financial services industry:



The penetration rate of using public cloud IaaS in the financial services industry increased from 18% in 2011 to a high point of 85% in 2021, but this increase correlated with a rise in IT environment complexity.



On average, financial services companies using public cloud infrastructure leverage

3.1 DIFFERENT

infrastructure cloud service providers (CSPs) today and expect to grow that number to 4.5 in the next two years.

Financial services organizations underestimate the cost implications of their public cloud usage:



80% of respondents have found that their actual public cloud infrastructure spending was higher than expected.



89% of respondents reported that their cloud cost audit uncovered workloads placed in the cloud that definitively should not have been migrated or launched on public cloud infrastructure.

On average, financial services companies are spending 22% more per year on public cloud infrastructure than they thought they were prior to their public cloud cost audit.

Respondents most often reported that cloud application/service costs, networking costs, storage costs, and costs on professional services tied to app development and migrations drove their overages.

Cloud cost audits drive organizational action:



82% invest in management tools that span on-premises and cloud environments to improve manageability, driving 2.2 full time employees-worth of improved efficiency.



76% have invested in new cloud cost estimator tools to help forecast and optimize spending.



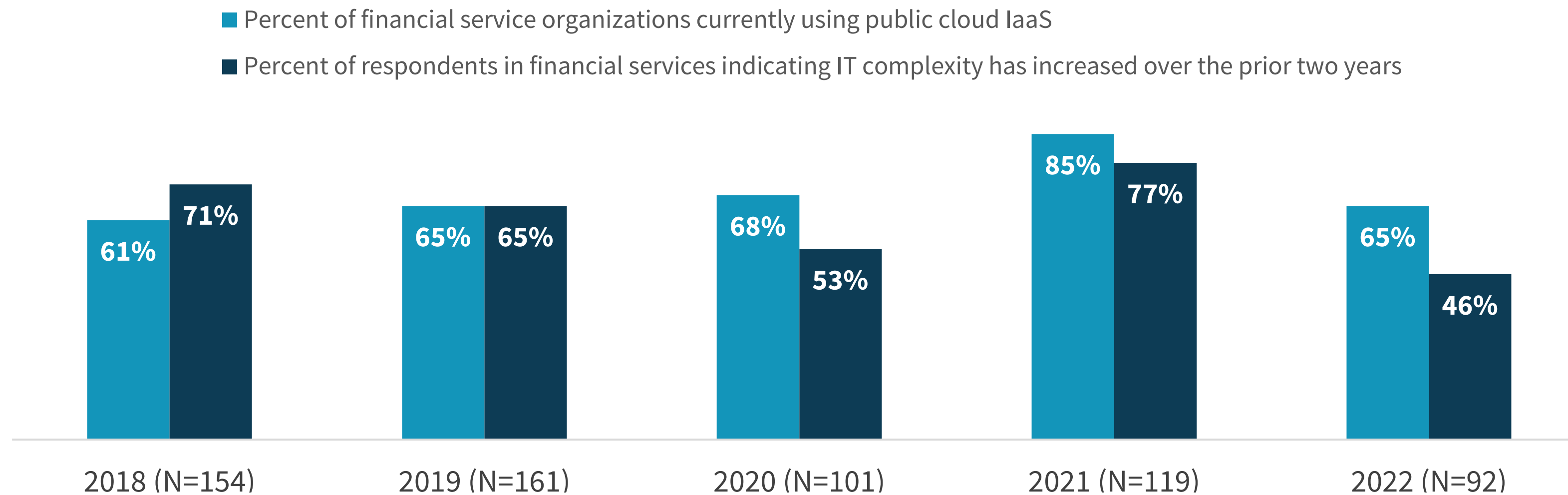
75% report their findings helped spur broad data center modernization projects, which have helped drive a median of 20 workload repatriations to drive savings.



Public Cloud Infrastructure Usage and Trends in the Financial Services Sector

Usage of public cloud IaaS among financial services organizations is correlated to complexity

Public cloud usage and IT complexity trends.



“ I think [public cloud usage] really depends on the company. A company that is willing to invest a lot in application rearchitecture, and that is focused on managing technical debt, will be skewed toward the public cloud. Organizations without the resources to measure and manage technical debt at a high level, they’ll gravitate to on-premises infrastructure. Everything is going to be hybrid from this point forward. It’s just a question of where you fall on the spectrum.”

- Director of Public Cloud Infrastructure & Architecture, Insurance company with more than 2,500 employees

According to past ESG research, in 2011, just 18% of financial services organizations surveyed were leveraging public cloud IaaS. By 2018, that percentage had risen to 61% and continued to rise through 2021. Over that same span of time, ESG also began asking respondents if their overall IT complexity had been increasing, decreasing, or remaining unchanged. The rate at which respondents indicated complexity was trending in the wrong direction peaked in 2021 at 77%, the same year public cloud IaaS penetration peaked.

Interestingly, in 2022, ESG observed a pullback in the penetration rate of public cloud IaaS in the financial services industry, from 85% to 65%. In that same period, the percentage of respondents indicating that IT complexity was trending up declined from 77% to 46%. While correlation does not equate to causation, there does appear to be a connection between public cloud IaaS usage and the burden of IT complexity.¹

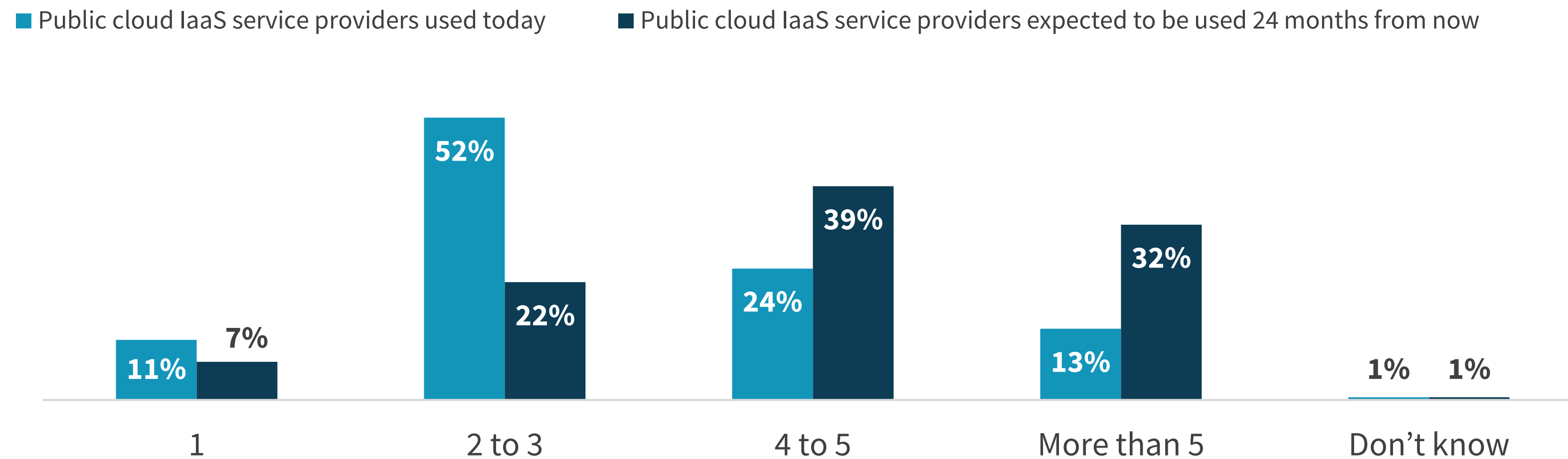
More broad yet complementary ESG research shows organizations are adopting a “hybrid forever” mindset in the aggregate. Three years from now, organizations still anticipate splitting their business-critical applications evenly across on-premises and off-premises environments.²

So, while public cloud IaaS reliance may ebb and flow in the financial services space, ESG expects IT strategists should plan for hybrid cloud complexities to persist.

¹Source: ESG Research, TSI 2011-2022, ²Source: ESG custom research survey commissioned by Dell and DXC, “Market Trends Survey: Hybrid and Multicloud IT,” March 2022.

While hybrid approaches dominate, public cloud IaaS usage is in flux

| The number of public cloud IaaS providers in use: today versus expectations 24 months from now.



“When ESG asked respondents how many different public cloud IaaS providers they use today, **89% reported more than one.**”

The majority of financial services companies leverage public cloud IaaS today. And while reliance on public cloud infrastructure may not be expected to significantly shift over time, those leveraging the public cloud expect to increase the number of IaaS cloud service providers (CSPs) partnered with in the future.

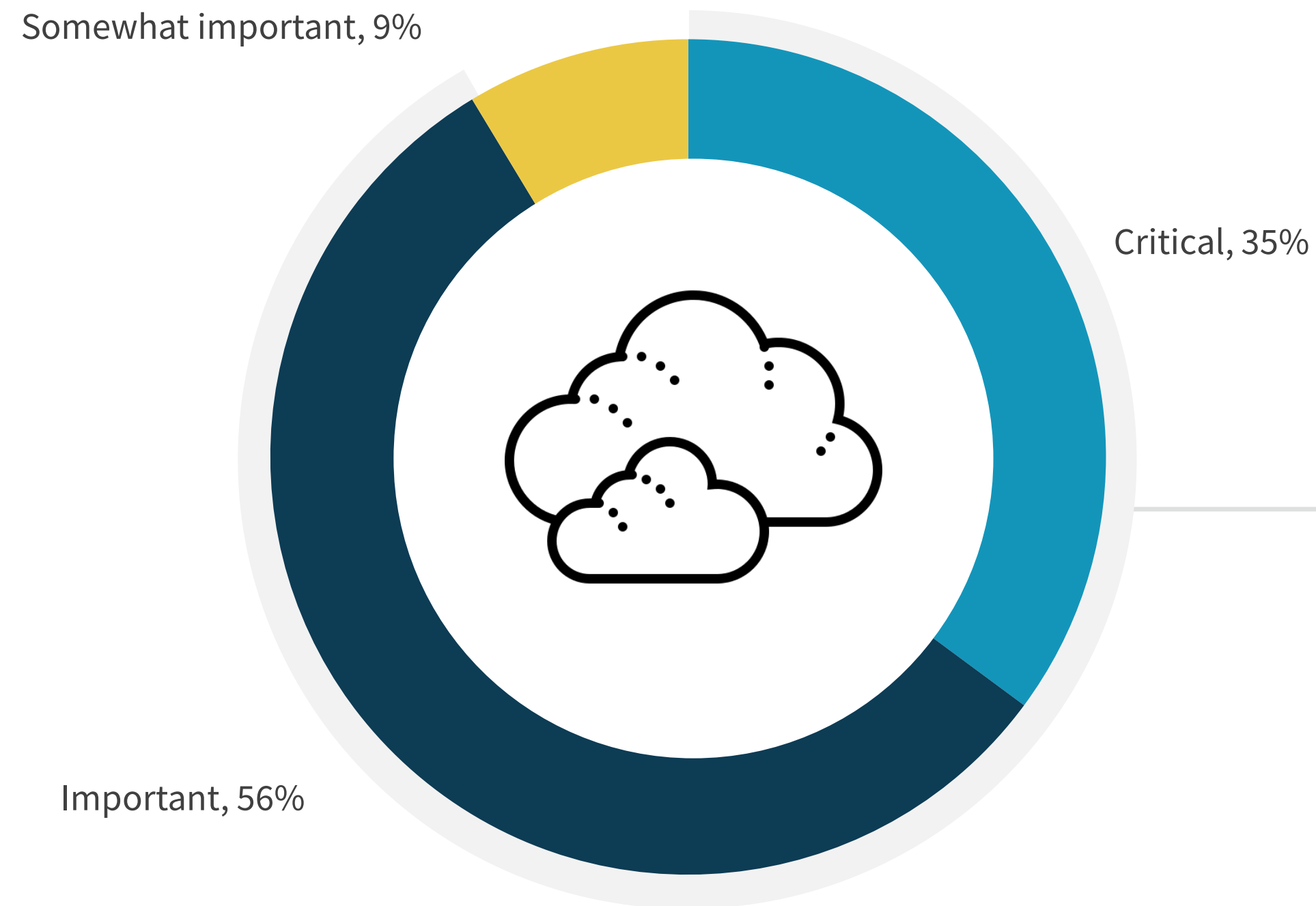
When ESG asked respondents how many different public cloud IaaS providers they use today, 89% reported more than one. This shows that financial services companies are following a multi-cloud IT strategy today.

And public cloud IaaS diversification is poised to increase significantly over the next 24 months: While 37% reported using four or more IaaS CSPs today, 71% expect to do so 24 months from now.

Said another way, on average, financial services companies leveraging public cloud IaaS use 3.3 different IaaS CSPs today but expect that to increase to 4.5 IaaS CSPs over the next two years.

Solving for effective multi-cloud management is mission-critical in its importance

| The importance of continuously improving IT's ability to manage multi-cloud environments to meet long-term business and technology goals.



“91% of respondents in the financial services sector **said this improvement was important or critical.**”

Solving the complexity problems introduced by multi-cloud IT operations is essential. ESG asked respondents how important it is to their businesses' long-term goals that they continuously improve their ability to manage a multi-cloud environment. In total, 91% of respondents in the financial services sector said this improvement was important or critical.

And it is significant to note that this importance extends beyond IT goals like infrastructure flexibility, scaling agility, or a reduction in capital expenditures. The importance respondents ascribe to effective multi-cloud management includes both long-term business goals like time to market and revenue or profitability considerations (in addition to IT-centric goals).



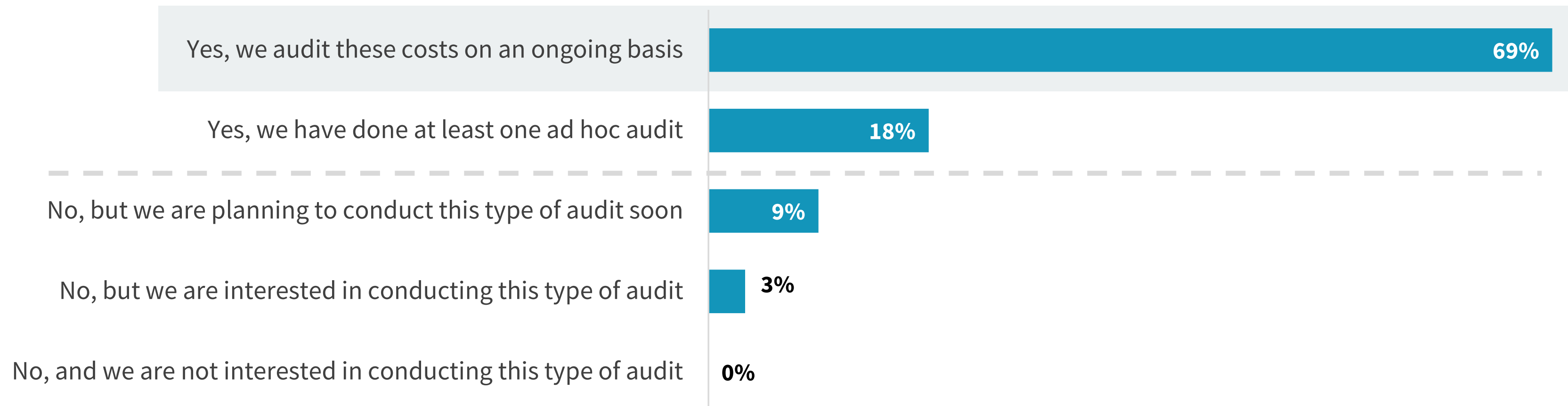
Public Cloud Infrastructure Spending Audits:

What Surveyed Financial Services Companies Have Uncovered

Financial services organizations are closely monitoring public cloud infrastructure spending

“ More than two-thirds of organizations (69%) report auditing these costs on an ongoing basis. ”

Has your organization conducted a thorough audit of public cloud infrastructure spending (e.g., egress costs, storage costs, compute costs, adjacent monitoring and management services, API costs, etc.) in the last 24 months?



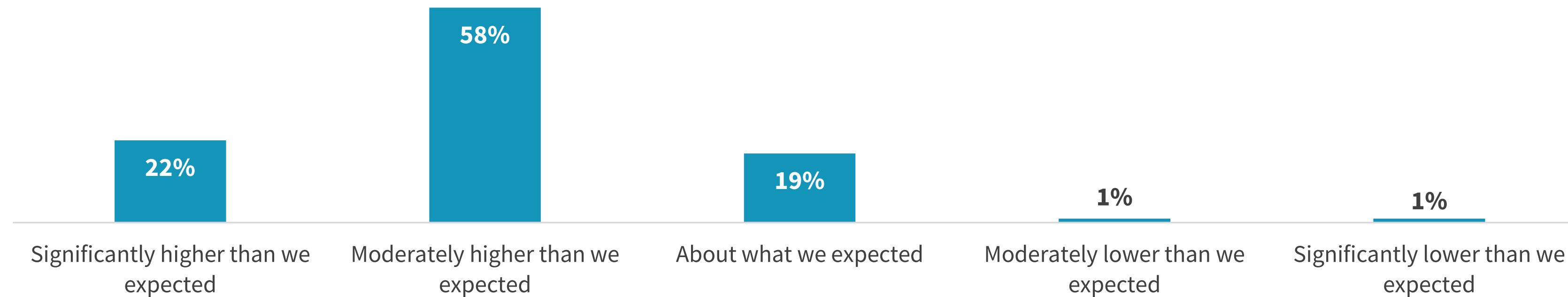
Before delving into what public cloud infrastructure audits reveal, it is instructive to note that nearly all financial services companies we surveyed are paying close attention to their public cloud infrastructure costs: 87% respondents surveyed reported their organization had conducted at least one thorough audit of all costs across the business in the last 24 months. In fact, more than two-thirds of organizations (69% report auditing these costs on an ongoing basis. Organizations without a clear picture of these costs trail their peers.

As for why organizations are paying such close attention to these costs, the reasons were multifaceted: 70% reported the discovery of one or more redundant investments prompting further inspection, 60% of respondents reported a surprise overrun or inaccurate forecasting led to more due diligence, and 56% reported they knew spending was high but needed to develop a more formalized understanding.

87% of respondents surveyed reported their organization had conducted a thorough audit of all costs across the business in the last 24 months.

Financial services companies find actual cloud spending exceeds their estimates

After your organization conducted its audit, did you find actual public cloud infrastructure spending was higher or lower than expected?



“In 2019, we uncovered surprise costs using a cloud optimization tool. We caught wind of an anomalous cost discrepancy. Which highlights that checkpoints are needed to make sure there are no expense surprises at end of month. **It was very painful to find this discrepancy, but once we did, we were able to take action and cut it by 30%.**”

- Cloud Strategy and Product Platform Development, Financial services and technology company with approximately 5,900 employees

On average, financial services organizations report actual public cloud spending was

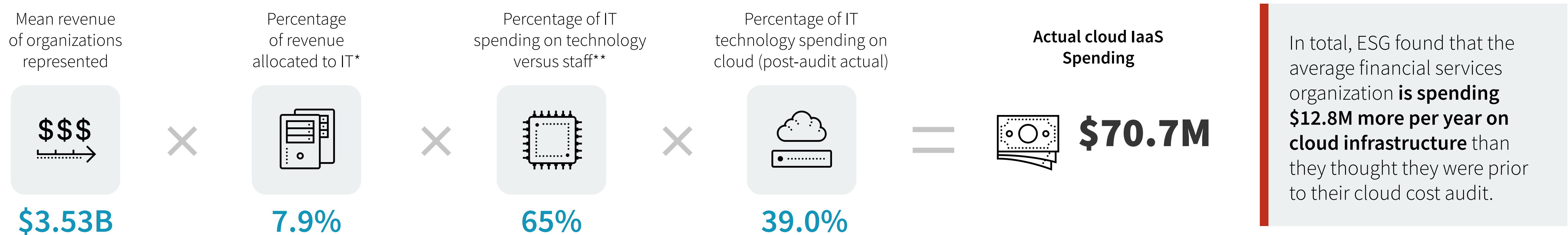
22% HIGHER
than expected prior to the audit.

Among financial services companies that have audited their public cloud infrastructure spending, most have found they were underestimating their costs: 80% of respondents said that actual spending was higher than they expected compared to 19% of organizations that estimated costs accurately, and just 2% that found they were actually overestimating their cloud spending.

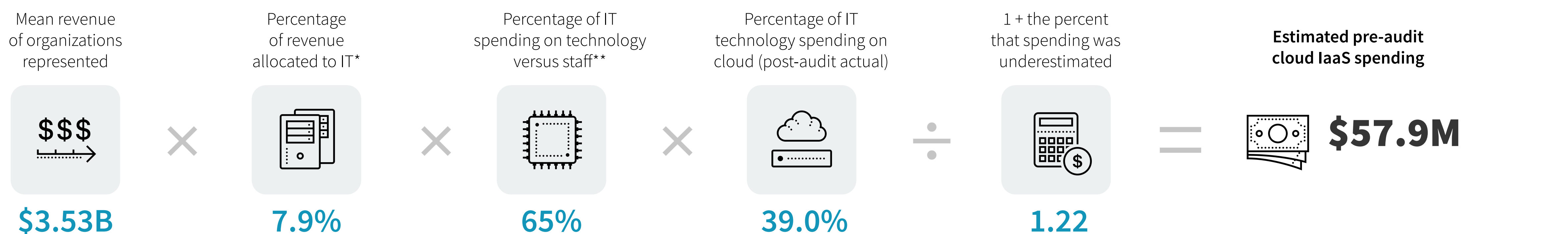
In precise terms, on average, financial services organizations found that actual public cloud spending was 22% higher than expected prior to the audit.

What does a 22% undercounting of cost look like? Financial services companies surveyed spending ~\$12.8M more than they thought.

To model the magnitude of public cloud spending overruns among financial services organizations, ESG looked at the average revenue of organizations participating, the typical allocation of revenue to IT spending, the percentage of IT budget that typically is allocated to IT technology (versus staff costs), and the actual proportion of IT budgets determined to be allocated to cloud infrastructure post audit.

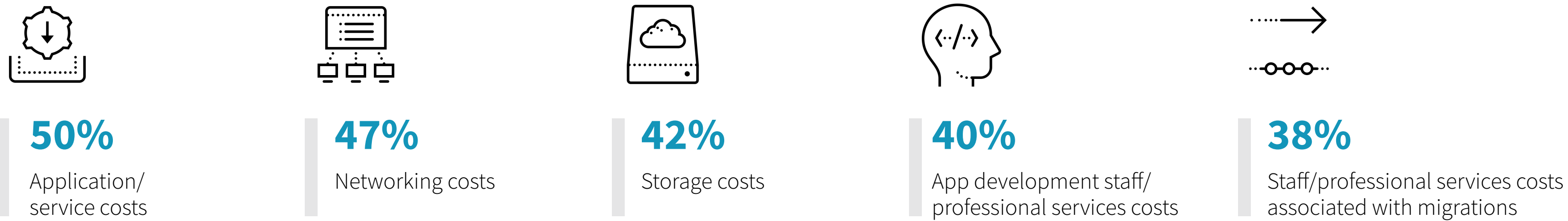


In total, ESG found that the average financial services organization **is spending \$12.8M more per year on cloud infrastructure** than they thought they were prior to their cloud cost audit.

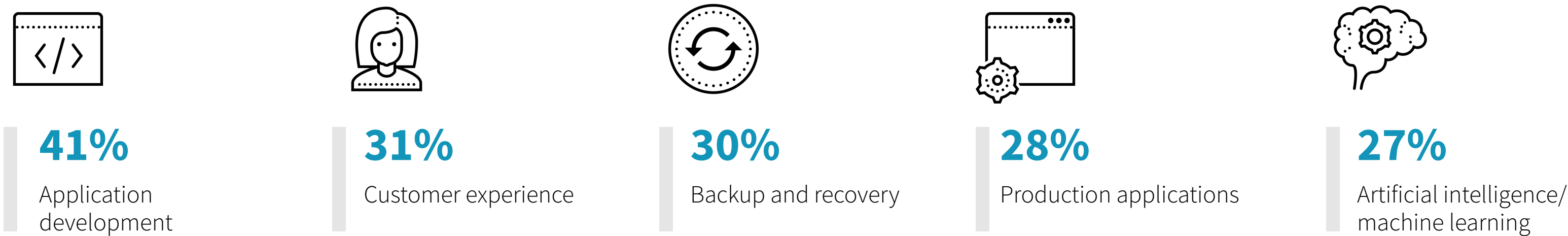


What drives cloud cost overages?

Categories of costs that contributed to actual public cloud costs being higher than expectations among manufacturing companies.



Workloads that contributed to actual public cloud costs being higher than expectations among manufacturing companies.



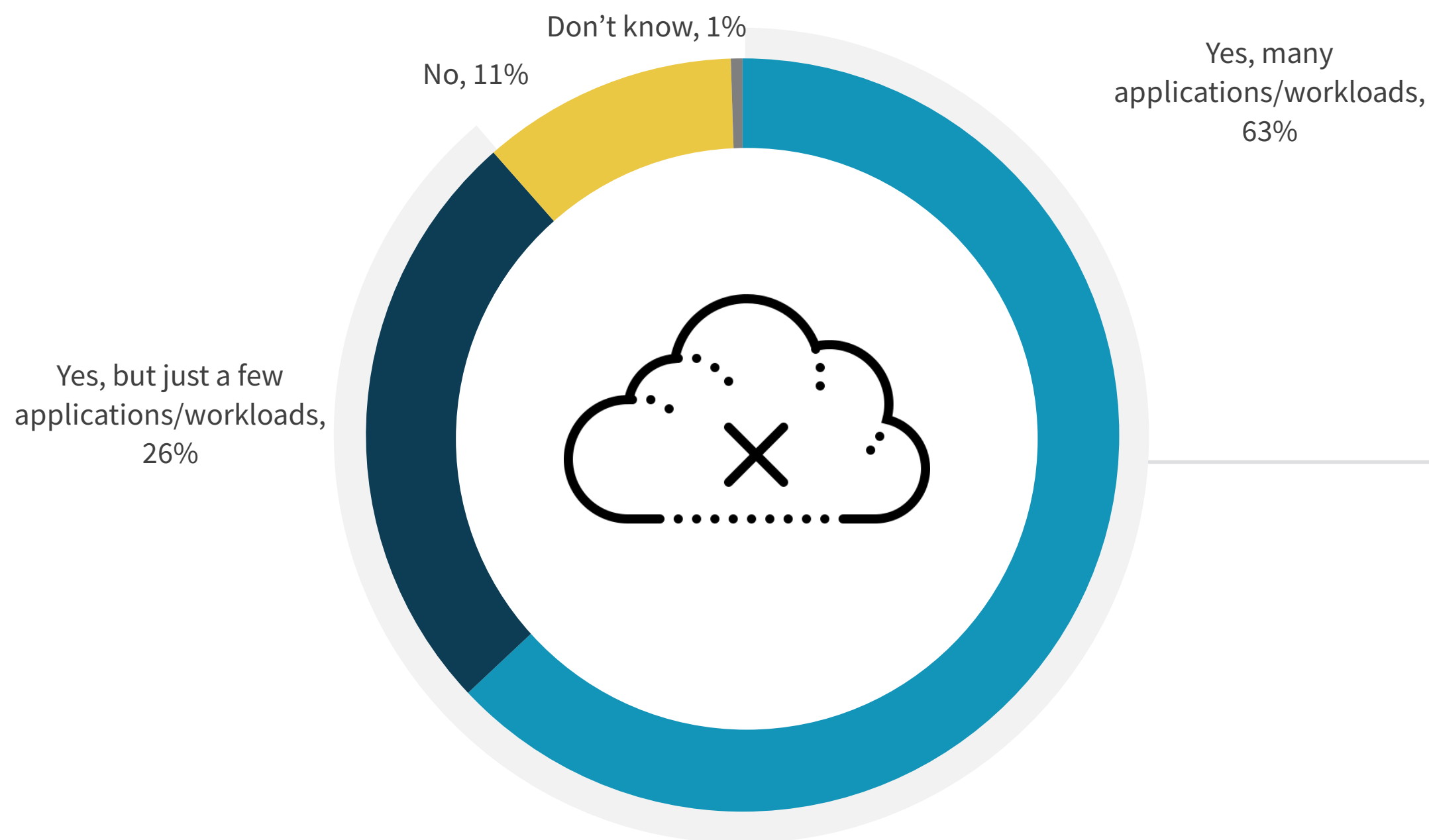
After conducting their public cloud cost audit and comparing actual spending to expectations, organizations achieve clarity into where and why their expectations deviated from reality. ESG research delved into two aspects of this deviation:

1. The cloud services that most drove overages. Respondents in the financial services industry often reported that cloud application/service costs, networking costs, storage costs, and costs on professional services tied to app development and migrations drove their overages.

2. The workloads most responsible for cloud cost overruns. In this area, respondents often reported that workloads like application development and home-grown solutions, customer experience, data backup and recovery, production applications like ERP and HR applications, and AI/ML workloads were behind cost overruns.

Many organizations discover workloads in the cloud that shouldn't be run there

Did your organization's cloud cost audit uncover any workloads running in the cloud that definitively should not be run on public cloud infrastructure?



“89% of respondents reported that their cloud cost audit uncovered **workloads placed in the cloud that definitively should not have been** migrated or launched on cloud infrastructure.”

ESG has often anecdotally heard of scenarios where organizations adopting a “cloud-first” strategy for application hosting may find that those strategies lead to misalignment between workload requirements and cloud infrastructure capabilities.

In this study, we explore if this trend is common in the financial services sector, and 89% of respondents reported that their cloud cost audit uncovered workloads placed in the cloud that definitively should not have been migrated or launched on cloud infrastructure.

Why? Most often, respondents reported issues with performance (e.g., latency) (44%), costs that were too difficult to forecast or varied too wildly (42%), and difficulty implementing security measures (i.e., lack of visibility to devices and workloads) (40%).

While security is a cross-industry concern, the first two items make sense in the context of financial services operations.

For example, using public cloud infrastructure for a workload dependent on real-time market data to inform or execute securities trades may not be a great fit for cloud if a meaningful time delay exists. Similarly, as many financial services organizations' revenues are reliant on borrowers' fixed interest rates, large spikes in variable costs can be difficult to absorb without significant customer growth.

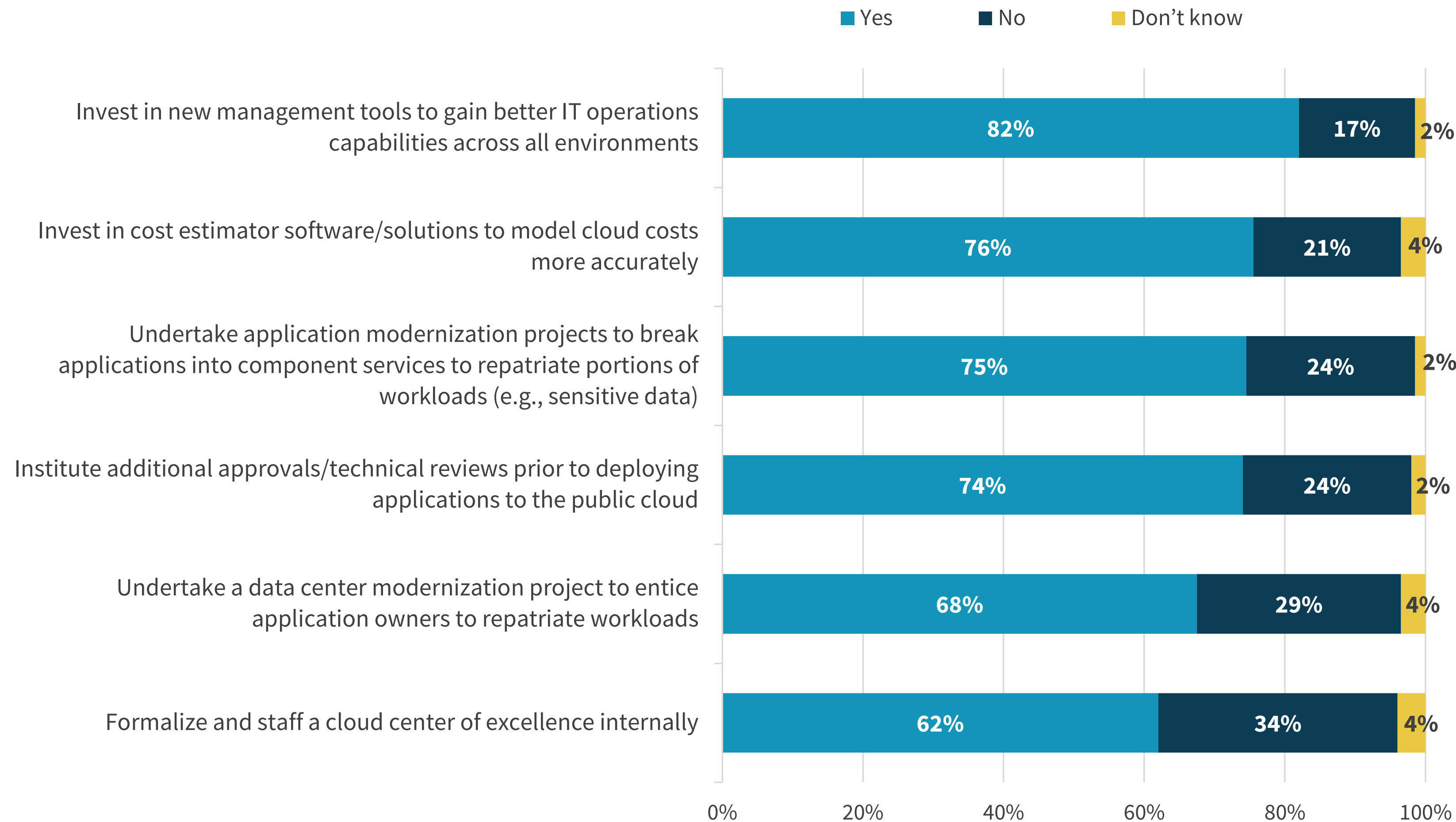
Public Cloud Audit Actions:

What Organizations
Do After They Audit Cloud
Infrastructure Costs



Cloud cost audits are spurring action

Did your organization take any of the following actions as a result of learnings from its cloud cost audit?



ESG research went beyond what financial services companies auditing their cloud spending have found to explore what they plan to do next.

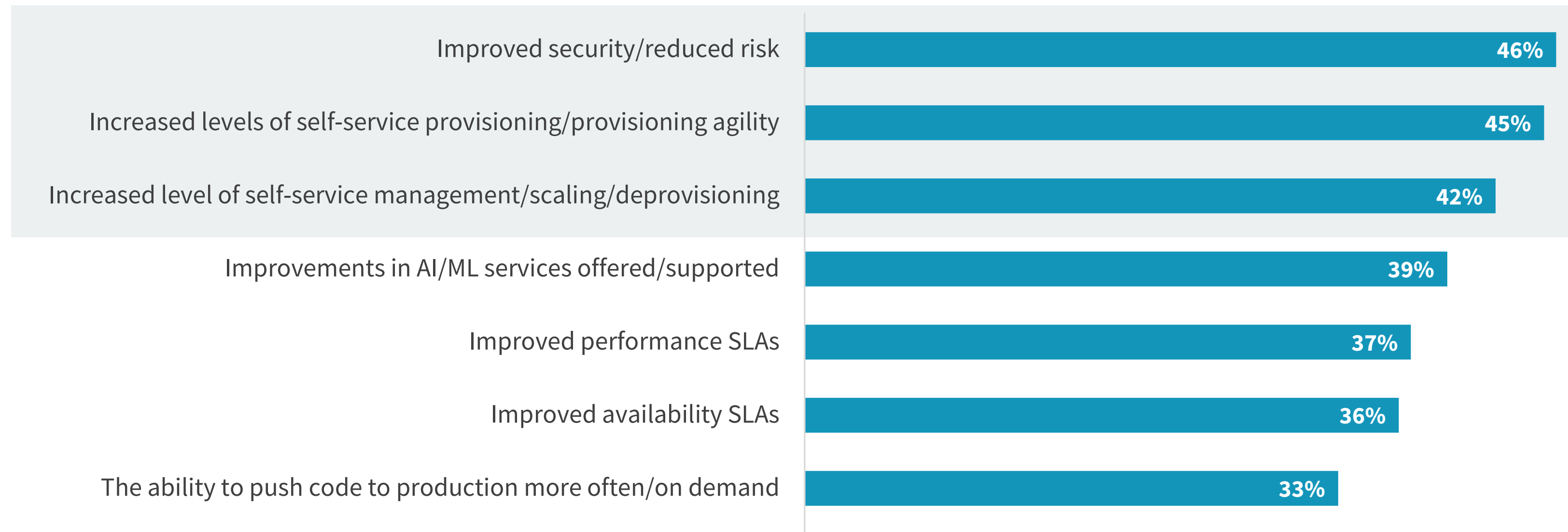
The research shows that organizations aggressively act on their findings, and many invest in technology to help resolve the issue:

Many (82%) invest in management tools that span on-premises and cloud environments to improve administrator visibility and allow for better, more holistic infrastructure management. Similarly, 76% report new investments in cloud cost estimator software to improve cost forecasting, and 75% report their findings helped spur broad data center modernization projects to motivate application repatriation.

Additionally, many respondents reported their organizations had instituted new processes like adding new approvals or reviews prior to deploying apps to the cloud (74%) or undertaking application modernization projects to repatriate portions of workloads (68%).

The private cloud capabilities that drive workload repatriation

| What improvements tied to data center modernization have had the biggest impact driving workload repatriation?



“Agility and innovation outcomes tend to be much better with cloud, but increased security capabilities, like alignment with CIS benchmarks, is a requirement in terms of validating security.”

- Enterprise Architect, Financial services company with more than 1,200 employees

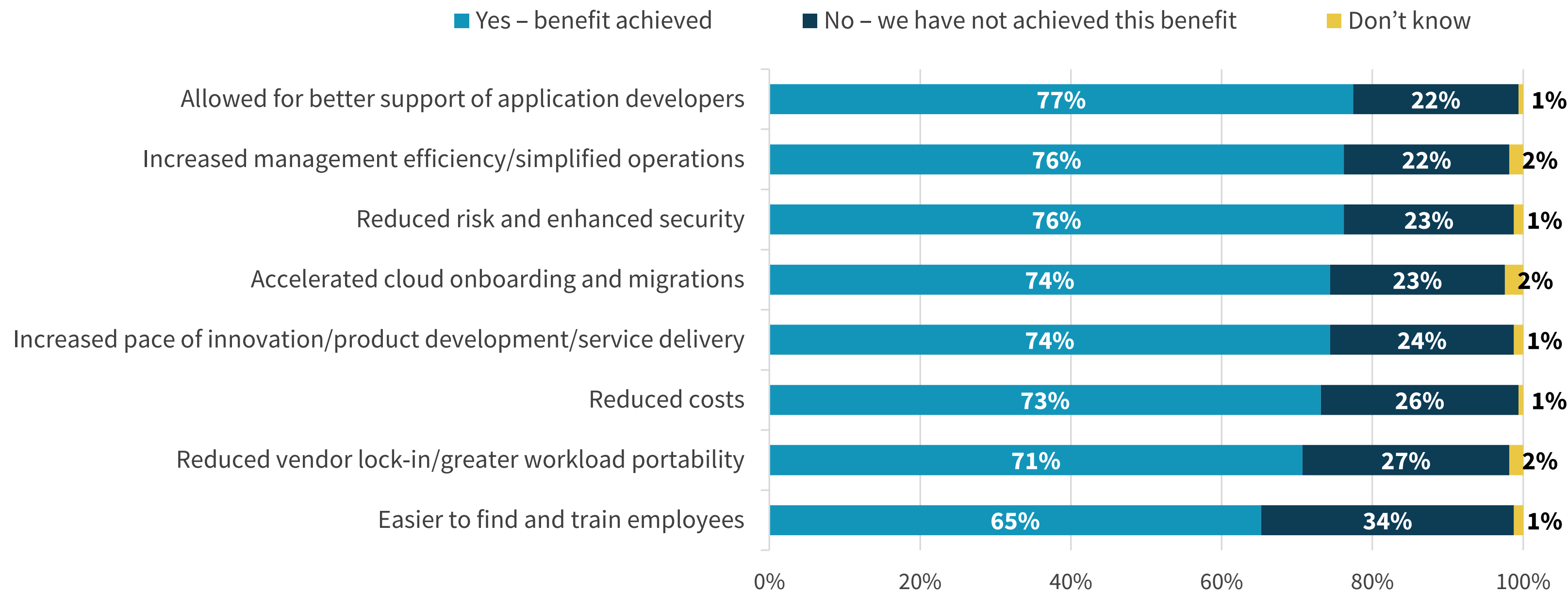
For organizations that had initiated a data center modernization project after their cloud audit, the research explored how successful those initiatives had been.

In the aggregate, respondents reported having repatriated a median of 20 formerly cloud-hosted workloads. However, the mean number of workloads repatriated was 70. This means that success was uneven; while some organizations had repatriated many workloads, others had repatriated only a few.

For financial services organizations, improving security and reducing risk most bolstered repatriation efforts. Additionally, increased self-service capabilities (both provisioning and ongoing management) were reported by many respondents to have had an impact. Finally, gaining access to new AI/ML services and support was also cited by a large proportion of respondents.

A consistent infrastructure management experience drives significant benefits

Benefits achieved due to the adoption of management tools that improved management experience across clouds.



For organizations that ramped investment in multi-cloud management tools after their cloud audit, the research explored the impact of those investments.

Superior support for application developers rose to the top of the list, reported by 77% of respondents, while 76% of respondents also reported an increase in management efficiency and operations.

Many downstream benefits also were enjoyed, such as reduced risk and enhanced security (76%), expedited cloud onboarding and migrations (74%), and increased pace of product delivery (74%).

And when respondents were asked to estimate the improved efficiency impact on the IT organization, they reported saving the equivalent of 2.2 full-time equivalents (FTEs) due to infrastructure management improvements.

“Using the most traditional infrastructure deployment methods, we used to take maybe three to six months to deploy the infrastructure on-premises: networking, racking and stacking, then the configuration, and finally providing access to the development team. **We’ve been able to make that lag time literally go away by going to cloud models.**”

- Cloud Strategy and Product Platform Development, Financial services and technology company with approximately 5,900 employees

The Bigger Truth

It's clear that financial services organizations, much like other industries, have adopted a hybrid and multi-cloud IT philosophy. However, this research shows that many organizations struggle with implementing this strategy in an economically efficient manner and without making workload placement missteps. As a result, ESG research shows that many organizations are working to rein in costs and transform their on-premises environment to both entice repatriations and simplify IT management burdens. Organizations grappling with or questioning if their current cloud usage is optimized would be well-served to carefully audit their public cloud infrastructure usage and follow the lead of their peers, if appropriate, by modernizing their private cloud capabilities and investing in solutions that can provide a more consistent management experience.

How Dell Technologies can help

Dell Technologies helps organizations simplify multicloud by design. Dell APEX bridges the divide between the agility of public cloud and the control of private cloud, offering a truly unified cloud experience that's more consistent across all environments.

APEX brings simplified cloud experiences – with quick provisioning, seamless scaling, and flexible consumption – wherever applications and data live. Customers can subscribe to Dell's innovative technologies, consume them as-a-Service, and deploy them wherever needed, including public cloud and on-premises environments.

The APEX portfolio consists of cloud services and custom solutions that satisfy a range of requirements from compute to data storage to data protection with cyber resiliency and more.

APEX makes it easier to get more value from Dell Technologies innovation. Customers can simplify operations, increase agility to capture new opportunities, and maintain control of data – to minimize risk and maximize performance – on their terms.

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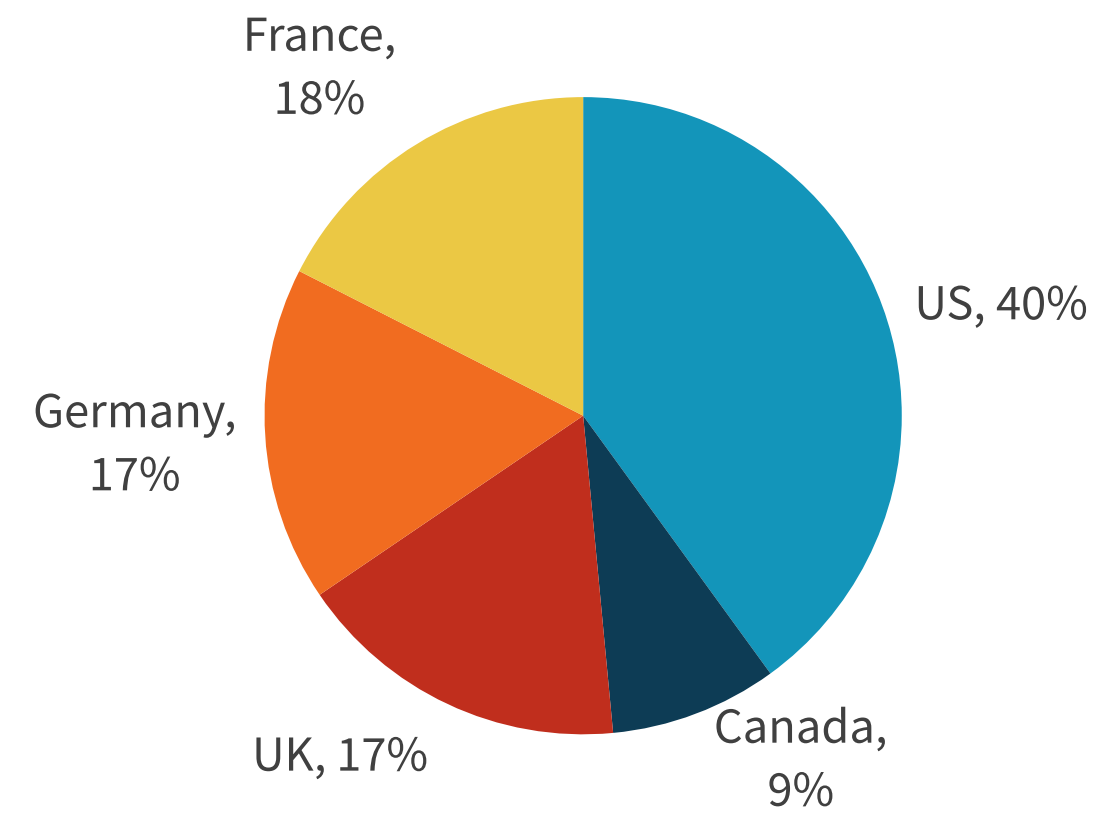
Research Methodology

The data in this report was derived from a survey fielded among IT and finance leaders in the financial services industry in March of 2022. These figures detail the demographics of respondents to the survey located in North America (N=97) and Western Europe (N=103).

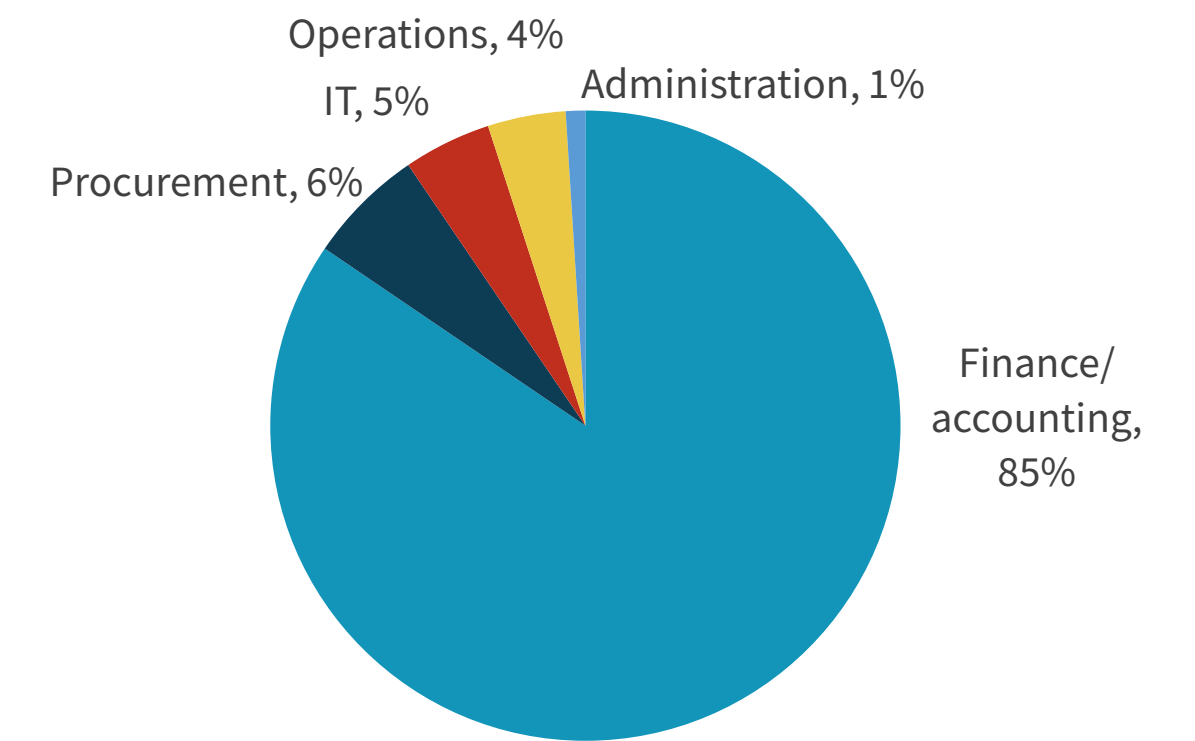
Totals in figures and tables throughout this report may not add up to 100% due to rounding.

The margin of error for a sample size of 200 at the 95% confidence level is + or - 7 percentage points.

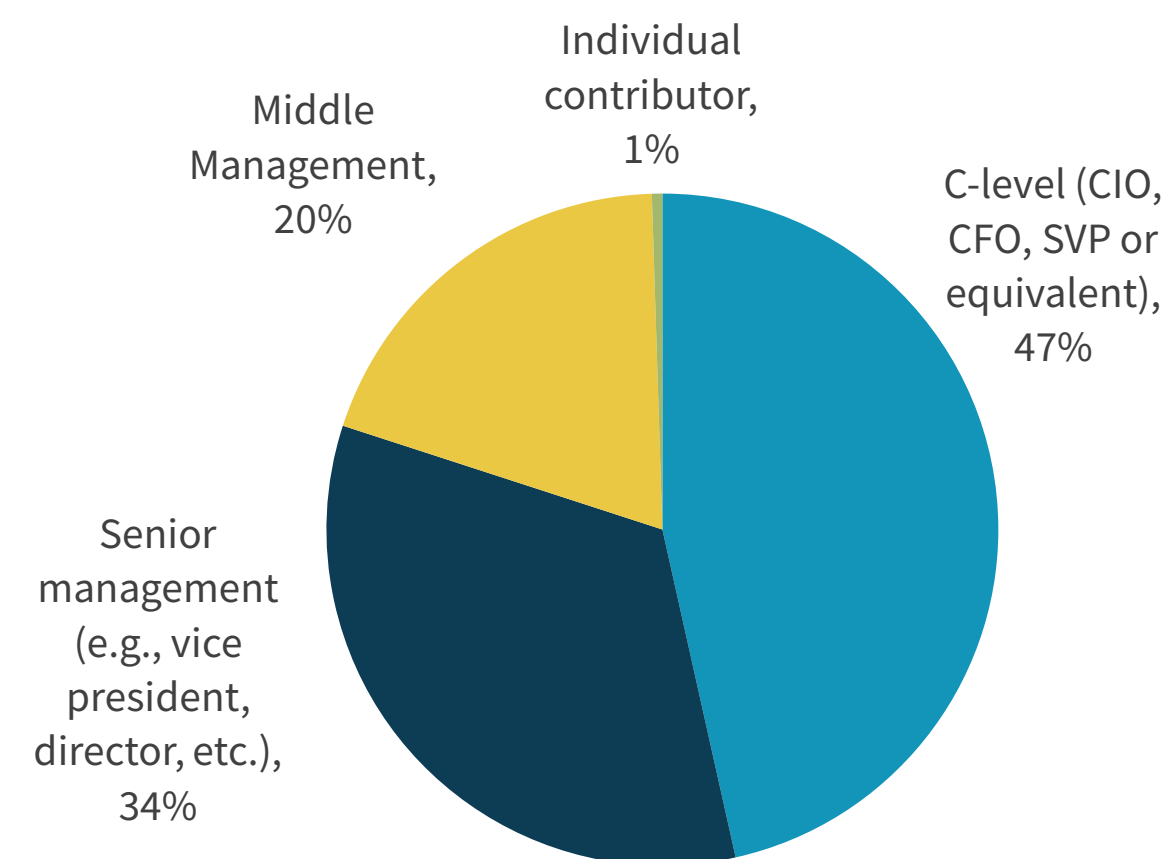
RESPONDENTS BY COUNTRY.



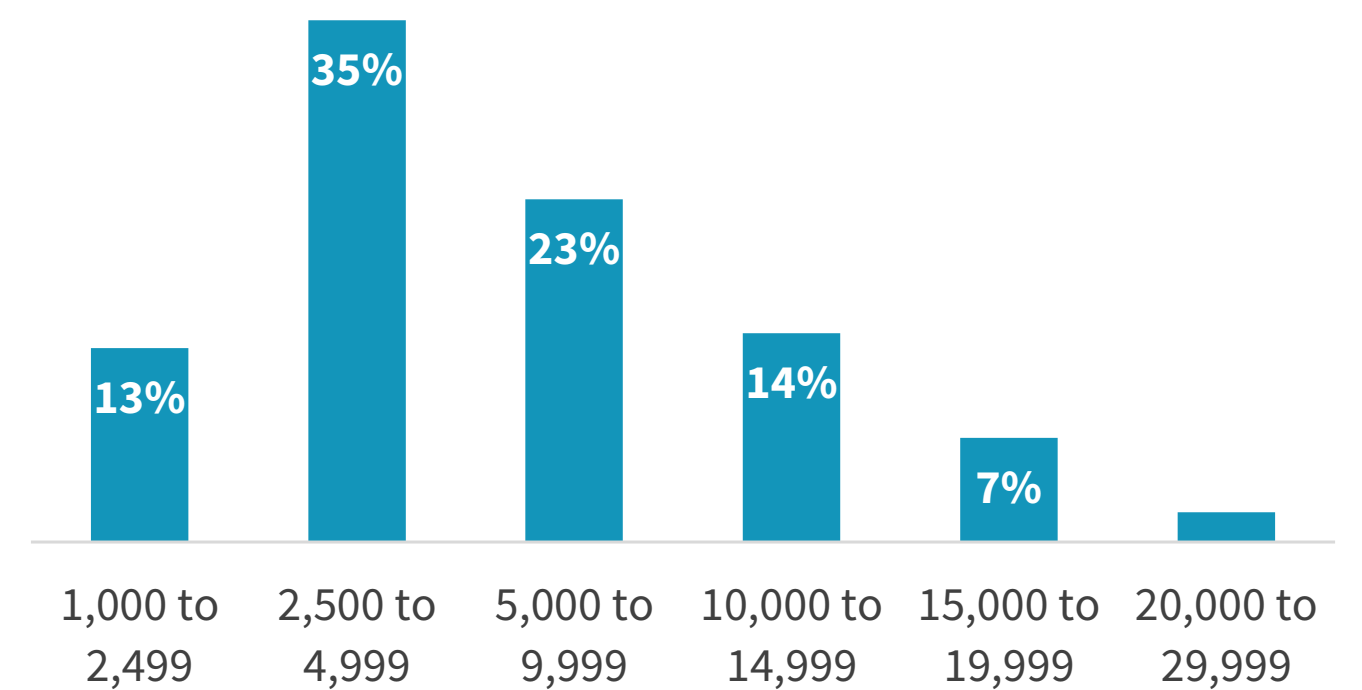
RESPONDENTS BY JOB FUNCTION.



RESPONDENTS BY ROLE.



RESPONDENTS BY COMPANY SIZE.





ABOUT DELL TECHNOLOGIES

Technology has never been more important than in today’s data-driven era, and Dell believes it is an overwhelming force for good. We’re committed to helping safeguard technology’s role in human progress by helping you plan, prepare, and protect against attacks so you can build your breakthrough with confidence.



ABOUT ESG

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