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Flexible IT Models Drive Efficiency and Innovation

APRIL 2021

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Introduction and Research Overview

OBJECTIVE:

This study sought to understand whether, and to what degree, an organization's adoption of technologies and processes that enable flexible IT service delivery are correlated to IT and business benefits. Conversely, the study investigates if organizations that lag in terms of flexible IT enablement are more likely to struggle.

METHODOLOGY:

ESG conducted a double-blind, online survey of 2,000 IT decision makers knowledgeable about a broad range of IT environment characteristics at their organizations, including data center infrastructure.

DEMOGRAPHICS:

Thirty-five percent of respondents (N=700) were based in North America (US and Canada), 28% (N=550) were based in Europe (UK, France, Germany, and Russia), 23% (N=450) were based in the Asia-Pacific region (Australia, New Zealand, China, Japan, and India), and 15% (N=300) were based in Latin America (Brazil and Mexico). Organizations represented a mix of midmarket organizations (i.e., those with 100-999 employees, 21%) and enterprises (i.e., those with 1,000 employees, 79%).

What Does Flexible IT Really Mean?

Uncertainty and change mean the IT organization, and its service delivery capabilities must be more flexible. Multi-year IT planning cycles have become outdated almost overnight. Organizations need the agility to deploy, scale, and deprovision resources on the fly based on rapidly changing user and business requirements.

Cloud computing operations models deliver this flexibility, allowing infrastructure users to define requirements while the provisioning and management of the infrastructure is handled “behind the scenes” in a highly automated fashion. Teams that expand cloud operations beyond the public cloud and extend it to on-premises and hybrid environments optimize their ability to adapt with agility.

Segmenting the Market in Terms of Flexible IT Enablement: A Modern Approach to Infrastructure Management Demanded by Modern Organizations

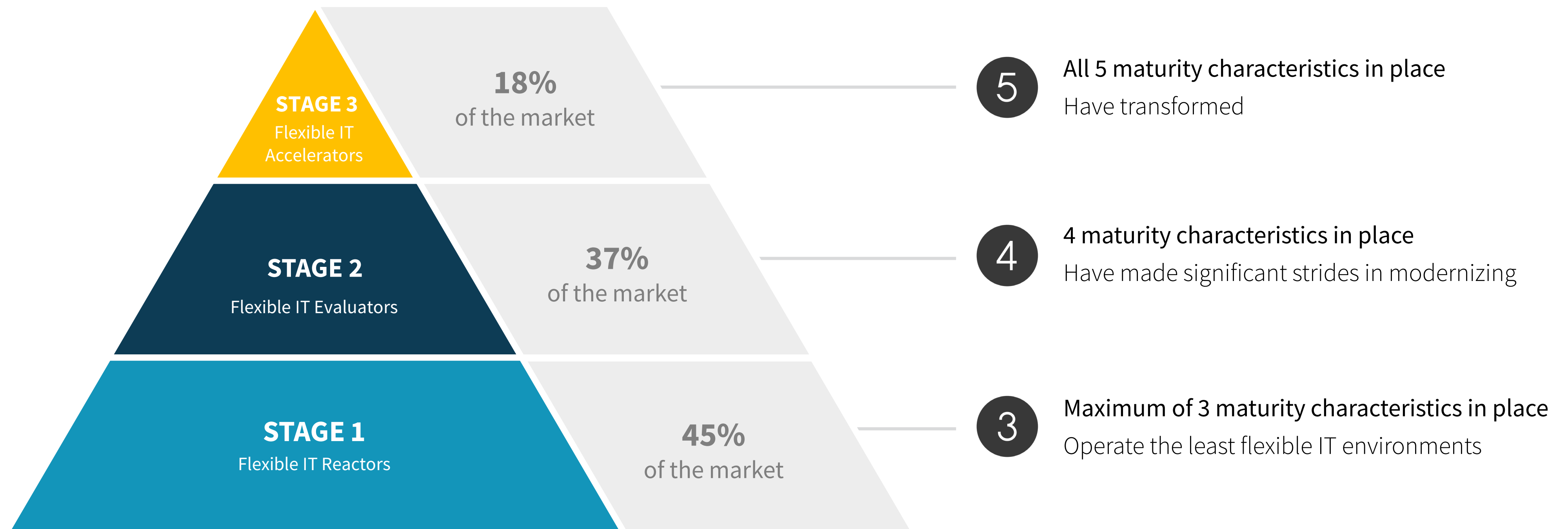
In order to analyze organizations by their ability to deliver IT services to end-users flexibly, ESG grouped respondents’ organizations into three cohorts based on their responses to five survey questions specific to application and infrastructure management:

- Their progress toward delivering on-premises Infrastructure-as-a-Service (i.e., infrastructure that can be provisioned by users rapidly in a self-service manner, is operated in a highly automated fashion, and is paid for or costed over time based on usage versus with a large upfront capital cost)
- Who leads workload placement decisions
- How workload placement decisions are made
- The number of workload locations typically evaluated
- Whether they are consolidating the number of infrastructure management tools in use across workload locations

Each of these questions is representative of a maturity characteristic: a behavior or technology in use that identifies the organization as a leader. ESG’s hypothesis was that organizations making flexible IT a reality would be most well positioned to deliver an adaptable and agile technology experience to end-users.

Three Stages of Making IT Flexibility a Reality

Today the plurality (45%) of organizations fall into Stage 1, showing that legacy IT management approaches are still the norm for many organizations today. At the same time just 18% of organizations meet the threshold of making flexible IT consumption a reality. There is a clear imperative for most organizations to radically evolve IT operations to deliver increased agility and flexibility.



Key Takeaways: What Did We Learn About Flexible IT Accelerators?

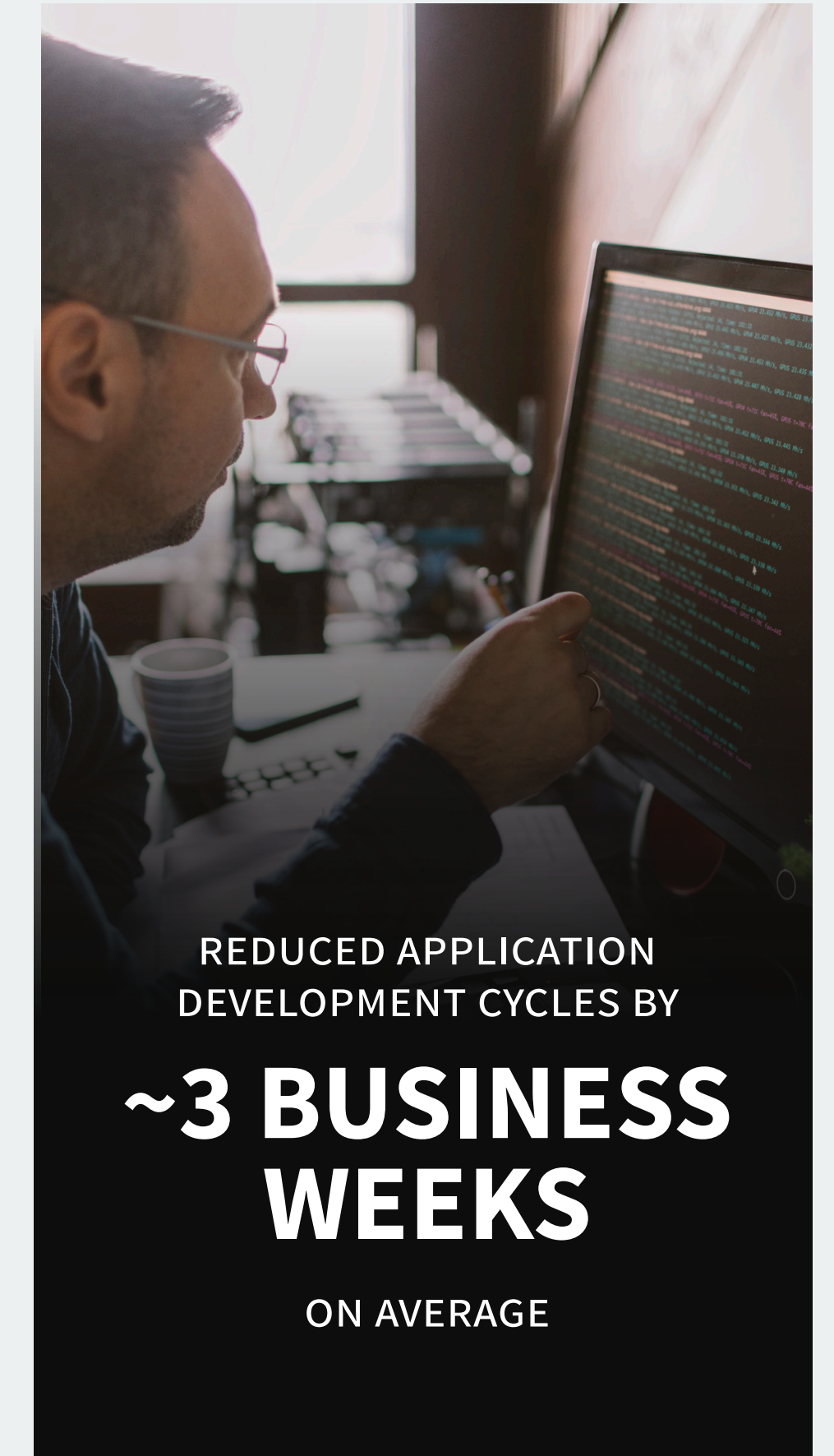
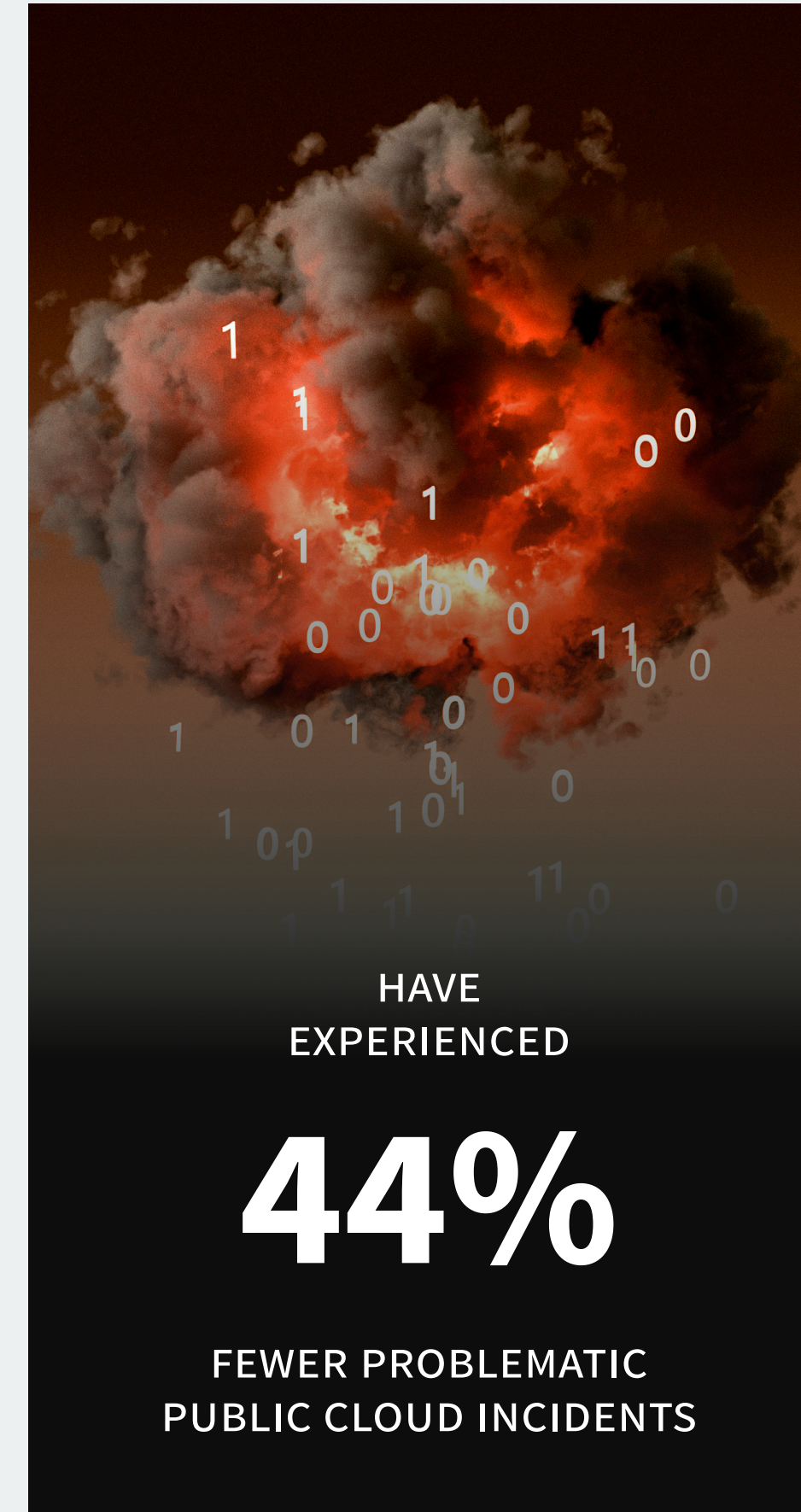
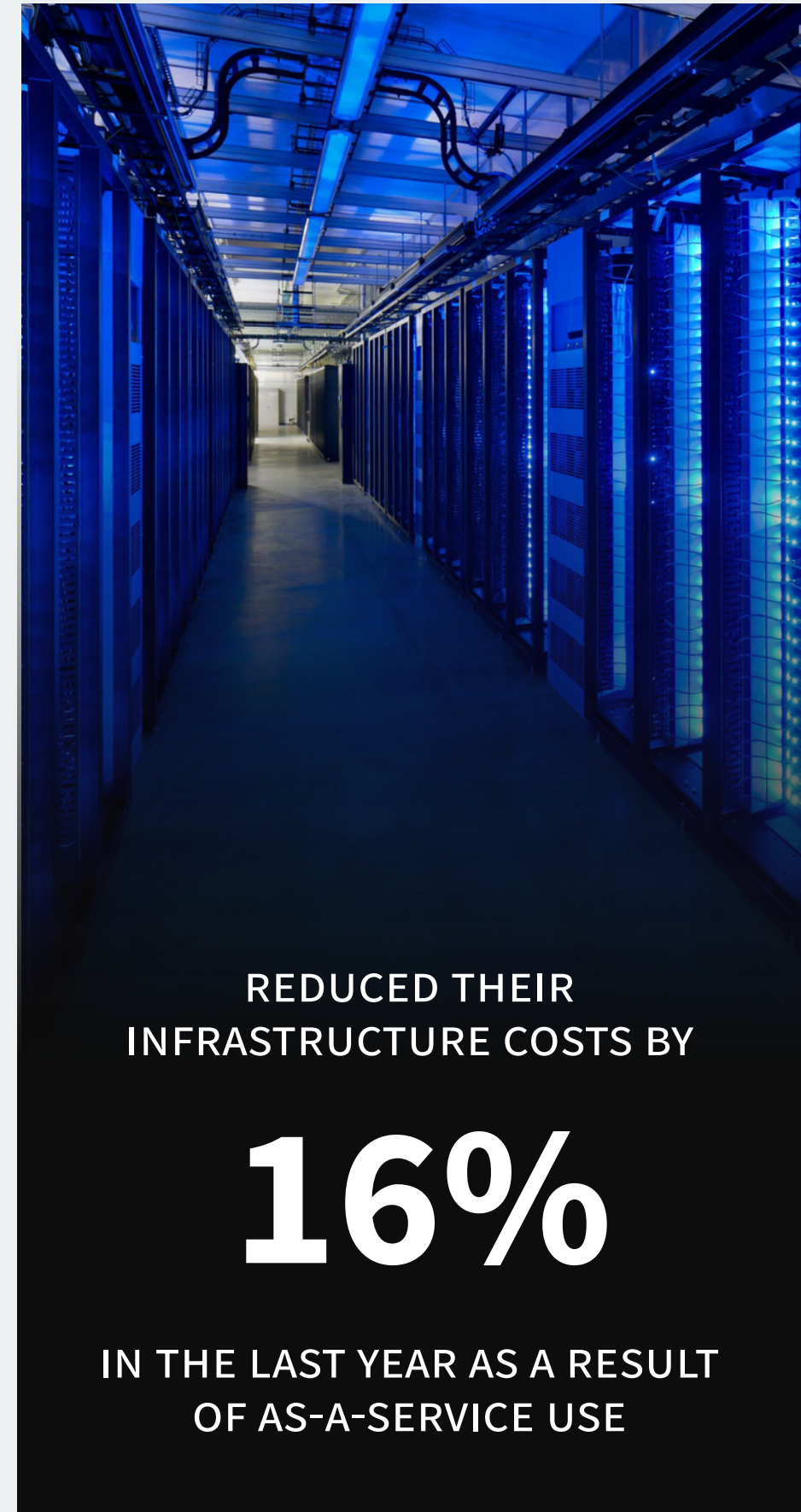
Accelerators enjoy big rewards:

Cost optimization: These organizations have reduced their infrastructure costs by 16% in the last year as a result of their use of on-premises infrastructure-as-a-Service consumption models (a 60% greater reduction than reported by Flexible IT Reactors).

More effective public cloud management:

These organizations are making smarter public cloud use and workload placement decisions for their businesses, reducing their risk. As a result, they have experienced 44% fewer problematic public cloud incidents (like app outages, data loss, and security breaches) in the past 12 months than Flexible IT Reactors.

More agile development and migration processes: These organizations credit their as-a-Service capabilities with reducing application development cycles by ~3 business weeks on average (a 40% larger reduction compared with Flexible IT Reactors). Moreover, these organizations are able to re-platform workloads from one location (public cloud, edge location, or private cloud) to another 53% faster than Flexible IT Reactors on average.

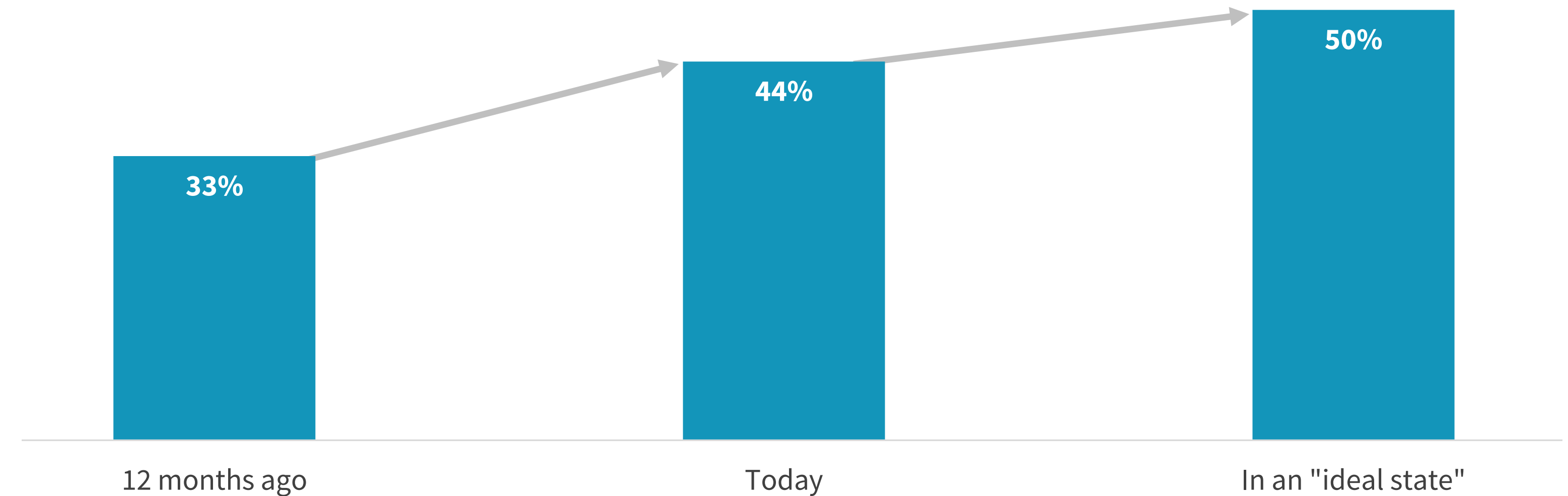


As-a-Service Consumption Is Trending Up

A cornerstone of flexible IT is the proliferation of as-a-Service consumption models throughout the environment. Traditionally as-a-Service consumption models have been delivered by public cloud providers, but on-premises infrastructure vendors and IT teams are increasingly employing these models.

The research quantifies the degree to which organizations' environments are delivered as-a-Service and organizations report a clear uptrend in the aggregate: twelve months ago, respondents reported that an average of 33% of their environment was delivered as-a-Service; today that percentage has increased to 44%. Furthermore, in an ideal state, respondents report 50% of their environment would be delivered as-a-Service, showing there is further room for growth.

Average percentage of IT environment delivered as-a-Service

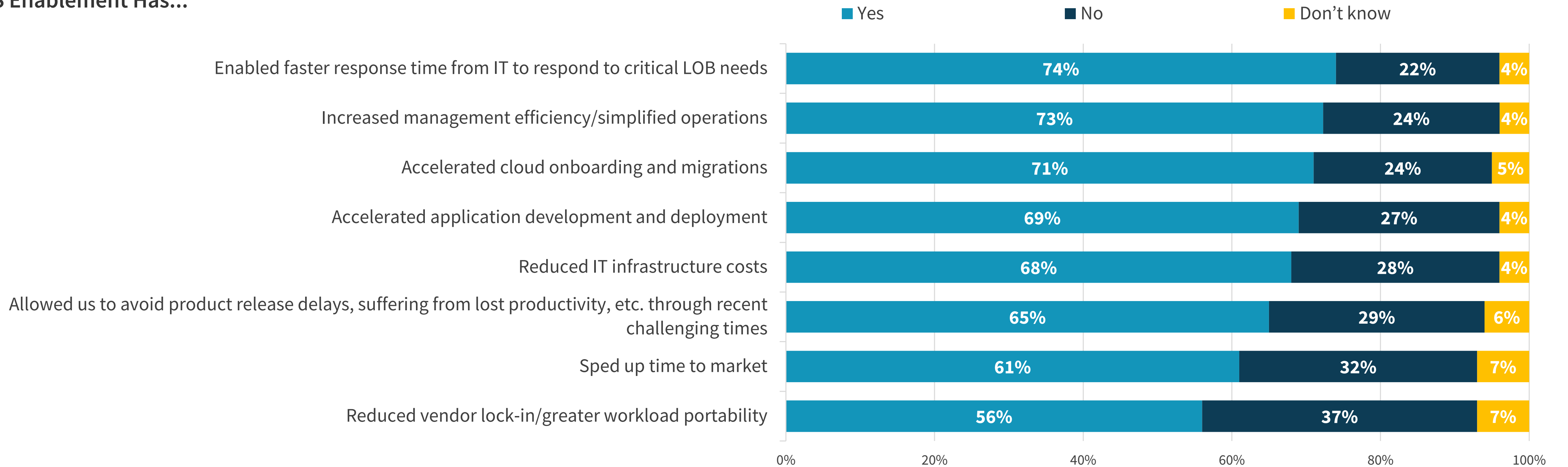


Question text: Think of your organization's total IT environment, approximately how much was delivered 12 months ago? How much is delivered as-a-Service today? In an ideal state how much of your IT environment would be delivered as-a-Service? (Mean, N=2,000)

As-a-Service Consumption Models Drive Benefits for Organizations

The survey asked respondents to report the benefits their organizations have enjoyed as a result of the employment and expansion of as-a-Service consumption models. The data makes it clear that all organizations stand to gain from as-a-Service enablement. ESG asked respondents if their organizations had achieved 8 benefits as a result of as-a-Service consumption. Even the least frequently reported benefit was cited as achieved by the majority (56%) of all respondents.

aaS Enablement Has...

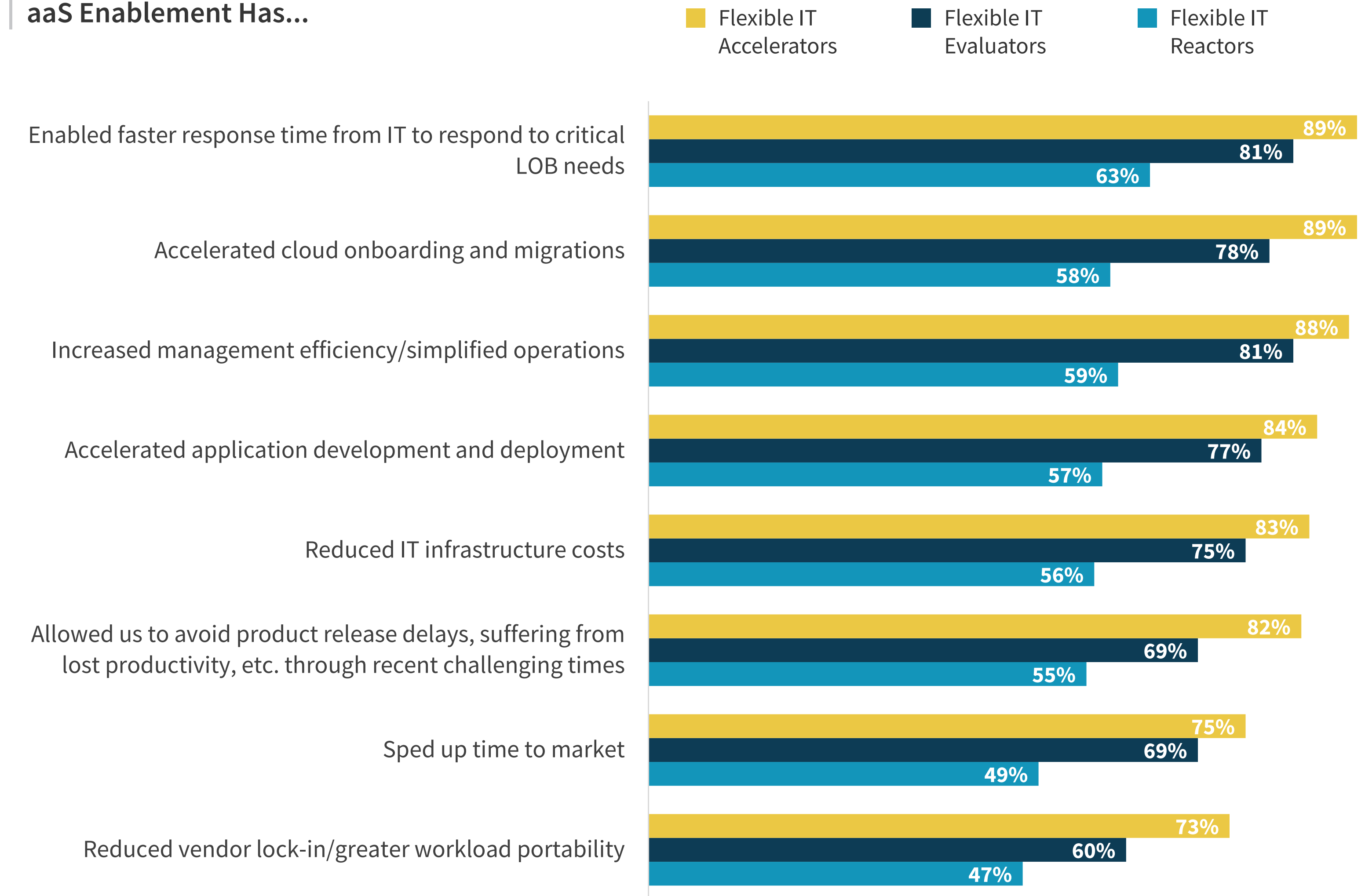


Question text: Would you say your organization has achieved any of the following as a result of its use of as-a-Service consumption models (including on-premises and related to public cloud infrastructure)? (Percent of respondents, N=2,000)

The Return on As-a-Service Enablement Varies with Flexible IT Maturity

Given that as-a-Service enablement is one of the pillars of how ESG evaluates overall flexible IT maturity, it is not surprising to note that more mature organizations see the greatest return to date from as-a-Service consumption usage: 80% or more of Flexible IT Accelerators credit as-a-service usage with faster responsiveness to requests from line-of-business stakeholders (89%), faster cloud onboarding and migrations (89%), more efficient IT operations (88%), accelerated application development and deployment (84%), reduced infrastructure costs (83%), and increased organizational resilience (82%).

aaS Enablement Has...



Question text: Would you say your organization has achieved any of the following as a result of its use of as-a-Service consumption models (including on-premises and related to public cloud infrastructure)? (Percent of respondents whose organization has achieved this benefit)

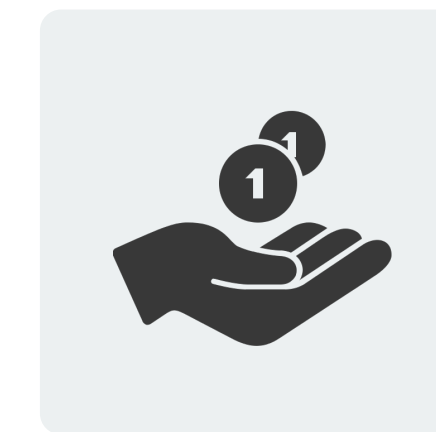
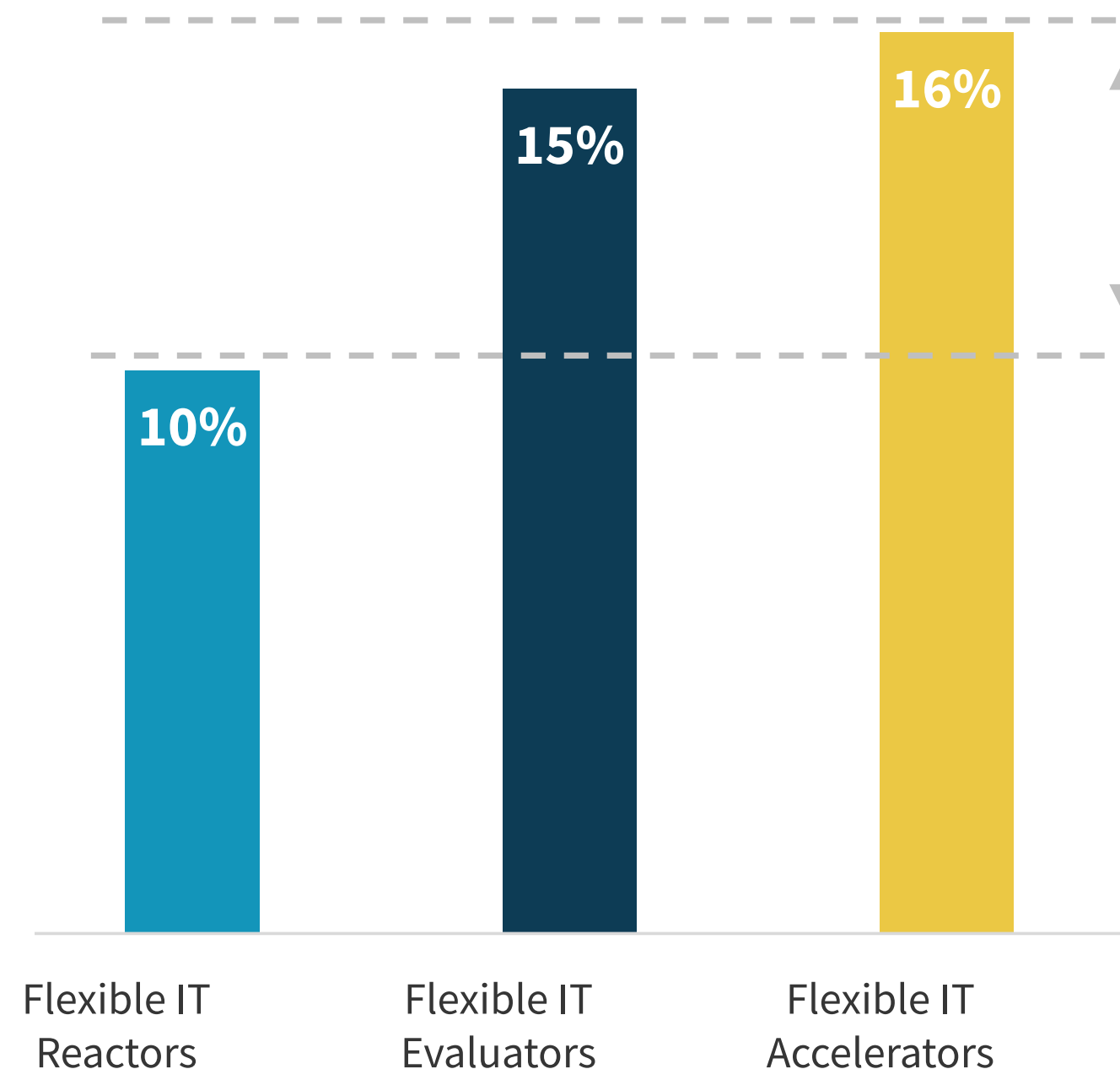
Quantifying the Cost Impact of Increased IT Flexibility and As-a-Service Acceleration

Legacy IT planning and procurement depends on multi-year projections and infrastructure sizing forecasts, meaning organizations overbuy what they need today and “grow into” their environment over time. There are two drawbacks with this approach:

- First, upfront overprovisioning of resources is an inefficient use of capital. This amounts to a large down payment on infrastructure that saps available funds from other possible projects.
- Second, forecasts are often wrong. The organizations may find their infrastructure underutilized if the planning assumptions are wrong, again resulting in an inefficient allocation of capital. Similarly, planning assumptions may undershoot workload needs, which will require the organization to undertake another round of capacity planning and investment.

Our research shows that advances in delivering IT flexibility directly reduce costs by driving efficiencies in on-demand provisioning and scaling with workloads. **On average, Flexible IT Accelerators credit as-a-Service consumption models with reducing IT infrastructure costs by 16% over the last 12 months.** Given that past ESG research shows the average IT budget in 2021 is \$113.7M¹, and assuming that infrastructure spending represents ~40% of IT budgets, this represents a savings of \$7.3M over the past 12 months.

Reduction of IT infrastructure costs over the last 12 months as a result of as-a-Service



Flexible IT Accelerators reduce infrastructure cost by

60% MORE
with aaS consumption models

Question text: By how much do you believe your organization has reduced IT infrastructure costs over the last 12 months as a result of its use of as-a-Service consumption models (including on-premises and related to public cloud infrastructure)?

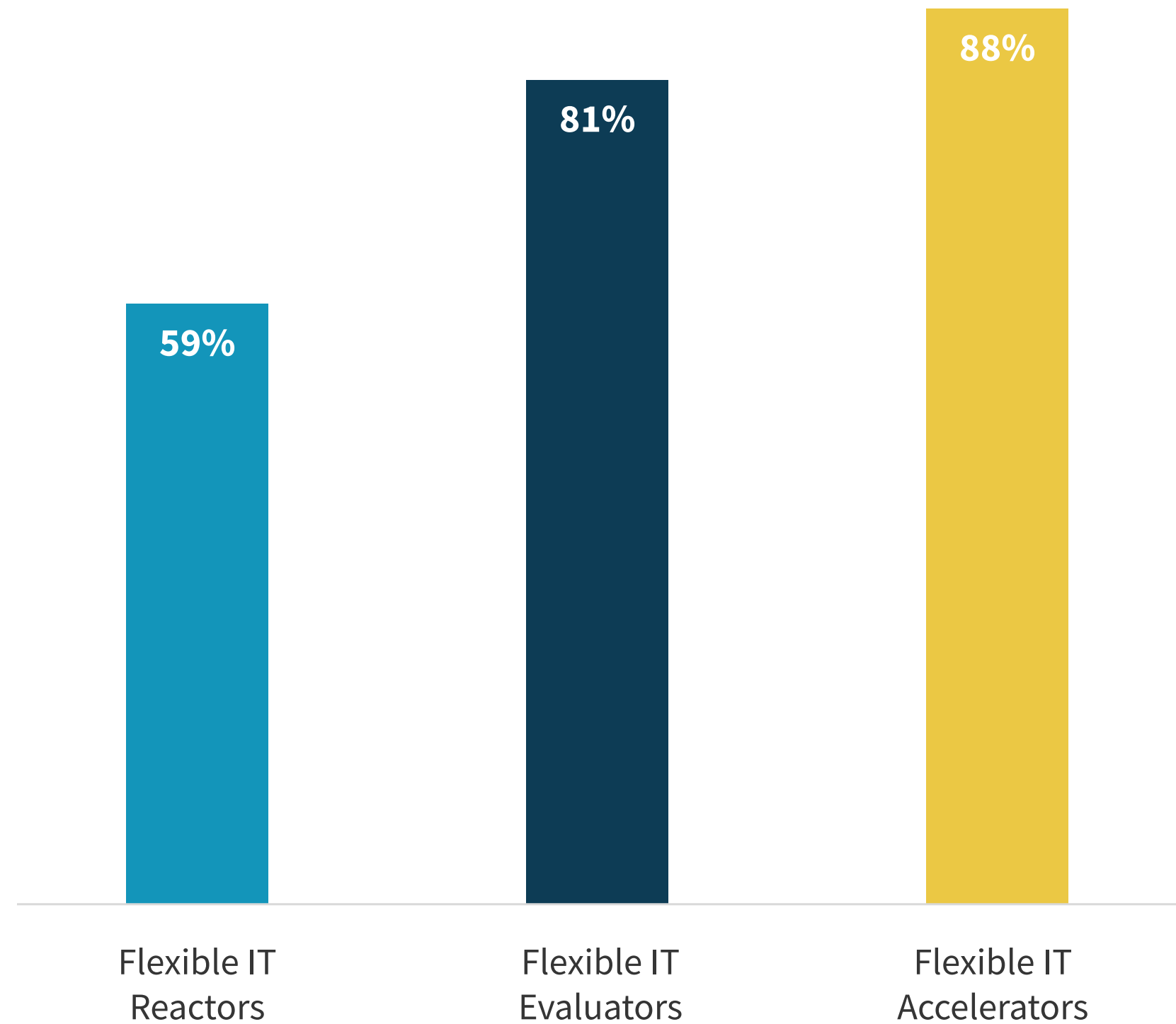
More than Just Saving Money: Saving Time with Increased IT Flexibility and As-a-Service Acceleration

To make IT flexibility real, teams typically find they need to leverage automation to simplify and streamline operations. Manual workflows and complicated provisioning and management tasks are incompatible with rapid IT service delivery and on-demand responsiveness.

Our research bears this out, with **Flexible IT Accelerators reporting an average of 44% more time savings than Flexible IT Reactors**. They report eliminating an average of 52 person-hours of manual infrastructure management tasks per week due to advances in as-a-Service consumption. Similarly, 88% of Flexible IT Accelerators say as-a-Service has increased infrastructure management efficiency and simplified operations versus just 59% of Flexible IT Reactors.

Not only do these efficiency gains help IT teams deliver on the promise of flexible IT, but they free staff from mundane tasks to allow them to focus on strategic projects that can add significantly more value to deploying and tuning infrastructure.

| Achievement of management efficiency and simplified operations as a result of as-a-Service



Flexible IT Accelerators report an average of **44% MORE** time savings than Flexible IT Reactors.

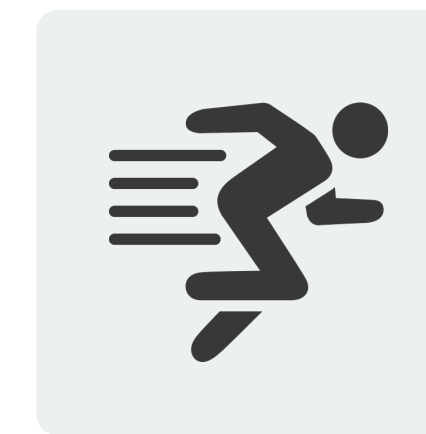
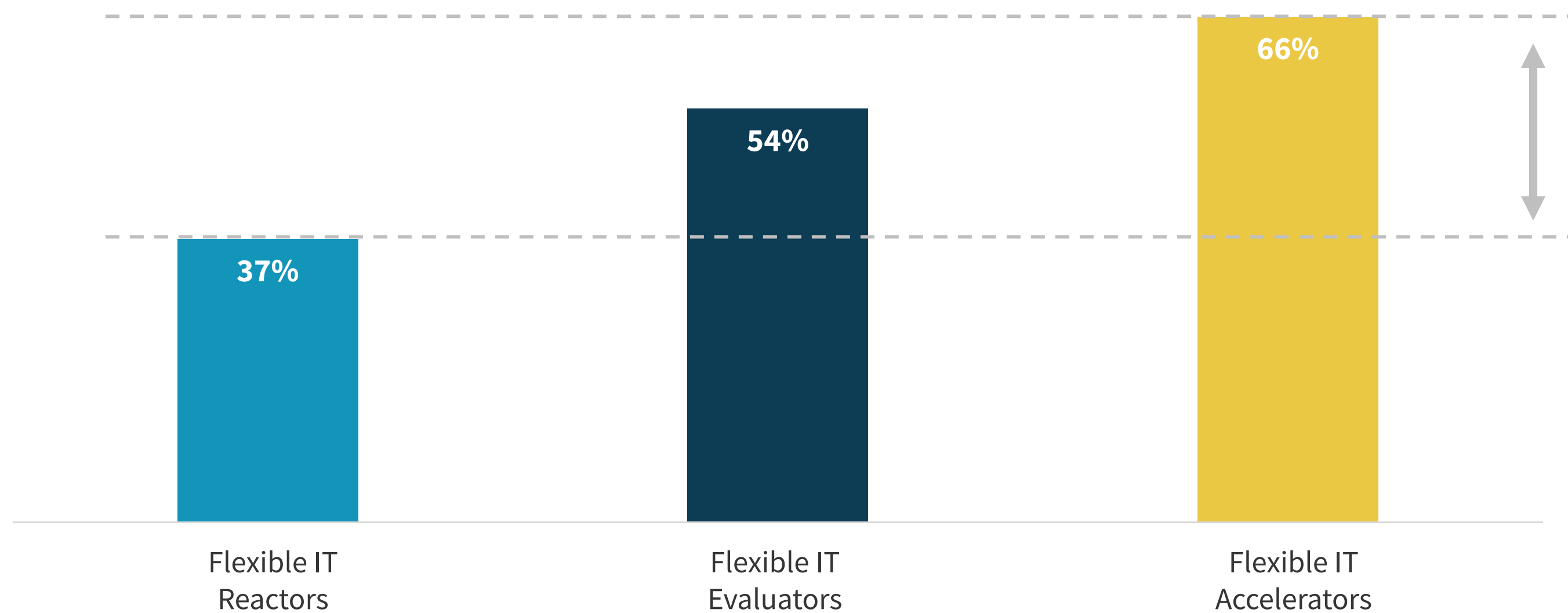
Question text: Has your organizations increased management efficiency and simplified operations a a result of its use of as-a-Service consumption models? (Percent of respondents selecting “yes”)

Accelerating True IT Flexibility Allows IT to Deliver on Stakeholders' Expectations

For many in IT, the definition of success is to deliver a level of service high enough that users don't complain. The threshold of that level of service is frequently defined by a formal service level agreement (SLA) between IT and constituents like developers, data analysts, and other line-of-business stakeholders. For example, the help desk team might have an SLA stating that all tickets submitted will be responded to within four hours. Or an IT operations team may guarantee a specific level of capacity or bandwidth will be available for a workload.

Our research shows that the agility enabled by truly flexible IT operations helps teams eliminate SLA non-compliance. Relative to Flexible IT Reactors, **Flexible IT Accelerators have reduced SLA non-compliance by 78% more thanks to as-a-Service adoption.** While Flexible IT Reactors have reduced SLA non-compliance by 37% on average, Flexible IT Accelerators have eliminated two-thirds of SLA violations.

Average reduction in SLA non-compliance as a result of as-a-Service use



Flexible IT Accelerators save have reduced SLA non-compliance by **78% MORE** due to aaS

Question text: What has been the impact on SLA non-compliance when responding to LOB needs (provisioning requests, trouble tickets, etc.) resulting from your organization's use of as-a-Service consumption models (including on-premises and related to public cloud infrastructure)? (Estimated mean)

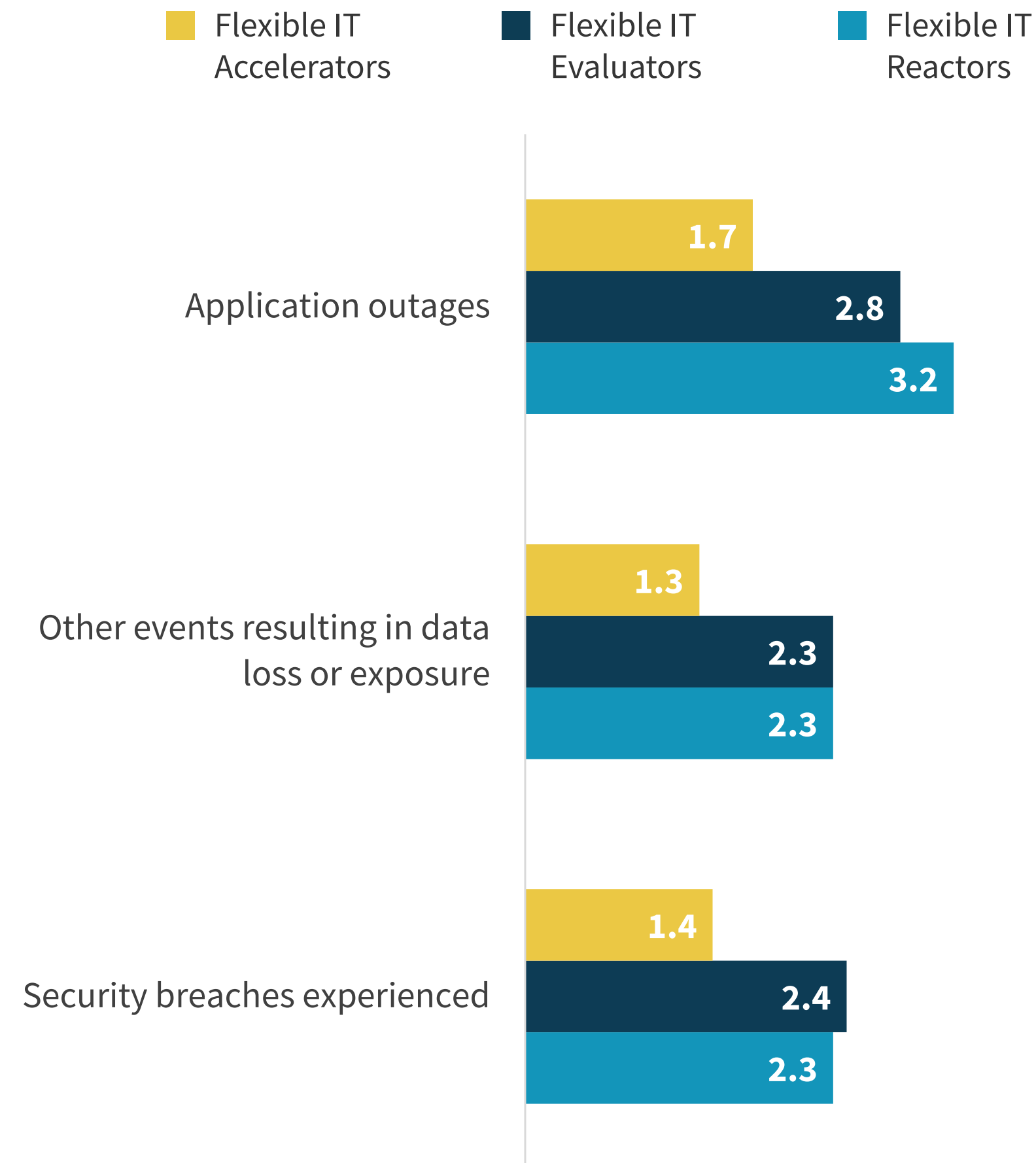
Accelerating True IT Flexibility Helps Mitigate Public Cloud Risk

One key element in ESG’s definition of flexible IT is the ability of the organization to evaluate numerous environments—across private cloud, public cloud, and edge—for workloads and to select the environment that best suits the needs of the workload in question. This flexibility has numerous benefits for organizations, from getting the right level of performance at the right cost, to right-sizing public cloud consumption.

Consider an organization with a public cloud-first orientation. This organization may place an outsized proportion of their data on various public clouds. If the organization’s cloud security program can’t keep pace, the organization may be at risk for data loss or application outages due to misconfiguration or cyber-attacks. Organizations with the flexibility to utilize public cloud where it makes sense for them lower their risk and this theme is apparent in the data.

We asked respondents how many public cloud data breaches, unplanned application outages, and other events resulting in data loss had occurred in the last 12 months. The differences were significant: **Flexible IT Accelerators reported 44% fewer incidents in the last 12 months than Flexible IT Reactors (4.4 versus 7.8).**

Number of cloud security incidents by flexible IT maturity level



Accelerators reported
44% FEWER
 incidents in the
 last 12 months than Flexible
 IT Reactors

Question text: How many times in the last 12 months has your organization experienced a security breach, application outage, or other event resulting in loss or exposure of its public cloud-resident data? (Estimated mean)

Accelerating True IT Flexibility Makes Application Modernization Efforts More Effective

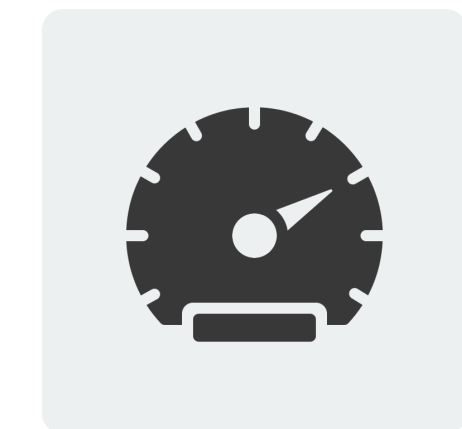
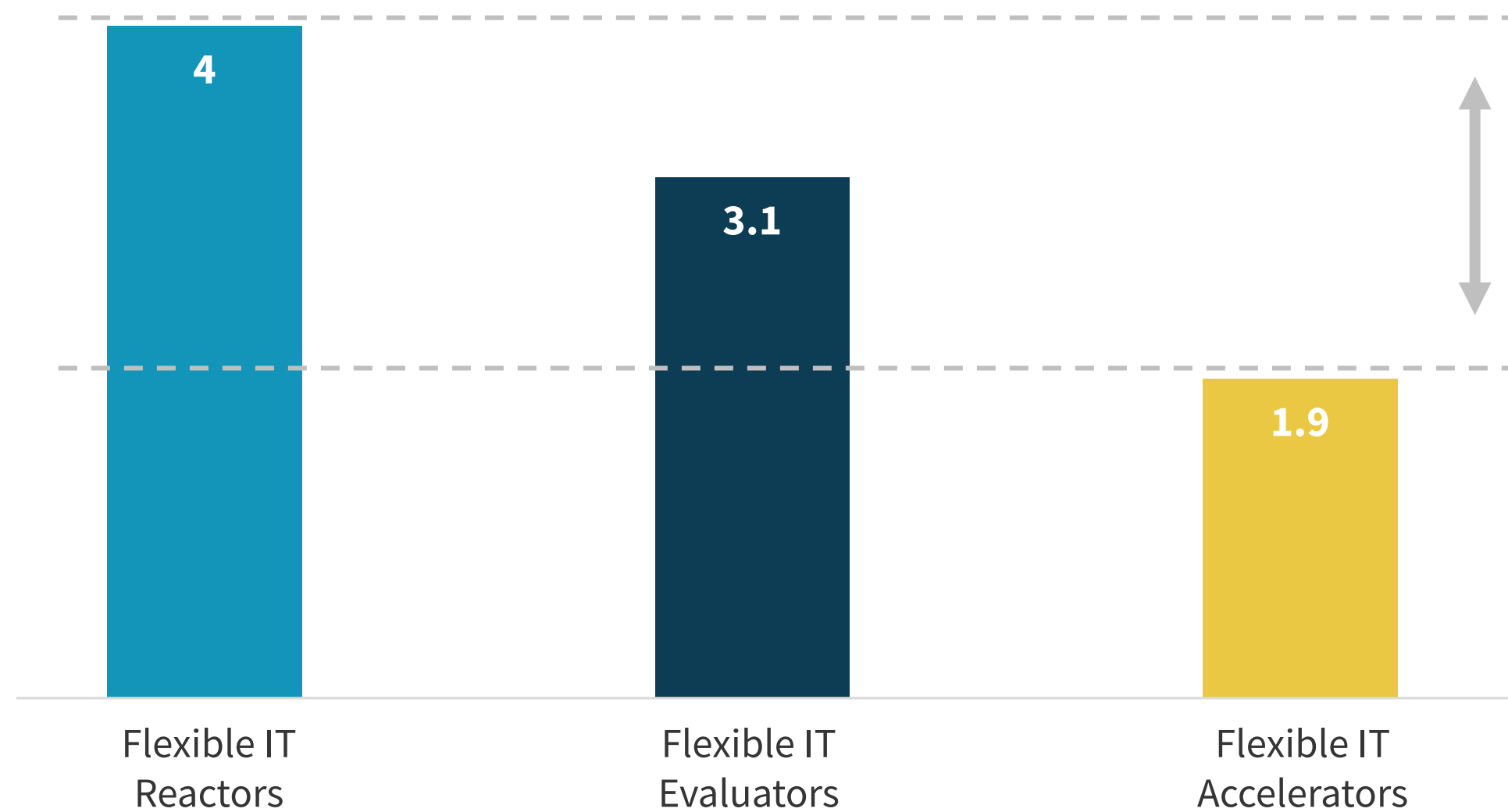
Business differentiation is increasingly driven by application developers, data analysts, and other teams whose charters are disrupting and transforming business processes. For those teams to do their jobs well, they need access to data and infrastructure. Flexible IT delivers that access faster and with less friction and our data shows that this allows leading organizations to outperform their peers on innovation.

For example, we asked respondents how much they've accelerated the traditional and cloud-native application development and deployment workflows as a result of As-a-service consumption models. Flexible IT Accelerators have compressed app innovation cycles by 40% more than Flexible IT Reactors, the equivalent of nearly a full business week.

Similarly, we asked respondents how often they push new code to any production environment. Nearly two fifths (39%) of Flexible IT Accelerators reported they push code to production multiple times per day versus just 24% of Flexible IT Reactors.

Finally, we questioned respondents about application modernization—that is, re-platforming legacy workloads to run in more cloud-native ways. On average, Flexible IT Accelerators reported their application re-platforming projects take less than half as long as Flexible IT Reactors (1.9 weeks versus 4 weeks).

Number of weeks needed to migrate a workload



Flexible IT Accelerators complete cloud migrations **53% FASTER** on average

Question text: How long does it typically take for your organization to re-platform/migrate an application workload (i.e., move workloads across public clouds or from the public cloud back to on-premises infrastructure)? (Estimated mean weeks)

What are the Correlations between Flexible IT Delivery and Business Success?

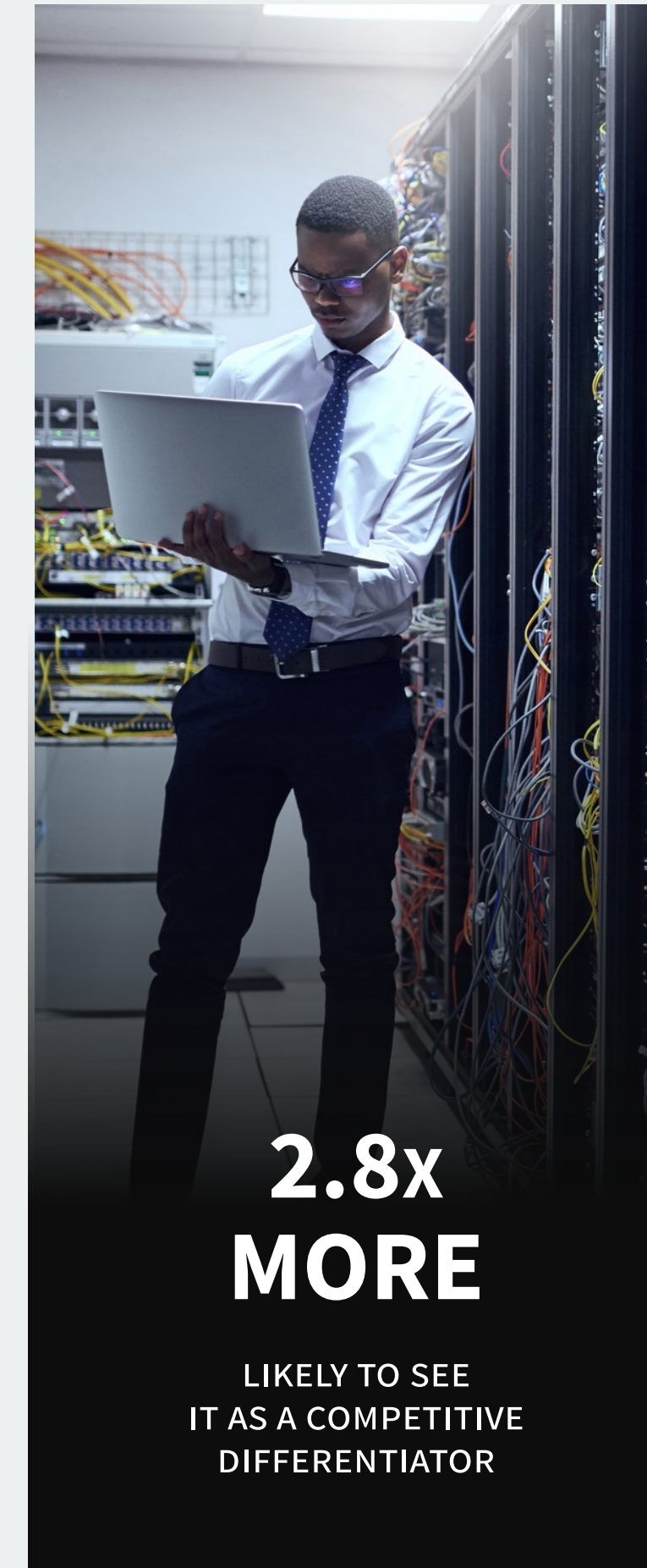
Accelerators enjoy big rewards:

They drive higher levels of innovation driving business transformation. On average 21% more of their annual revenue is driven by newly developed offerings.

Innovation yields differentiated customer experiences and higher customer satisfaction. They are 2.8x more likely to exceed their customer satisfaction goals.

Businesses recognize IT as a competitive differentiator. They are 2.8x more likely to see IT as a competitive differentiator while less mature organizations are 2.3x more likely to say their IT organization is just adequate, a cost center, or even a business inhibitor.

They are positioned to adapt and thrive through uncertainty: 98% of respondents at these companies are confident that they have the technology experience at their organization to adapt and thrive through major societal and macroeconomic disruptions.



How Flexible IT Acceleration Drives Innovation and Business Transformation

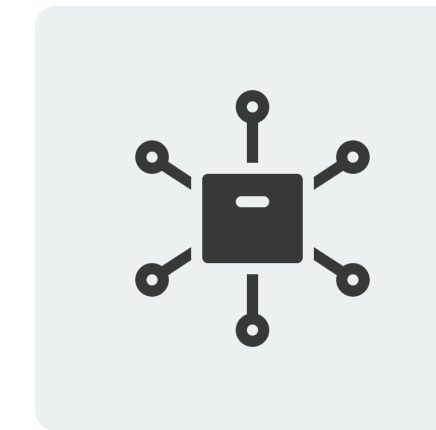
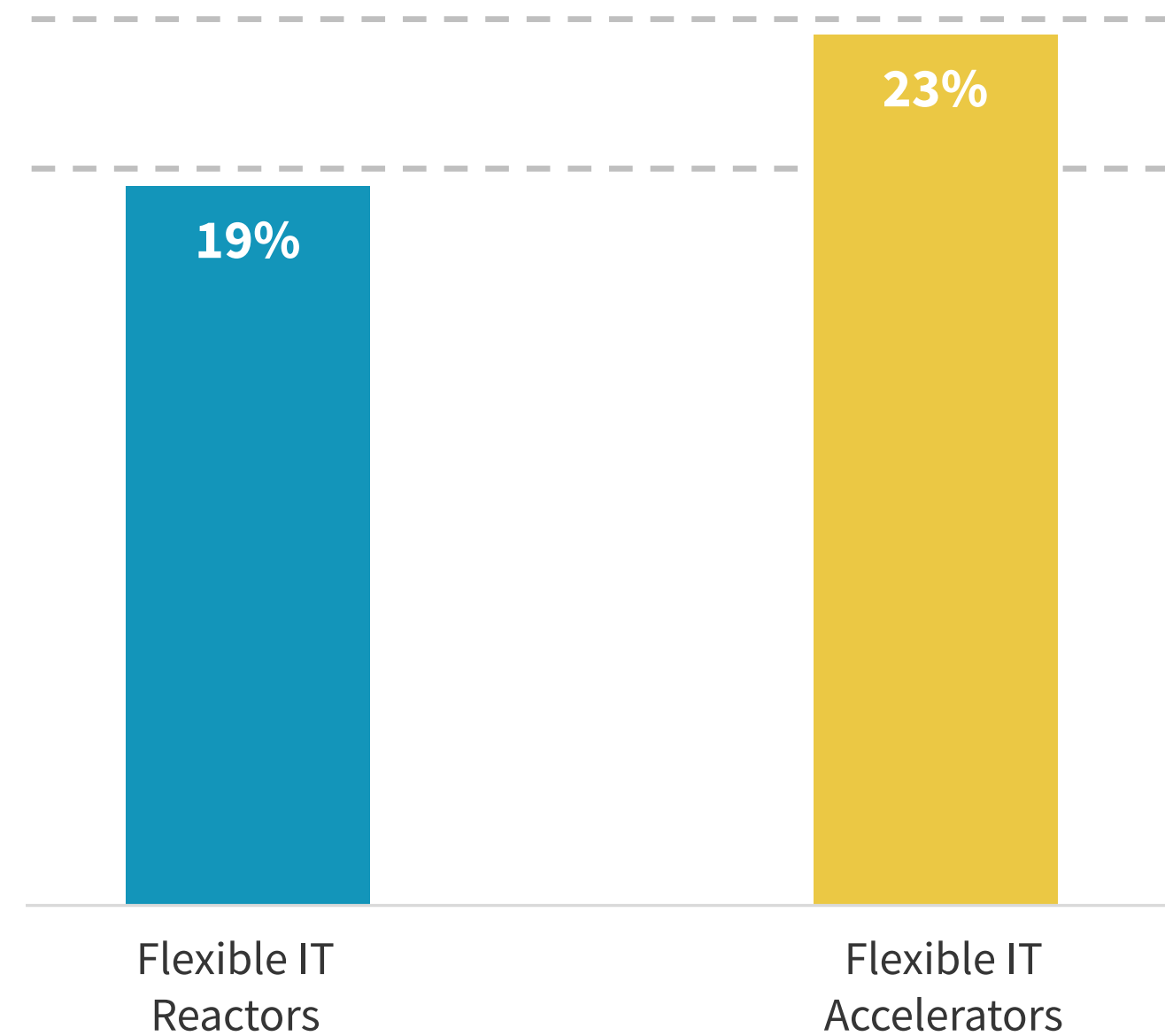
Flexible IT operations allow the IT organization to more rapidly respond to quickly changing user requirements. If an employee sees an opportunity that requires technical assets, those assets can be provisioned, tuned, and scaled on the fly to allow the organization to capitalize.

How does this capability show up in the data? When we asked respondents how much of their organization's revenue was tied to products and services launched within the last two years, **Flexible IT Accelerators reported 21% more revenue when compared to Flexible IT Reactors** (23% of revenue versus 19%).

By bolstering as-a-Service agility and removing manual infrastructure sizing, procurement, provisioning, and integration workflows leading organizations are creating an environment where new ideas are given the flexibility to flourish. The result is more newly developed services and experiences are able to be brought to market and become more foundational to the business's success.

IT organizations reliant on legacy IT operations face a clear mandate to remove friction via as-a-Service enablement.

Average percentage of revenue driven via innovation



Accelerators drive
21% MORE
 revenue through
 innovative channels

Question text: To the best of your knowledge, approximately what percentage of your organization's revenue is derived from products/services that your organization launched within the past two years? (Estimated mean)

Innovation Yields Differentiated Customer Experiences and Higher Customer Satisfaction

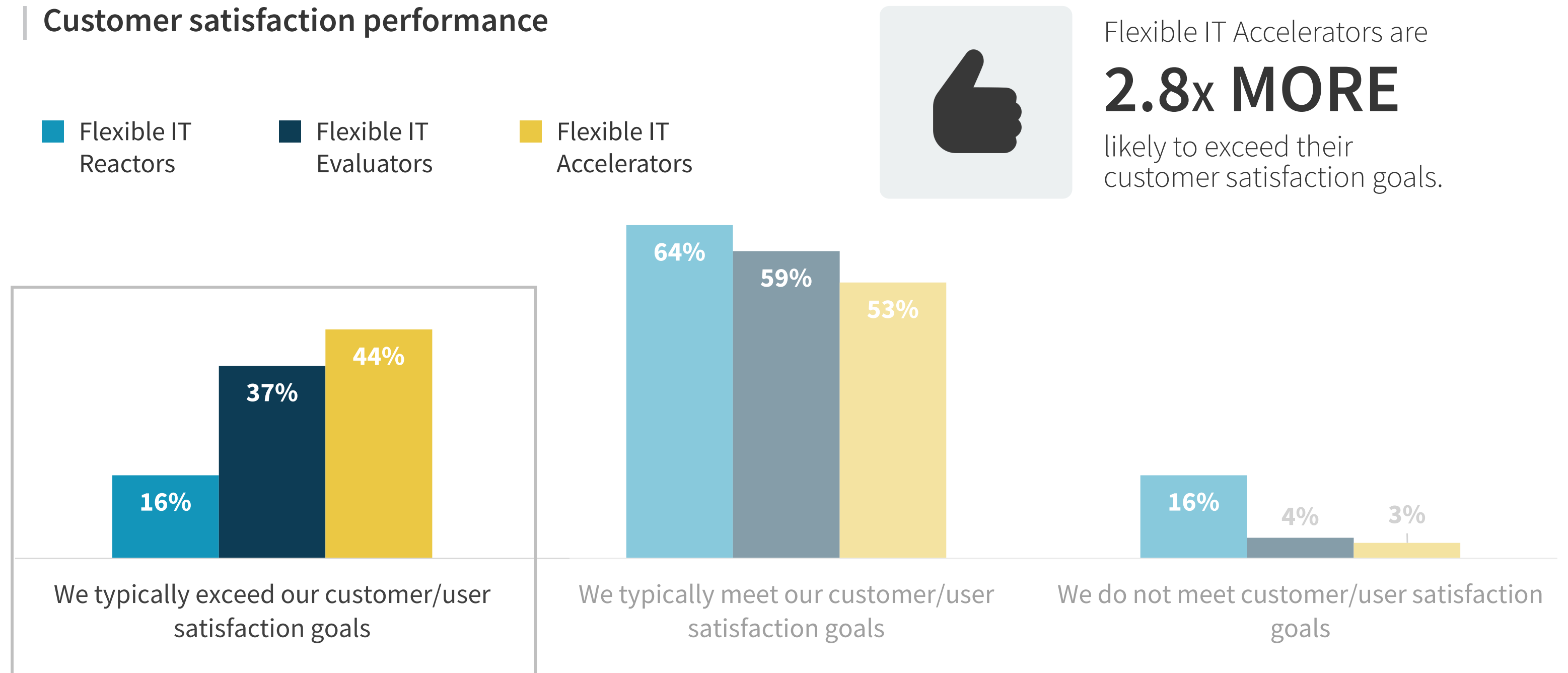
As discussed, attaining truly flexible IT has a strong correlation to both application development agility and cloud migration efficiency. By speeding development and cloud adoption, flexible IT helps organizations transform their offerings, roll out new services to customers, and layer in new solution capabilities quickly and non-disruptively, providing those customers with an optimized experience.

The data makes these connections clear: 44% of respondents at Flexible IT Accelerators say their organization typically exceeds their customer satisfaction goals, while just 16% of Flexible IT Reactors report the same level of success. **Flexible IT Accelerators are 2.8x more likely to exceed their customer satisfaction goals.**

IT organizations focused on customer outcomes must not only drive their internal operations to deliver cloud-like experiences which remove the friction from innovation, but they must also empower the organization to choose the right cloud for the right workload. Only by selecting the infrastructure environment that best meets the needs of workloads will end-user and customer satisfaction be optimized.

IT organizations locked into rigid cloud-first mentalities risk the delivery of subpar user experiences. The effective architecture of an IT environment spanning private cloud, public cloud, and the edge is needed.

Customer satisfaction performance



Question text: Relative to its goals, how does your organization typically perform on formal customer/user satisfaction metrics (e.g., Net Promoter Score (NPS), Customer Satisfaction (CSAT) or similar metrics)?

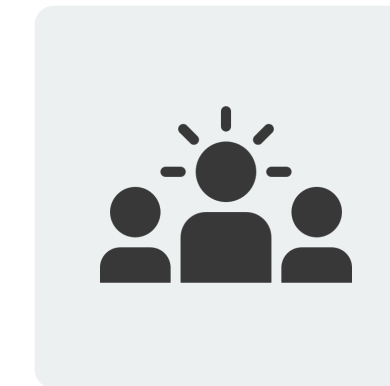
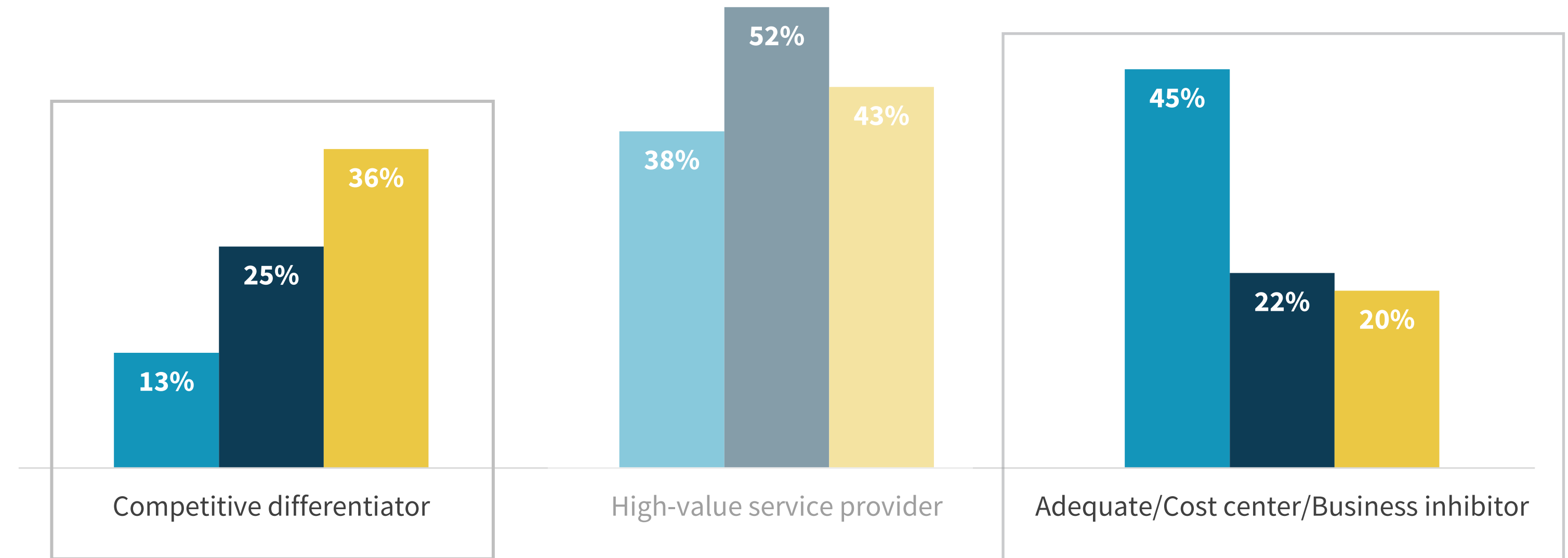
Businesses Recognize IT as a Competitive Differentiator

For many, reinventing IT to be a true cloud delivery center of excellence may seem daunting. Service delivery catalogues must be developed, a console for users to request resources must be developed, workflows must be automated, and infrastructure management teams need more unified management tools and to be trained and goaled differently. In short, there is a lot of work, but what is the reward?

Most organizations see IT as a cost center. Some recognize IT as a high-value service provider essential to operations. But far fewer (only 22% of organizations in our research) see IT as a competitive differentiator. However, IT teams that have redefined their IT operations are disproportionately recognized as giving their organization an edge. Relative to Flexible IT Reactors, **Flexible IT Accelerators are 2.8x more likely to see IT as a competitive differentiator.** On the flip side, **Reactors are 2.3x more likely to say their IT organization is just adequate, a cost center, or even a business inhibitor.**

How is IT viewed by the c-suite?

■ Flexible IT Reactors
 ■ Flexible IT Evaluators
 ■ Flexible IT Accelerators



Accelerators are

2.8x MORE

to see IT as a competitive differentiator.

Question text: How do your organization's C-suite business executives view the IT organization?

They Are Positioned to Adapt and Thrive Through Uncertainty

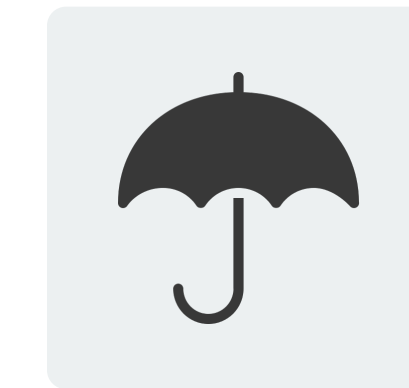
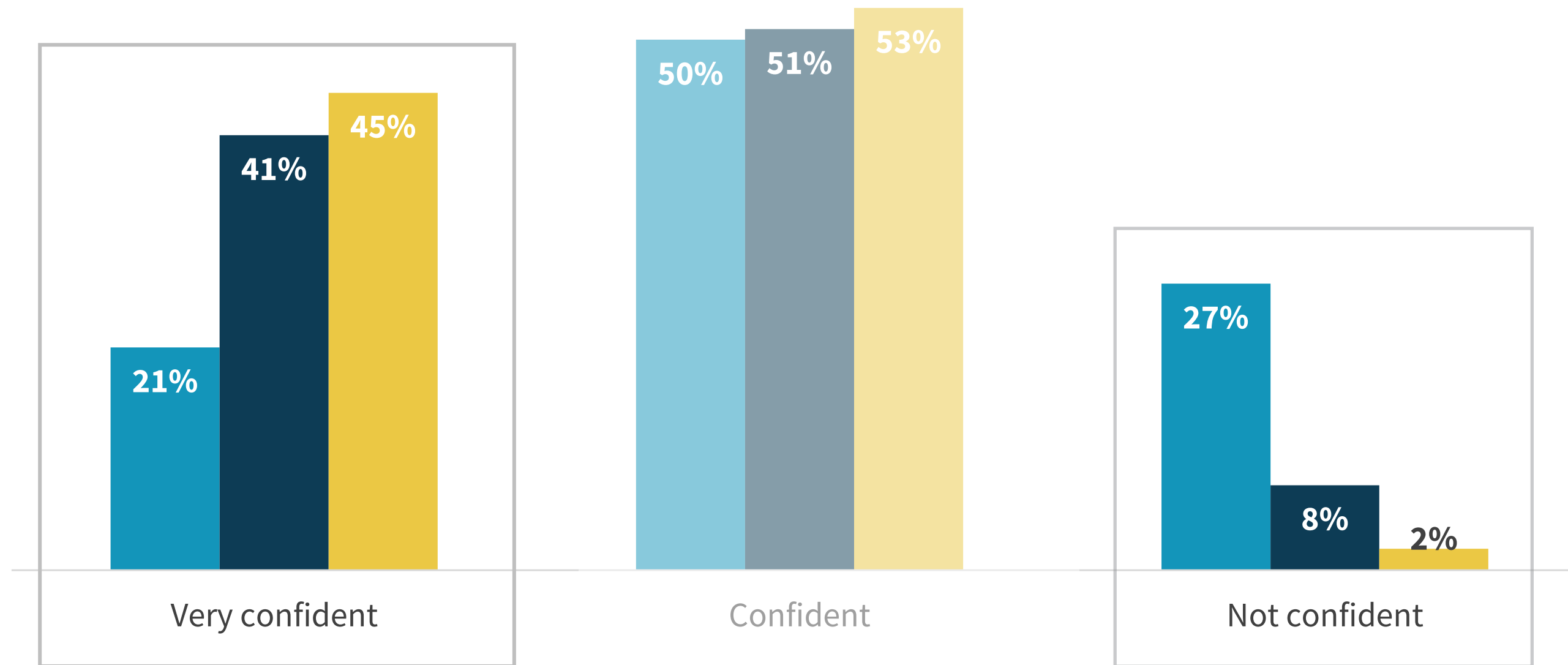
Flexibility is key in uncertain times. Not all organizations have the IT backend to support a dramatic shift to business operations like a massive shift to remote work. Not all organizations have the technology orchestration needed to rapidly develop new ways to engage with customers at scale, like a complete pivot to an e-commerce business model. And organizations tied to rigid multi-year technology roadmaps can't adapt easily when macroeconomic factors shift unexpectedly.

However, our research shows that organizations that have advanced their IT delivery models are much more confident in their resiliency. In fact, **98% of Flexible IT Accelerators are confident that they have the technology experience at their organization to adapt and thrive through major societal and macroeconomic disruptions.** Said another way, **Flexible IT Accelerators are 2.1x more likely to be very confident in their organization's resiliency.**

Forward-thinking IT leaders must bear in mind that the only constant in the world is change. Adapting IT models to effectively navigate that change, whatever it may be, is critical.

Confidence in organizational resiliency

■ Flexible IT Reactors
 ■ Flexible IT Evaluators
 ■ Flexible IT Accelerators



Accelerators are **2.1x MORE** likely to be very confident in their organization's resiliency.

Question text: How confident are you in your organization's ability to deliver the technology experience needed to adapt and thrive through major societal and macroeconomic disruptions?



Dell Technologies is among the world's leading technology companies, instrumental in developing solutions to help transform people's lives with extraordinary capabilities. From high-performance computing, storage and networking infrastructure to hybrid- and multi- cloud solutions, Dell Technologies provides the flexible IT that improves the agility of businesses and organizations to overcome unplanned obstacles and seize unexpected opportunities, and does so in a manner tailored to each organization's acquisition and consumption strategy. Dell Technologies will stop at nothing to help you harness the transformative power of technology so you can be ready for whatever comes next.

Together Intel and Dell Technologies are driving innovation and next generation capabilities with the broadest portfolio of trusted client and enterprise solutions for cloud and data management; enabling businesses to move faster, innovate more, and operate efficiently.

VMware's cloud, app modernization, networking, security and digital workspace platforms form a flexible, consistent digital foundation on which to build, run, manage, connect and protect applications, anywhere. Dell Technologies aligns the unique advantages of VMware software with Dell synergies to deliver even more value to customers by providing the essential infrastructure to build their customers' digital future and transform IT.

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ABOUT ESG

Enterprise Strategy Group (ESG) is an integrated technology analysis, research, and strategy firm providing market intelligence, actionable insight, and go-to-market content services to the global technology community. It is increasingly recognized as one of the world's leading analyst firms in helping technology vendors make strategic decisions across their go-to-market programs through factual, peer-based research. ESG is a division of TechTarget, Inc. (Nasdaq: TTGT), the global leader in purchase intent-driven marketing and sales services focused on delivering business impact for enterprise technology companies.

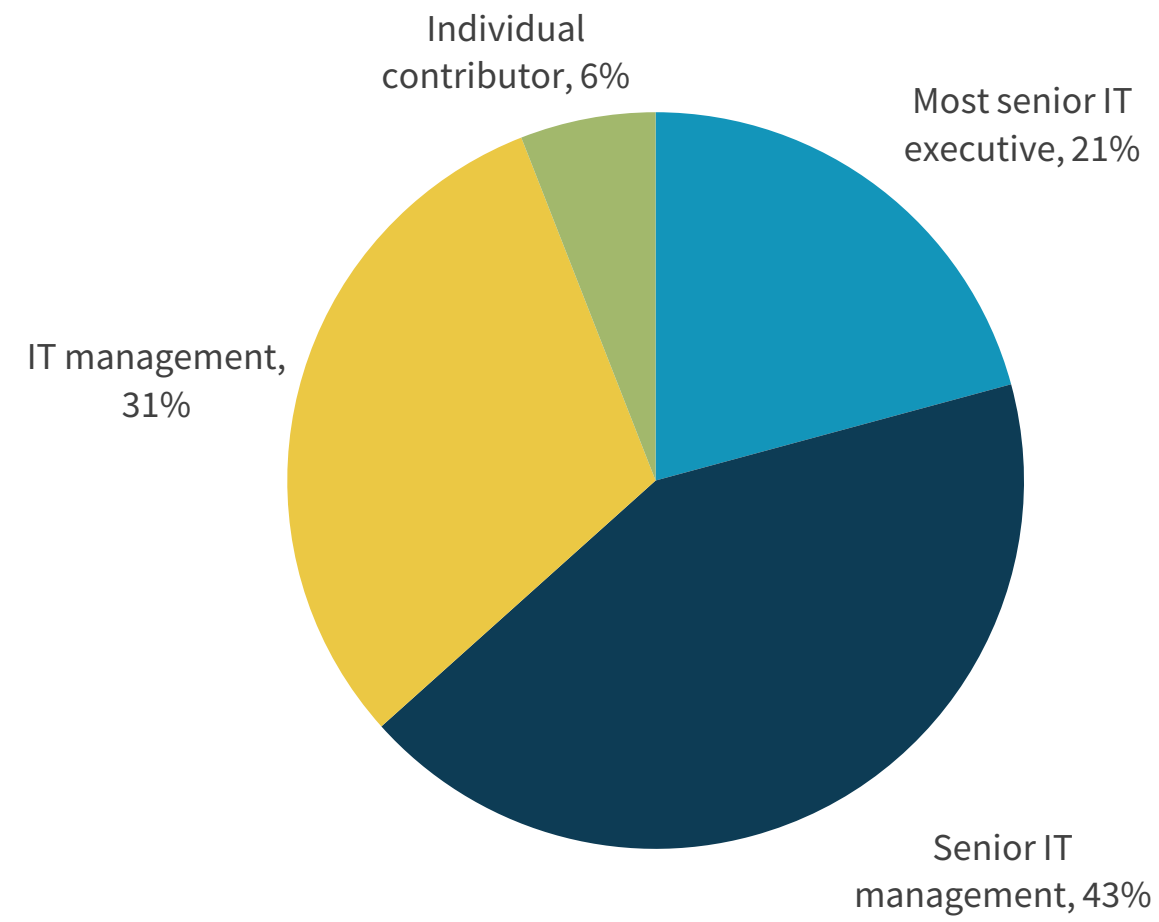


Research Methodology

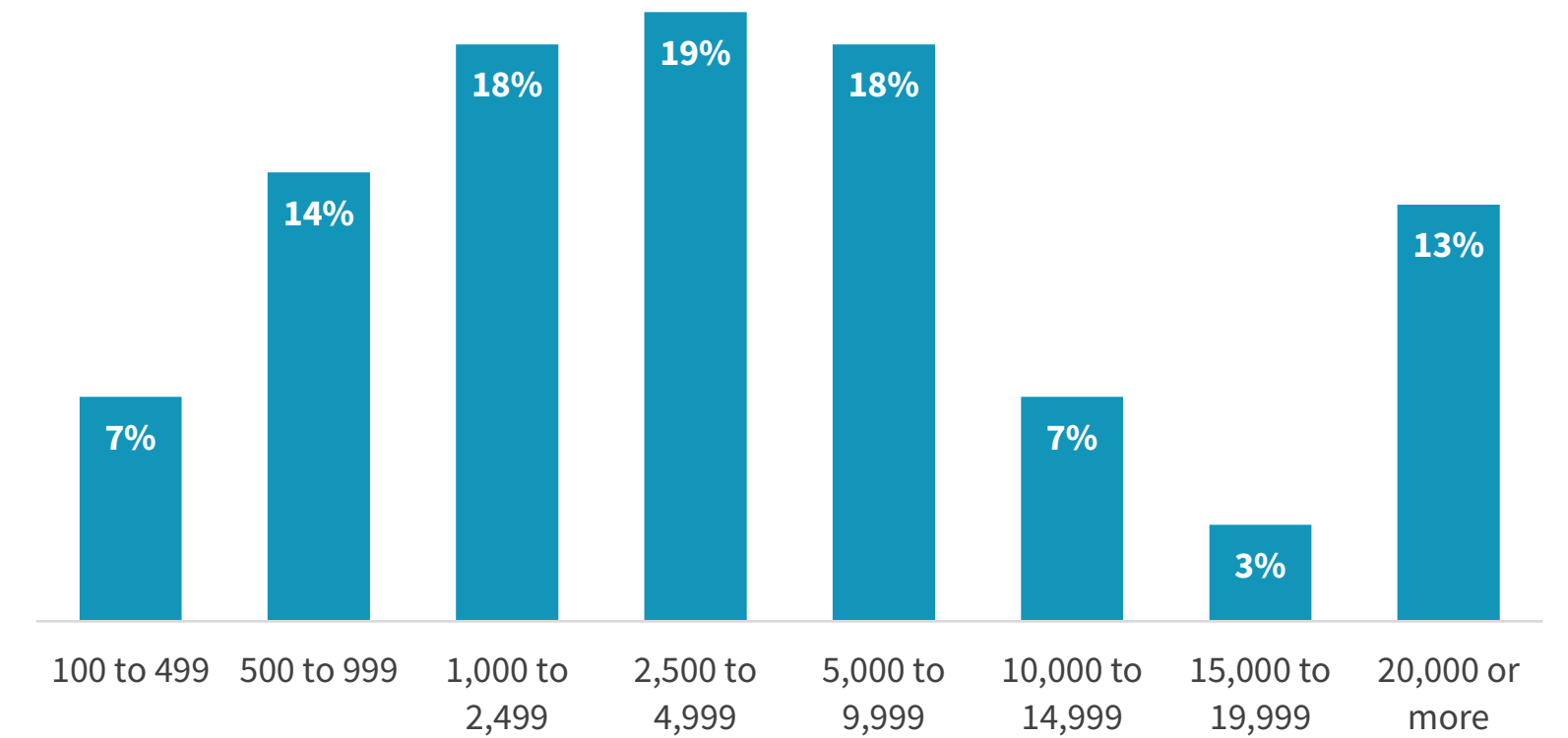
To gather data for this report, ESG conducted a comprehensive online survey of IT decision makers knowledgeable about the devices, data management tools, and data center infrastructure in use at their organizations. The survey was conducted between December 8, 2020 and December 31, 2020. All respondents were distributed among North America (35%), Europe (28%), the Asia Pacific region (23%), and Latin America (15%) and employed at midmarket organizations (i.e., those with 100-999 employees, 21%) and enterprises (i.e., those with 1,000+ employees, 79%). Both public and private sector organizations were represented. All respondents were provided an incentive to complete the survey in the form of cash awards and/or cash equivalents.

After filtering out unqualified respondents, removing duplicate responses, and screening the remaining completed responses (on a number of criteria) for data integrity, we were left with a final total sample of 2,000 professionals.

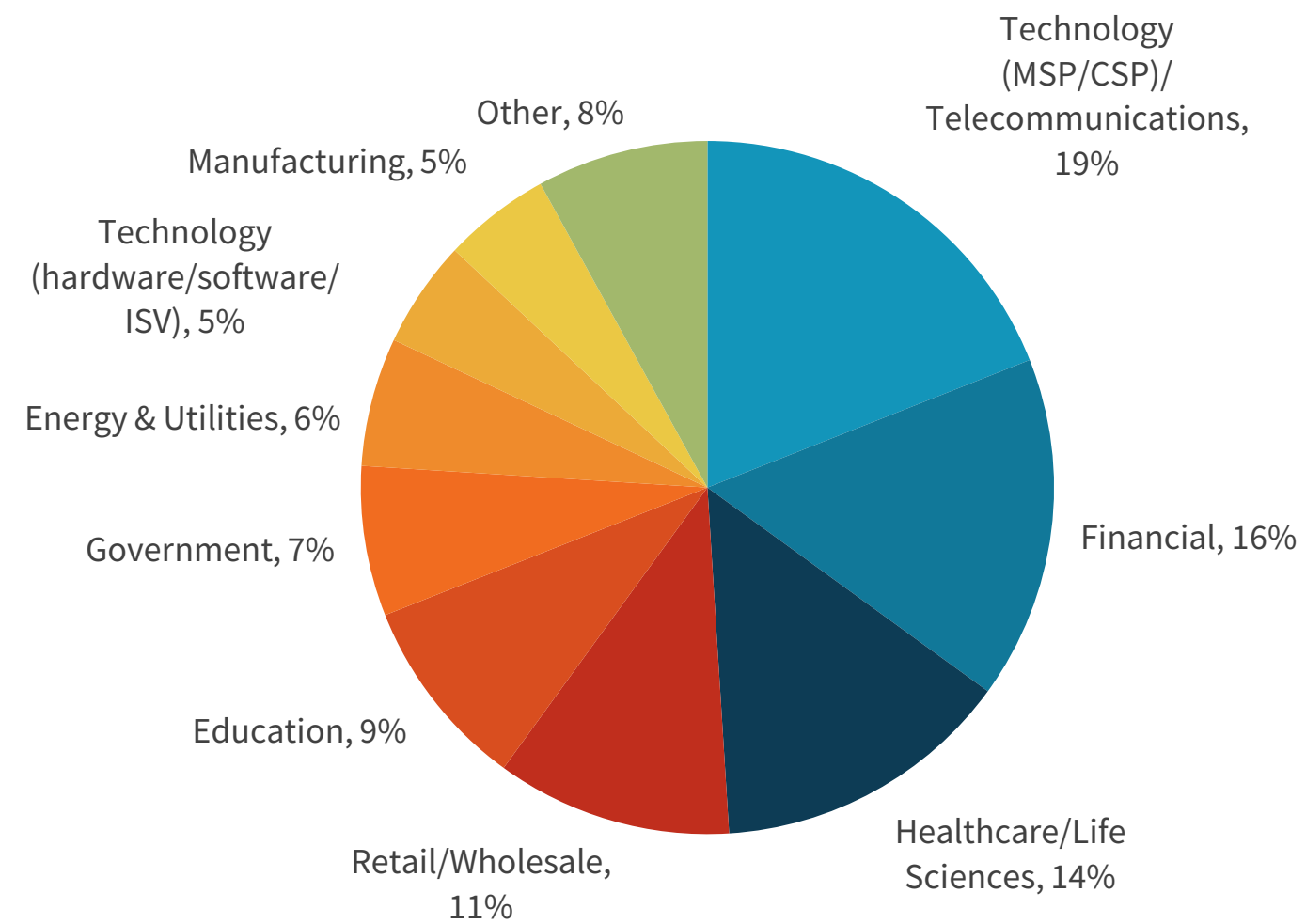
RESPONDENTS BY CURRENT JOB TITLE



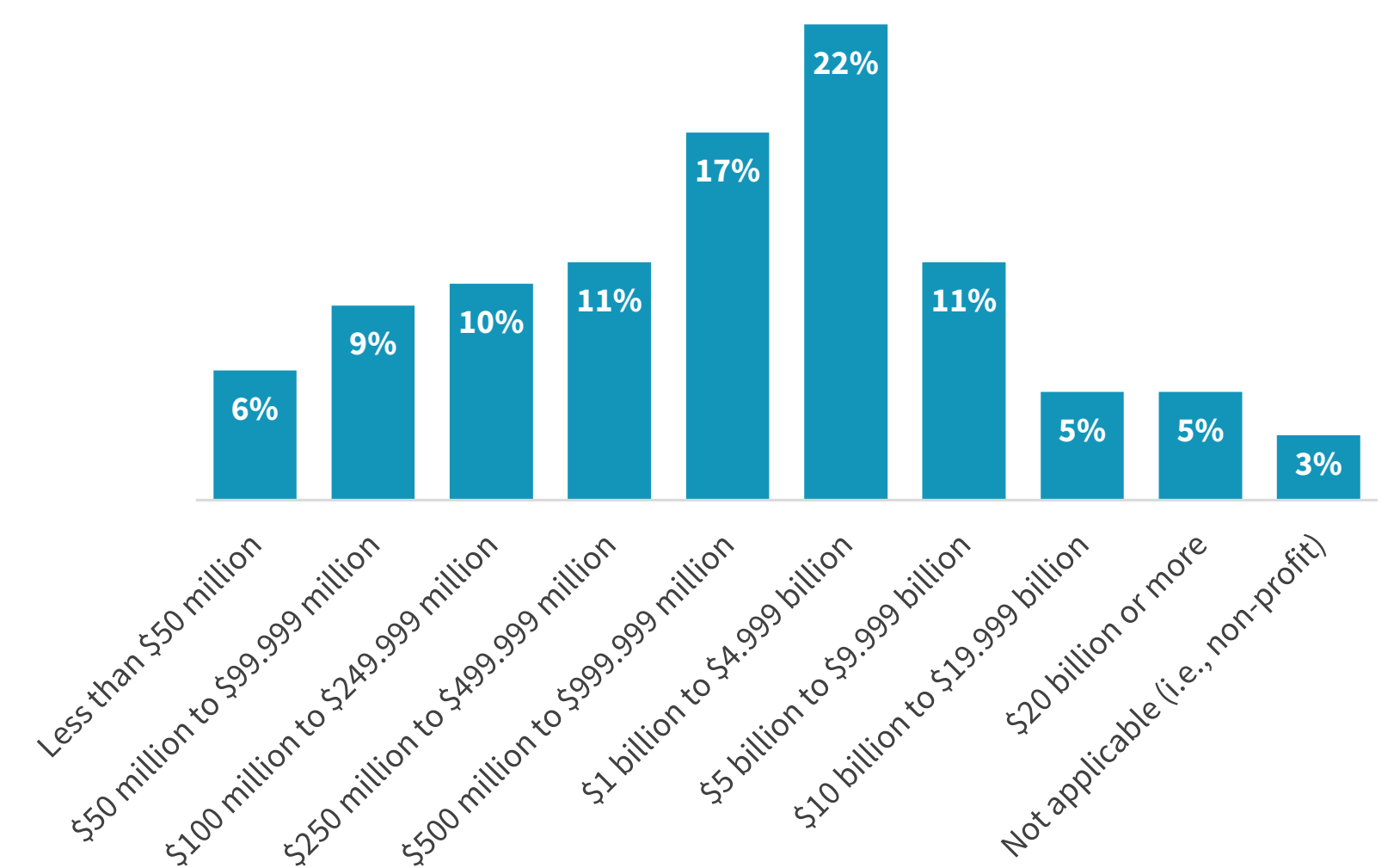
RESPONDENTS BY NUMBER OF EMPLOYEES



RESPONDENTS BY INDUSTRY



RESPONDENTS BY TOTAL ANNUAL REVENUE



Segmentation Questions

Below are the specific questions ESG used to identify which organizations are accelerating flexible IT delivery:

1. How much progress has the organization made delivering on-premises Infrastructure-as-a-Service (i.e., excluding public cloud hosted infrastructure).
 - i. **Threshold of an Accelerator:** Organization has made some or significant progress delivering on-premises Infrastructure-as-a-Service.
2. How are workload placement decisions made?
 - i. **Behavior of an Accelerator:** Workload placement decisions are centralized or guided by IT (versus being distributed to various line-of-business teams).
3. How many potential environments (data center, edge, public cloud, etc.) are typically evaluated as locations for workloads?
 - i. **Behavior of an Accelerator:** Many environments, both on-premises and in the public cloud, are evaluated as potential fits for workloads.
4. How much flexibility does the organization have to place workloads in an environment solely due to the environment's ability to deliver on the workload's requirements?
 - i. **Behavior of an Accelerator:** Workload placement decisions are made based on the best fit for the workload (as opposed to being influenced by factors beyond the environment's fit).
5. How has the number of infrastructure management tools changed at the organization over the last 12 months?
 - i. **Behavior of an Accelerator:** The organization has consolidated the number of infrastructure management tools in use over the last 12 months.

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