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ESG RESEARCH REPORT

2021 Technology Spending Intentions Survey

JANUARY 2021

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Executive Summary

ESG conducted an in-depth survey of 664 senior IT and business professionals concerning their organizations' IT spending plans and priorities for 2021. Survey participants represented midmarket (100 to 999 employees) and enterprise-class (1,000 employees or more) organizations in North America (United States and Canada) and Western Europe (United Kingdom, France, and Germany).

Based on the data collected from this survey, ESG concludes:

Enterprise technology spending is poised to recover from 2020 levels, driven by the need to retool IT capabilities and support business growth.

Six in ten organizations expect to increase their 2021 spending for IT products and services, equating to an average overall increase of 3.28%. Optimism was more common among North American and digitally transformed organizations, as well as those in the business services, telco and media, and life sciences sectors. The majority of organizations with increased 2021 IT investment plans anticipate spending more to implement long-term technology strategies that will provide a more flexible and resilient IT infrastructure in the event of future major business disruptions.

Public cloud services and cybersecurity are best positioned to benefit from a 2021 IT spending rebound as organizations continue to support and refine ongoing remote work strategies.

Public cloud services and cybersecurity are the two areas with the highest concentration of organizations anticipating heightened investment levels over the next 12 months. While cybersecurity is once again most commonly identified as organizations' top IT initiative, use of public cloud for applications and infrastructure, as well as improved mobility and remote work capabilities, gained ground year over year, likely due to the pandemic-fueled change in working conditions.

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Cybersecurity is a clear 2021 priority for business leaders.

Cybersecurity had already become a boardroom-level issue before COVID-19 caused unprecedented numbers of remote workers and related cyber-attacks. It follows then that nearly half of IT leaders identified strengthening cybersecurity as a business initiative that will drive significant technology spending in 2021. Likewise, it is not surprising that nearly half of organizations cite improvements in cybersecurity as critical to justifying IT investments over the next 12 months.

COVID-19 intensifies organizations' commitment to public cloud services.

Overall cloud usage has reached a point of near ubiquity, with 94% of organizations currently leveraging public cloud application and/or infrastructure services. Nearly half of organizations have shifted to a cloud-first policy using public cloud services in 2021, compared to 38% last year and only 29% in 2018. More than four in ten organizations have significantly accelerated the number of remaining on-premises applications and workloads that are public cloud candidates as a result of COVID-19.

There is an increasing desire among ITDMs to make their data centers more cloud-like.

There is still a sizeable footprint of on-premises applications and workloads, and many IT leaders are looking for ways to make their own data centers more cloud-like. Indeed, 48% of IT leaders say they would prefer to buy infrastructure via a consumption-based model such as a variable monthly subscription based on resource utilization, up from 42% last year. It is also worth noting that current IaaS users (that have experience with these services) are significantly more likely to convey a preference for a consumption-based model for their data center infrastructure.

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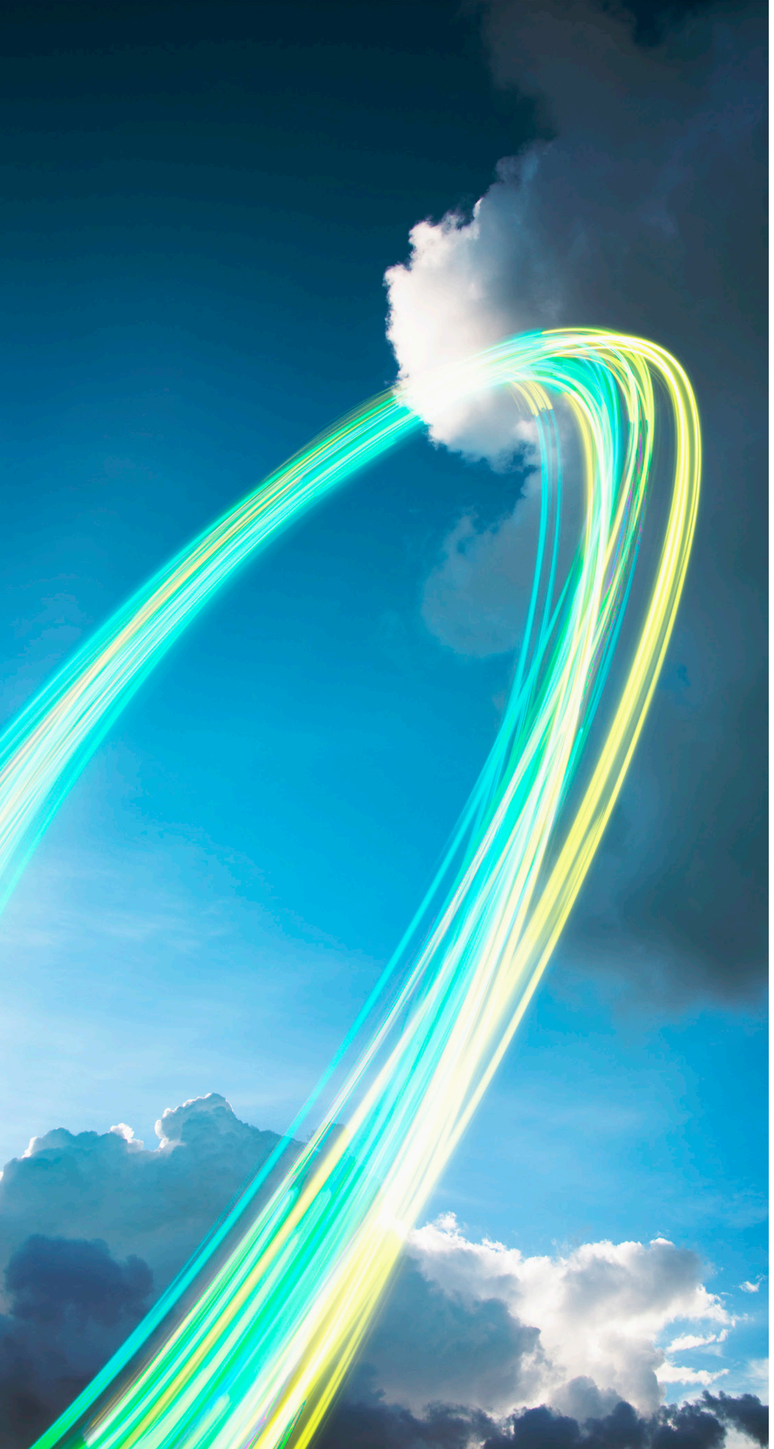

Digital transformation initiatives continue to gain momentum, with digitally mature companies pursuing more aggressive public cloud spending plans and strategies.

Nearly three-quarters of organizations report either having mature digital transformation initiatives or say that they are currently implementing and executing various digital transformation initiatives. For more than half, the primary goals include becoming more operationally efficient, with 49% citing the need to adopt digital tools and processes to allow users to interact and collaborate in new ways. More digitally transformed organizations were also significantly more likely to be users of public cloud applications and infrastructure, as well as more likely to spend more on these services over the next 12 months.

The rapid increase in the number of employees working remotely is a key driver of IT complexity and greater cybersecurity vulnerability.

Three-quarters of respondents believe that IT is more complex compared to two years ago, which is up from 64% in 2020. When asked to identify the top culprits behind this trend, nearly half pointed to the increase in remote workers resulting from COVID-19 work-from-home mandates. Indeed, more than four in ten respondents reported an increased volume of cybersecurity vulnerabilities as a result of remote workers in the fall of 2020.

Fortified authentication and employee monitoring are the most common priorities for transitioning remote workers back to brick-and-mortar offices.

Nearly half of respondents cite strengthening the means by which employees sign in/authenticate access to IT and business resources as a top priority when it comes to reopening physical offices. Regardless of where people are currently working, nearly half of senior IT decision makers report they have gotten pressure from business executives to increase employee monitoring at some point since the outset of the pandemic. Productivity and security were the most commonly cited reasons behind the increased monitoring requests.

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Research Objectives

In order to assess technology spending priorities over the next 12-18 months, ESG recently surveyed 664 IT and business professionals representing midmarket (100 to 999 employees) and enterprise-class (1,000 employees or more) organizations in North America and Western Europe. All respondents were personally responsible for or familiar with their organizations' 2020 IT spending, as well as their 2021 IT budget and spending plans, at either an entire organization level or at a business unit/division/branch level.

THE SURVEY WAS DESIGNED TO ANSWER THE FOLLOWING QUESTIONS:

What are organizations' general spending plans for IT products and services in 2021?

How does 2021 spending vary by company size, geographic region, 2021 IT budget, length of time an organization has been in operation, and industry?

What are the top IT focus areas for 2021, and how will the adoption of these trends vary year over year?

In what areas do organizations believe they currently have a problematic shortage of existing IT skills?

What business initiatives are currently having the greatest impact on IT spending? What factors will be most important in justifying IT investments to the business over the next 12 months?

What is the ongoing impact of the remote workforce and how is it impacting short- and long-term IT strategies?

Survey participants represented a wide range of industries including manufacturing, financial services, healthcare, communications and media, retail, government, and business services. For more details, please see the Research Methodology and Respondent Demographics sections of this report.

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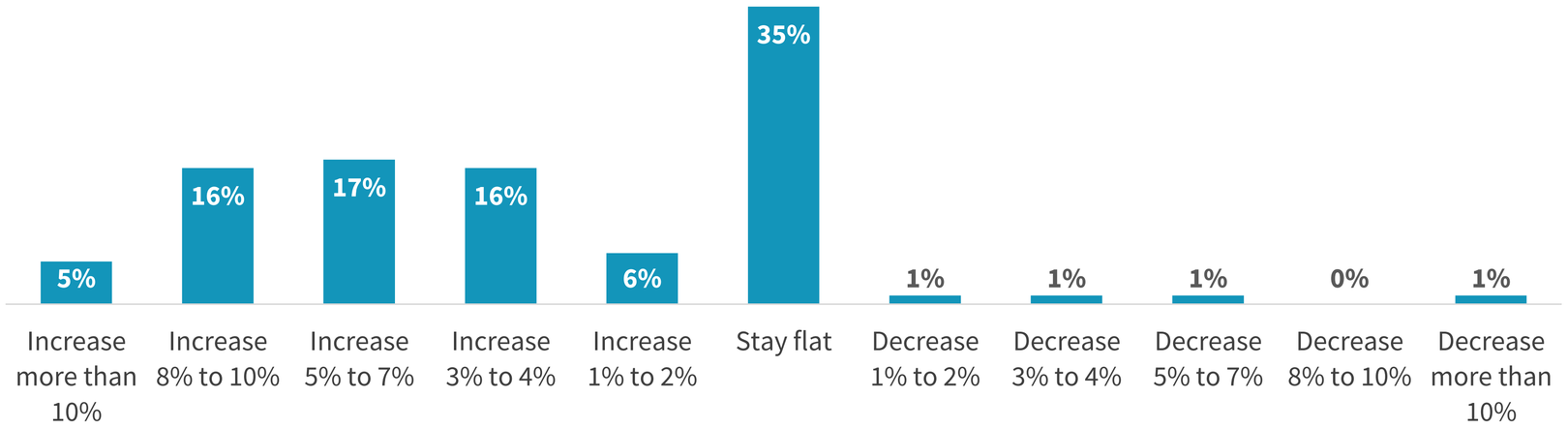
Enterprise technology spending is poised to recover from 2020 levels, driven by the need to retool IT capabilities and support business growth.

Six in ten IT organizations expect to increase spending from 2020 levels.

ESG's annual survey of senior IT decision makers reveals that 60% of organizations expect to increase their 2021 spending for IT products and services (see Figure 1). This equates to an overall average increase of 3.28%. From a company-size perspective, those companies in the midmarket segment are more positive about their expected 2021 IT budget spending, with a projected increase of 3.46% compared to enterprise organizations (+3.17%). Regionally, North American organizations expect to see an increase of 3.55% compared to only 2.67% of those based in Western Europe. Companies farther along in their digital transformation journey lead the charge, with a 4.33% uptick in IT spending compared to their less digitally mature counterparts, especially those with no digital transformation roadmap (+.15%).

Figure 1. Majority of IT Organizations Expect Increased 2021 Budgets

To what extent will your organization's total 2021 IT spending change—if at all—relative to your organization's actual (or projected actual) 2020 spending? (Percent of respondents, N=664)



Technology Spending Change Highlights

SPENDING INCREASE BY COMPANY SIZE

Enterprise: ↑ **3.17%**
Midmarket: ↑ **3.46%**

SPENDING INCREASE BY REGION:

North America: ↑ **3.55%**
Western Europe: ↑ **2.67%**

SPENDING INCREASE BY DTX MATURITY:

Mature: ↑ **4.33%**
Early stages: ↑ **3.20%**
Planning only: ↑ **2.05%**
Not on roadmap: ↑ **0.15%**

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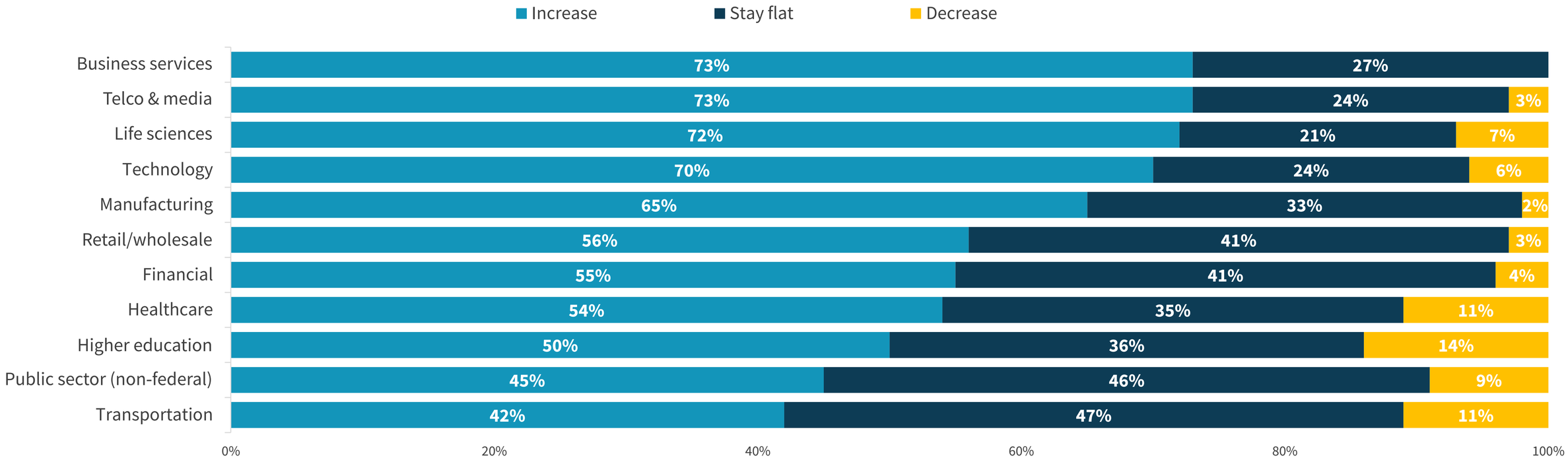
Telco and life sciences are the likeliest sectors to see increased 2021 IT spending.

From an industry perspective, nearly three-quarters (73%) of organizations in the business services and telco and media sectors expect to see increases in their 2021 IT budget levels (see Figure 2). In terms of other bullish industries, more than two-thirds of life sciences (72%) and technology (70%) organizations anticipate increasing their IT investments over the course of the next 12 months. At the other end of the spectrum, it's not surprising that transportation companies are most likely to flatten their budgets (47%), while 14% of respondents from higher education plan to decrease spending since these are verticals that are highly vulnerable to widespread lockdowns and mandatory social distancing measures.

Figure 2. Business Services, Telcos, and Life Sciences Are Most Likely to Increase 2021 Spending

2021 expected YoY IT budget change by industry.



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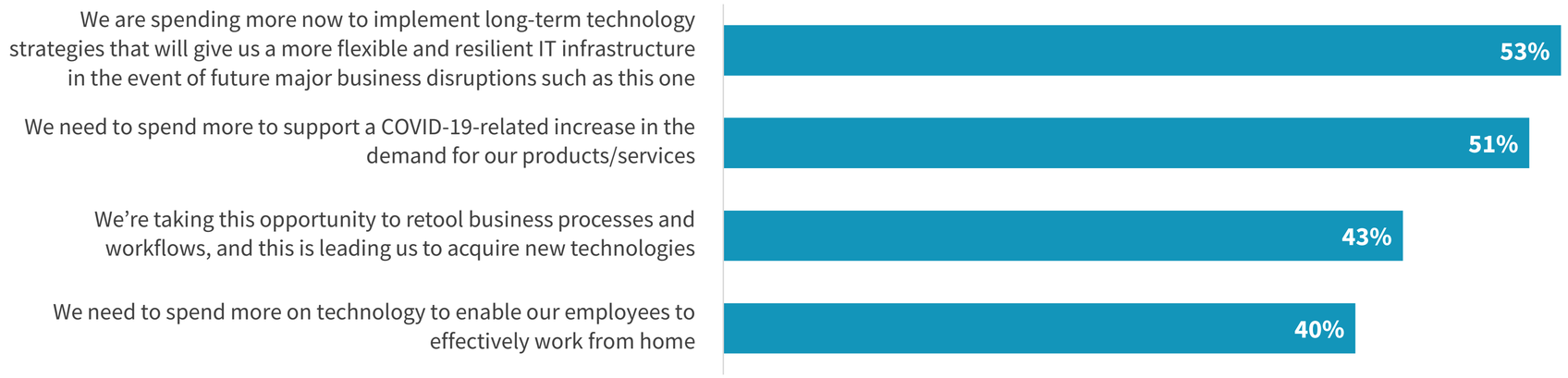
Agility and business growth are key drivers for increased 2021 technology spending.

The majority (53%) of organizations with increased 2021 IT investment plans anticipate spending more to implement long-term technology strategies that will provide a more flexible and resilient IT infrastructure in the event of future major business disruptions (see Figure 3). It's easy to understand why. The pandemic forced organizations to pivot quickly to meet new customer demands and adjust to emerging market realities. By increasing investment in technology that allows for greater agility and flexibility, companies hope to be better prepared for future uncertainties.

On a positive note, 51% of respondents need to spend more to support a COVID-19-related increase in the demand for products/services, a sign of anticipated business growth despite current economic challenges. Conversely, only 40% of organizations pointed to the need to spend more on technology to enable their employees to effectively work from home, down from 50% back at the outset of the COVID19-fueled office exodus. This indicates that a number of organizations have shifted out of reactive mode as the remote work situation has progressed, and they have subsequently figured out how to better support their employees.

Figure 3. Increased 2021 IT Spending Still Largely Attributed to Retooling IT Capabilities Spending

Why do you think your organization's 2021 technology spending will grow compared to its actual 2020 IT spending? (Percent of respondents, N=399, multiple responses accepted)



> ***"Only 40% of organizations pointed to the need to spend more on technology to enable their employees to effectively work from home,*** *down from 50% back at the outset of the COVID-19-fueled office exodus."*

We need to **spend more** on technology to enable our employees to effectively work from home:

SPRING 2020	FALL 2020
50%	40%

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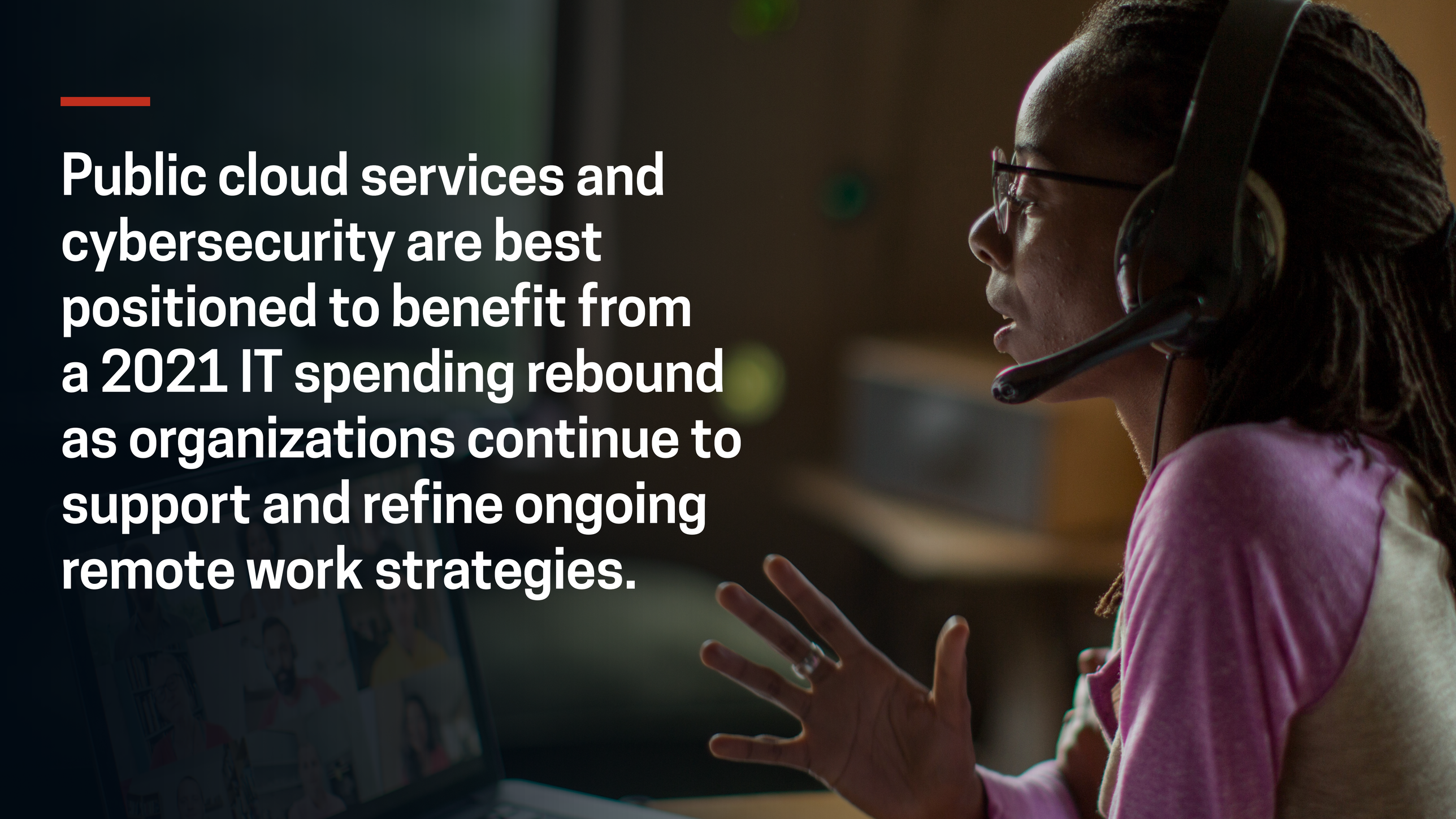

Public cloud services and cybersecurity are best positioned to benefit from a 2021 IT spending rebound as organizations continue to support and refine ongoing remote work strategies.

More than two-thirds (68%) of respondents expect their organizations to increase investment in public cloud infrastructure services, *and 63% of respondents anticipate a budgetary boost for public cloud applications.*

2021 spending will increase:

PUBLIC CLOUD INFRASTRUCTURE SERVICES

68%

PUBLIC CLOUD APPLICATIONS

63%

Organizations are most bullish about cloud and cybersecurity spending…

Which technology segments are likeliest to benefit from the generally positive 2021 IT spending outlook? According to Figure 4, public cloud services and cybersecurity are the two areas with the highest concentration of organizations anticipating heightened investment levels over the next 12 months. Specifically, more than two-thirds (68%) of respondents expect their organizations to increase investment in public cloud infrastructure services, and 63% of respondents anticipate a budgetary boost for public cloud applications. While cloud usage has been steadily increasing over the last several years, it is not surprising to see renewed commitment to these burgeoning technology strategies in the wake of COVID-19. One possible explanation for this increase is that public cloud solutions can support greater online collaboration and real-time communication among remote workers. Additionally, from an IT operations perspective, they provide greater resiliency in terms of business continuance, including remote monitoring and management capabilities, which allows IT staff to adhere to work-from-home mandates.

The other area earmarked for greater investment: cybersecurity. Indeed, 66% of survey respondents plan to increase their cybersecurity spending as cyber-attacks multiply, threats become increasingly sophisticated, and more employees work outside the safety of corporate firewalls.[1] Given the increasing reliance on public cloud services, it follows that the two most common specific security-related spending increases are related to cloud infrastructure (59%) and cloud application (56%) security solutions.

[1] Source: ESG Research Report, *The Impact of the COVID-19 Pandemic on Cybersecurity,* July 2020.

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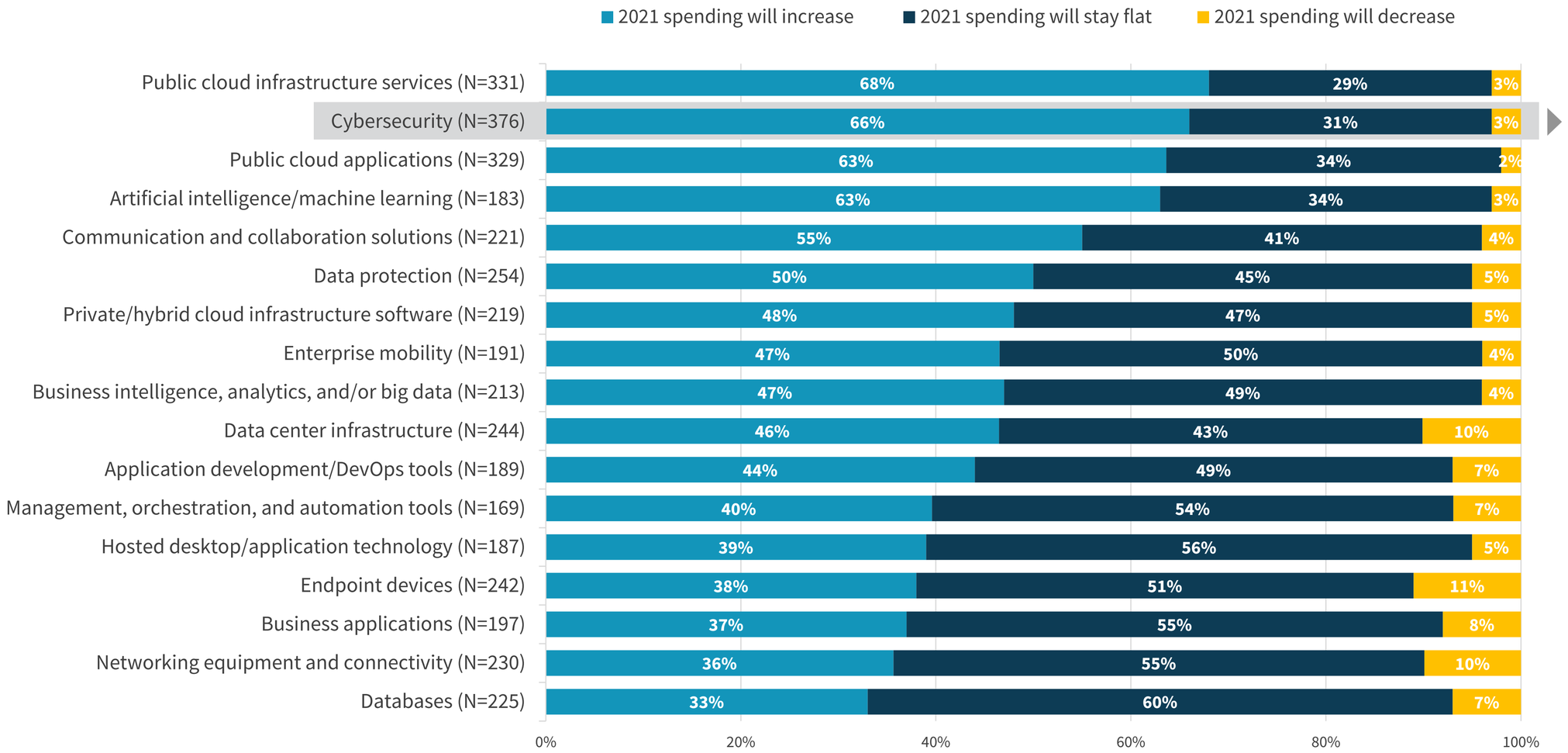
Figure 4. Cloud and Cybersecurity Are Likeliest Beneficiaries of 2021 Spending Boost

To the best of your knowledge, to what extent will your organization's 2021 IT spending for each technology listed below change—if at all—relative to actual (or projected actual) 2020 spending? (Percent of respondents)



Cloud Is Top 2021 Cybersecurity Spending Priority

2021 spending will increase:

CLOUD INFRASTRUCTURE SECURITY

59%

CLOUD APPLICATION SECURITY

56%

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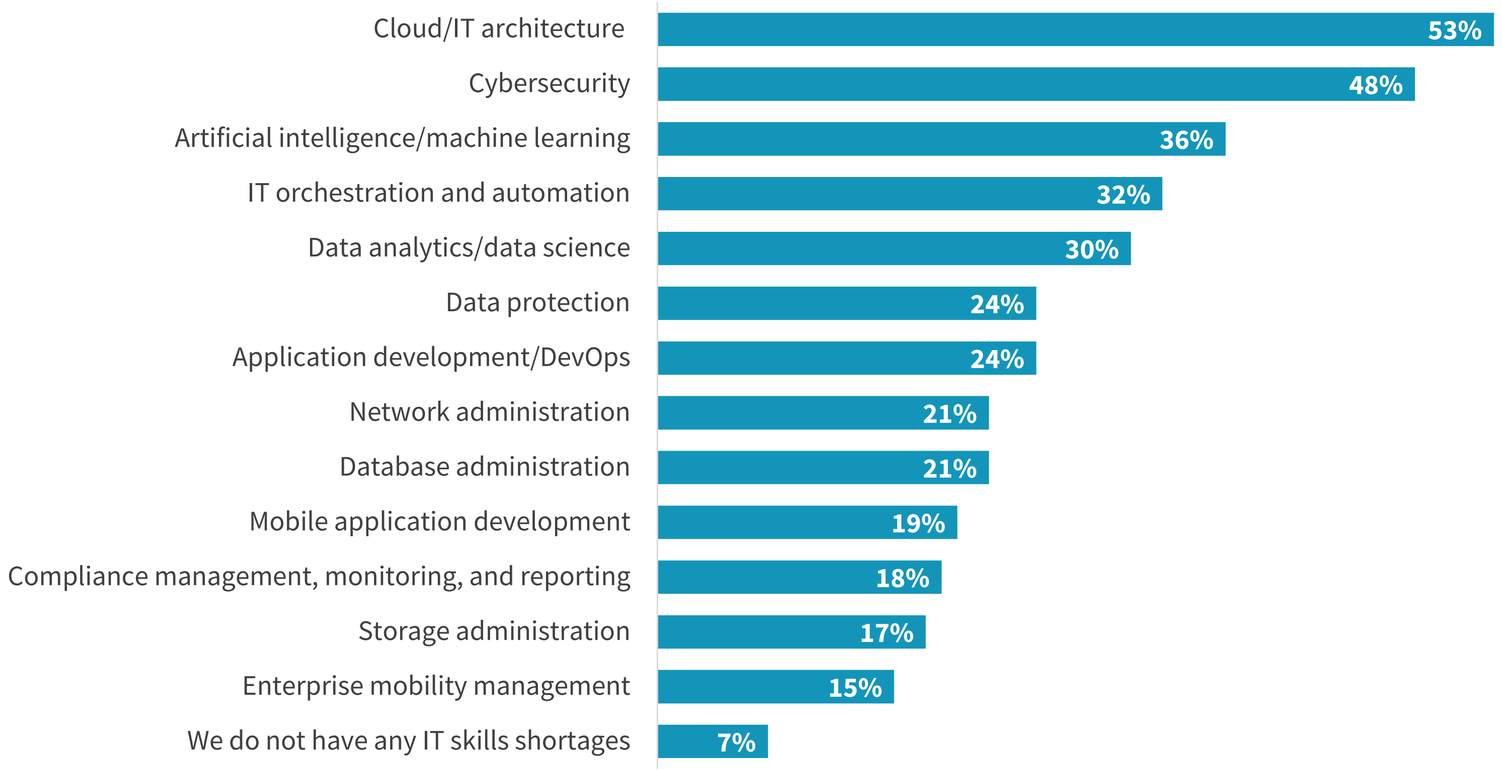
…and also identify these as being most common areas of skills shortage.

Cloud and cybersecurity also sit atop the list of areas in which senior IT decision makers report their organizations have a problematic shortage of IT skills. Specifically, more than half (53%) of survey respondents identify cloud architecture as an area in which they lack trained personnel, with 48% citing cybersecurity (see Figure 5). More than a third (36%) of respondents also cite a shortfall of talent when it comes to artificial intelligence/machine learning, despite the fact that 63% of organizations plan to increase IT spending on these capabilities in 2021. However, unlike cybersecurity and cloud architecture that require complementing technology solutions with competent human practitioners, AI vendors are prioritizing enablement by developing easier-to-consume AI solutions and tools that enable organizations to leverage AI while mitigating the lack of qualified support. Ironically, by mimicking the cognitive functions of humans, AI has gained traction in the business world, as companies look to capitalize on it in a number of ways, from improving operational efficiency, through better protecting against cybersecurity threats, to improving customer satisfaction.

Figure 5. Cloud Architecture and Cybersecurity Are Most Common Areas of Skills Shortage

In which of the following areas do you believe your IT organization currently has a problematic shortage of existing skills? (Percent of respondents, N=654, multiple responses accepted)



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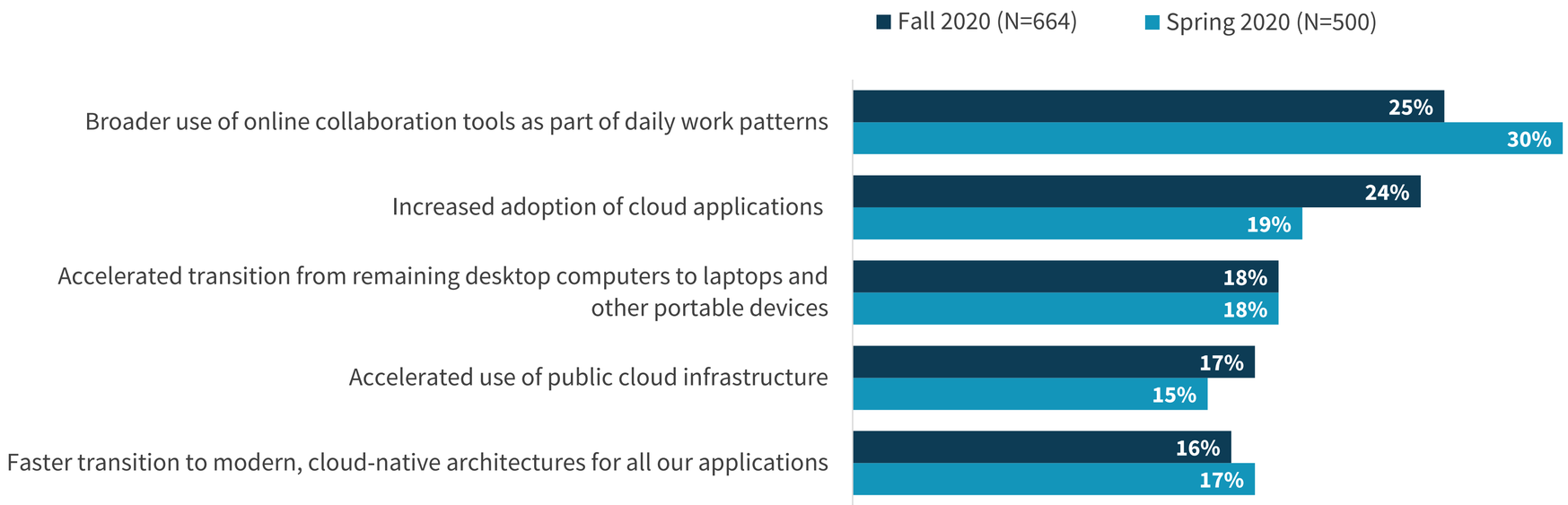
The longer-term effects of COVID-19 are tied to digital collaboration and cloud strategies.

Although COVID-19 continues to shape all aspects of business, the plurality of ESG's survey respondents expect that the most significant lasting impact on longer-term IT strategy will be the broader use of online collaboration tools as part of daily work patterns (see Figure 6). But while 30% of respondents noted increased online collaboration in the spring of 2020 at the outset of the mass work-from-home shift, a smaller percentage (25%) did so by fall of the same year, a decline likely due to cloud's contribution to preparing organizations for longer-term remote work arrangements and improved continuity of operations capabilities.

Figure 6. Digital Collaboration and Public Cloud Are Expected to Be the Most Significant Lasting Technology Legacies of COVID-19

What do you believe will be the most significant lasting impact of the current COVID-19 business disruption on your organization's longer-term IT strategy? (Percent of respondents, percent ranked #1 displayed)



> *"ESG's survey respondents expect that the most significant lasting impact on longer-term IT strategy* ***will be the broader use of online collaboration tools as part of daily work patterns."***

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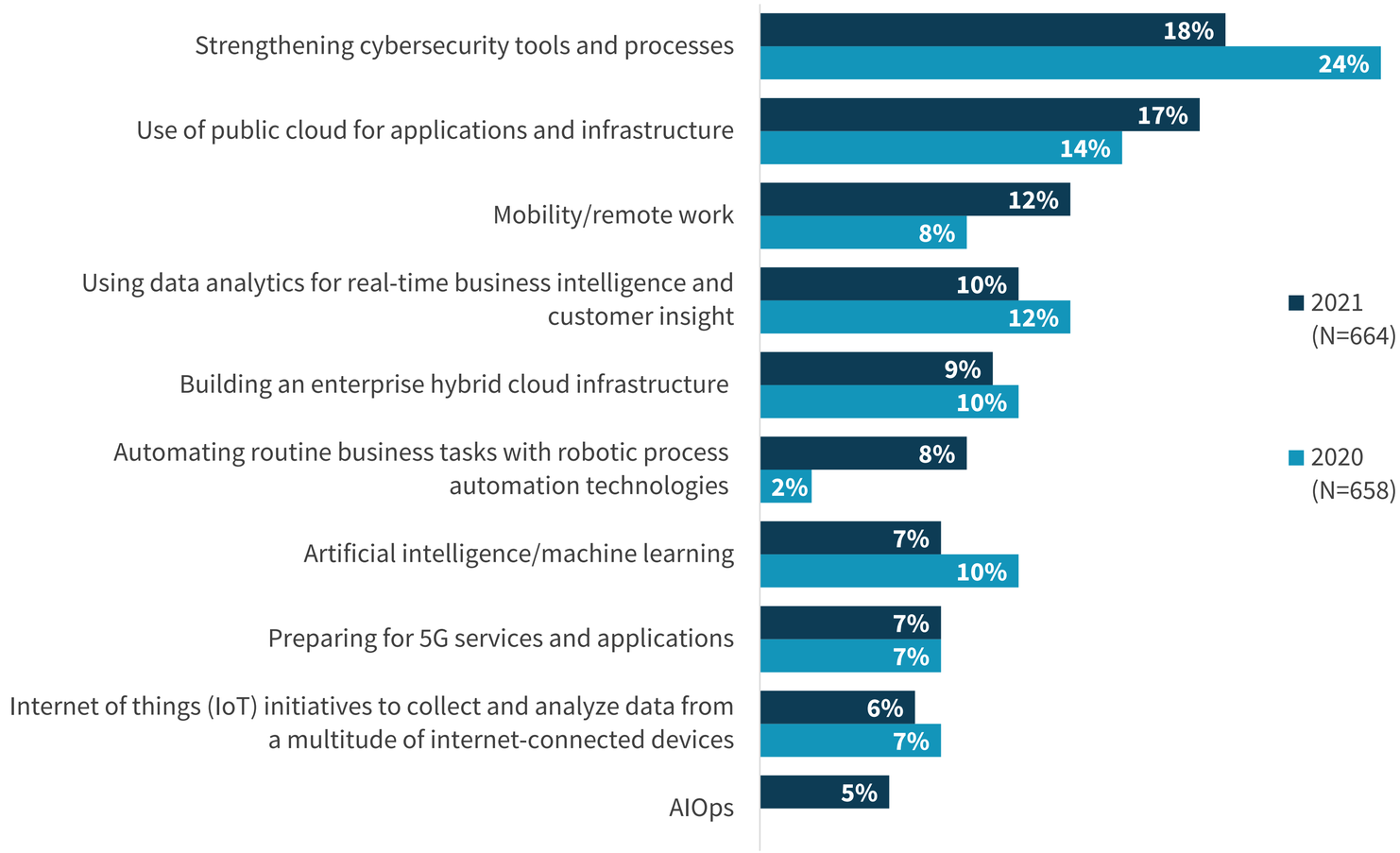
IT priorities evolve as remote work becomes the norm and organizations look to automate workflows.

Shorter-term technology priorities are also shifting from year to year as new requirements—and opportunities—arise. Case in point: While only 2% of respondents cited automating routine business tasks with robotic process automation technologies as their most important initiative in 2020, that figure quadrupled to 8% for 2021 (see Figure 7). And while cybersecurity is once again most commonly identified as organizations' top IT initiative, other trends gaining ground year over year, likely due to the pandemic-fueled change in working conditions, include mobility and remote work capabilities (8% to 12%), as well as use of public cloud for applications and infrastructure (14% to 17%).

Figure 7. Cybersecurity, Cloud, and Mobility Are the Top IT Focus Areas for 2021

The IT initiatives listed below are among some of the most widely publicized and discussed technology meta-trends today. Which of these initiatives will be the most important for your organization over the course of 2021? (Percent of respondents, percent ranked #1 displayed)



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Cybersecurity is a clear 2021 priority for business leaders.

Projects that support secure and collaborative productivity will be funded in 2021.

For any investment to be made in IT, it must first earn the approval of an organization's business management team. Given the increasingly dangerous cybersecurity landscape of the last several years, which has been exacerbated by pervasive work-from-home mandates stemming from COVID-19 in early 2020, it follows that nearly half (47%) of organizations cite improvements in cybersecurity as critical to justifying IT investments over the next 12 months (see Figure 8). However, cybersecurity wasn't the only implication stemming from significant swathes of employees suddenly working outside the confines of their offices. In addition to ensuring employees had the tools and processes to work securely, IT departments were also tasked with making sure remote working conditions mirrored those of being in the office as much as possible, including interacting with colleagues. As such, increases in employee productivity (35%), improvements in digital collaboration capabilities (30%), and advances in digital transformation (30%) will also enable IT teams to make a strong business case for investment over the coming year as they continue to support work-from-home efforts.

Figure 8. Cybersecurity and Productivity Are Key to Getting IT Investments Justified

Which of the following considerations do you believe will be most important in justifying IT investments to your organization's business management team over the next 12 months? (Percent of respondents, N=664, five responses accepted)

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Nearly half of organizations see fortifying cybersecurity as a business issue driving technology spending.

Business initiatives are also helping to drive greater investment in technology solutions. Cybersecurity had already become a boardroom-level issue before COVID-19 caused unprecedented numbers of remote workers and related cyber-attacks. It follows then that nearly half (47%) of IT leaders identified strengthening cybersecurity as a business initiative that will drive significant technology spending in 2021 (see Figure 9). Other top initiatives include improving data analytics for real-time business intelligence and customer insights (37%), as well as internal collaboration capabilities (33%) and/or employee experience (30%).

Figure 9. Cybersecurity and Employee Experience Are Most Common Business Initiatives Driving Technology Spending

Which of the following business initiatives do you believe will drive the most technology spending in your organization over the next 12 months?
(Percent of respondents, N=664, five responses accepted)

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COVID-19 intensifies organizations' commitment to public cloud services.

Public cloud adoption is ubiquitous and extent of usage continues to grow.

In addition to gauging the spending plans and business drivers for investment over the course of 2021, ESG wanted to maintain its ongoing yearly assessment of the public cloud services market from an adoption and breadth-of-usage perspective. In terms of adoption, overall cloud usage has reached a point of near ubiquity, with 94% of organizations currently leveraging public cloud services (see Figure 10). This includes public cloud infrastructure, with more than three-quarters (78%) currently using these services (see Figure 11). It is notable that not only has IaaS usage nearly doubled over the last five years, but since 2011—when ESG first started tracking it—adoption of public cloud infrastructure has more than quadrupled.

Figure 10. Public Cloud Service Usage Is Nearly Ubiquitous

94%

Currently use public cloud services

Figure 11. Public Cloud Infrastructure Adoption Has Almost Doubled in Five Years

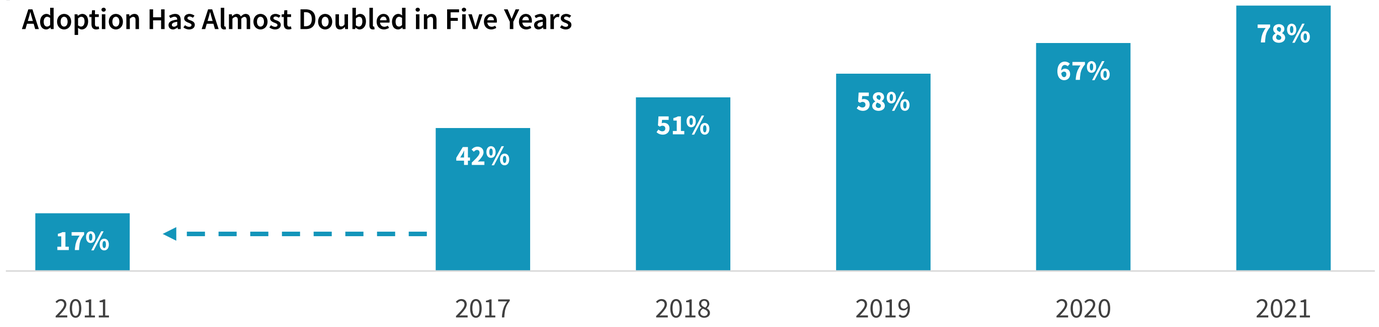
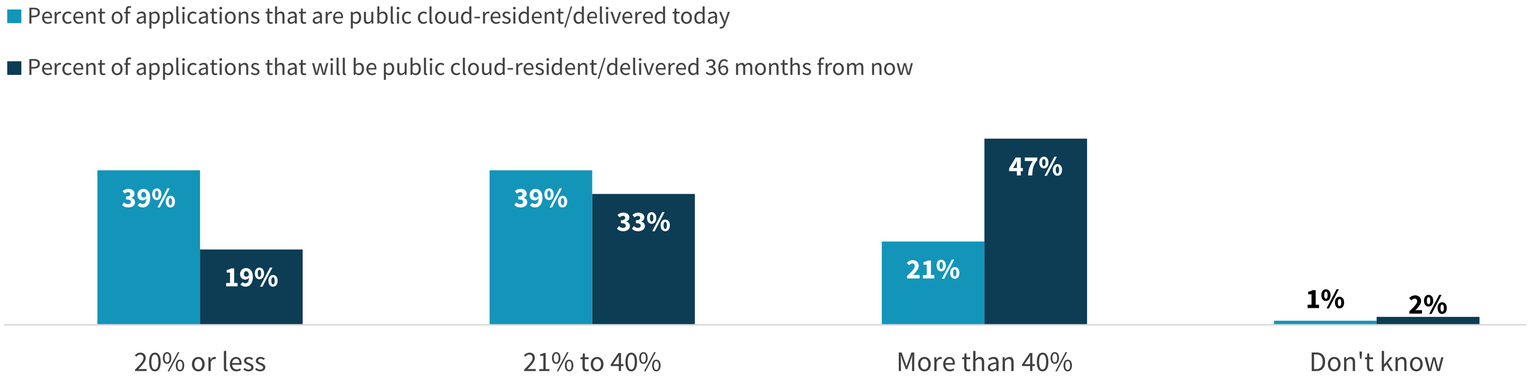


Figure 12. More Applications Expected to Be Cloud-based within Three Years



As far as extent of usage, Figure 12 reveals that nearly a quarter (21%) of respondents report that more than 40% of the total applications their organizations rely on are currently public cloud-resident (i.e., SaaS and/or custom applications that run on public cloud infrastructure). However, the percentage of these organizations will more than double (47%) over the next 36 months.

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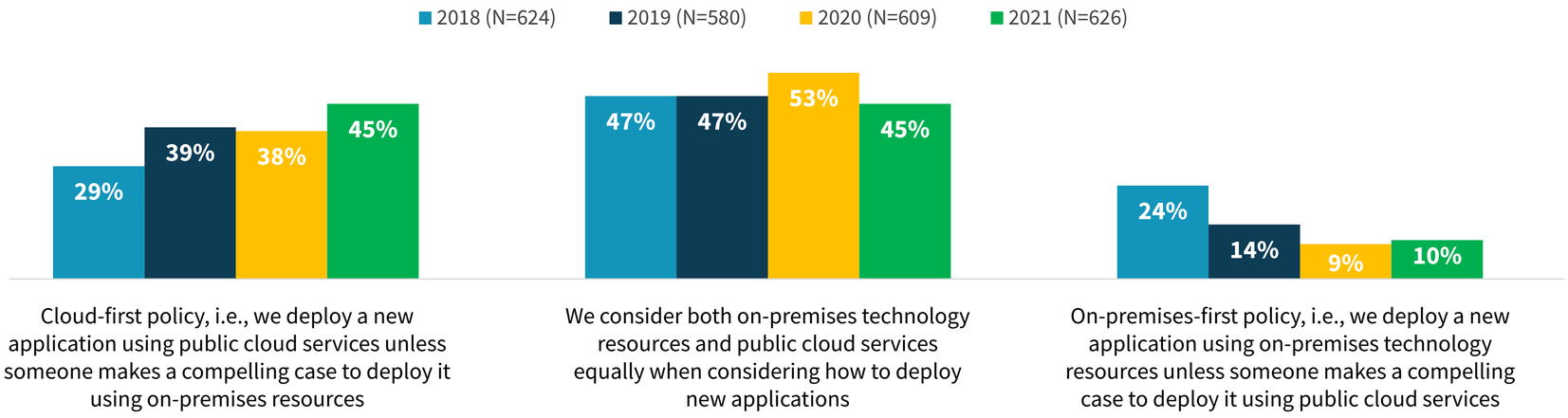
Nearly half of organizations now have a cloud-first strategy, with greater prevalence among younger and remote-ready companies.

To better gauge the role of public cloud services as part of an overall IT strategy, respondents were asked to consider the approach their organization typically takes when it comes to new application deployments. Nearly half (45%) of organizations consider both on-premises and public cloud services equally. But that is changing, as 45% of organizations have shifted to a cloud-first policy compared to 38% last year and only 29% in 2018 (see Figure 13). A cloud-first approach is particularly prevalent among younger organizations that were likely founded during the years that cloud services were gaining traction as a legitimate alternative to traditional on-premises IT, as well as those with a higher percentage of remote workers. The latter is significant because of the connection between an organization's cloud strategy and its "remote readiness," meaning its ability to support employees' work requirements regardless of location.

Figure 13. Cloud-first Application Deployment Strategies Continue to Gain Ground

Which of the following business initiatives do you believe will drive the most technology spending in your organization over the next 12 months? (Percent of respondents, N=664, five responses accepted)



Percent of organizations with a cloud-first policy based on:

AGE OF ORGANIZATION:

10 years or less: **48%**

11 to 50 years: **47%**

More than 50 years: **36%**

PERCENT OF REMOTE WORKERS:

>70% remote workers: **53%**

41% to 70% remote workers: **45%**

40% or less remote workers: **38%**

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The pandemic has caused organizations to accelerate cloud usage.

This shift toward cloud will only accelerate, as organizations reveal that more than three-quarters (79%) of remaining on-premises workloads are cloud candidates and could be moved to the cloud over the next five years (see Figure 14).

As discussed previously, current business conditions (and those of the last six months) are central to this migration to the cloud. Indeed, according to Figure 15, 41% of survey respondents have significantly accelerated the number of remaining on-premises applications and workloads that are cloud candidates, as their organizations seek out IT infrastructure capable of supporting online collaboration and communication platforms for remote workers.

Figure 14. More Workloads Are Expected to Move to the Cloud over the Next Five Years

Think about all of the applications and workloads that your organization currently runs in your on-premises data centers. What percentage of these workloads are/aren't candidates to move to public cloud services over the next five years? (Percent of respondents, N=664)

On average, nearly 8 in 10 remaining on-premises workloads could move to public cloud in next 5 years.

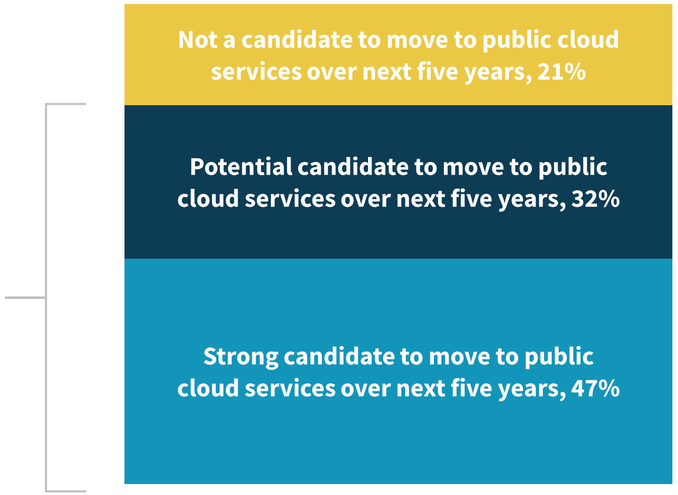
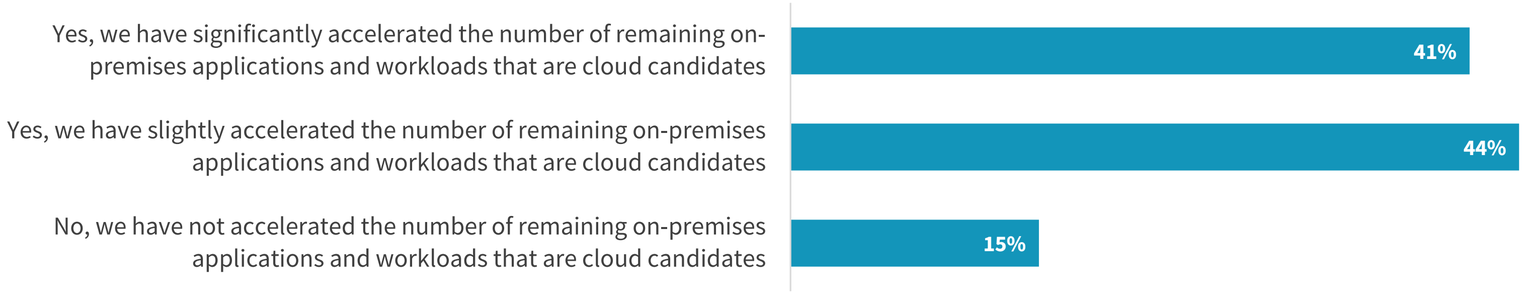


Figure 15. Events of the Last Six Months Have Accelerated Public Cloud Usage

Have current business conditions (and those of the last six months) caused your organization to accelerate the number of remaining on-premises applications and workloads that are cloud candidates? (Percent of respondents, N=664)



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There is an increasing desire among ITDMs to make their data centers more cloud-like.

Applying the cloud consumption model to data center infrastructure continues to gain momentum, especially among current IaaS users.

Clearly public cloud momentum has been building for more than a decade, with the events of 2020 only serving to reinforce the importance of and commitment to these strategies. However, there is still a sizeable footprint of on-premises applications and workloads, and many IT leaders are looking for ways to make their own data centers more cloud-like, such as applying cloud consumption models to on-premises infrastructure. Specifically, 48% of IT leaders—regardless of current IaaS usage—say they would prefer to buy infrastructure via a consumption-based model such as a variable monthly subscription based on resource utilization, up from 42% last year (see Figure 16). It is also worth noting that current IaaS users are significantly more likely (53% versus 38%) to convey a preference for a consumption-based model for their data center infrastructure (see Figure 17). It makes sense that these organizations with public cloud infrastructure experience would be at the forefront of integrating as many of the capabilities and benefits associated with the IaaS model as possible—especially resource provisioning and consumption—from the public cloud model into their on-premises environments to bolster hybrid cloud strategies.

Figure 16. Growing Preference to Shift Data Center Infrastructure to OpEx Model

Assuming the net-cost was the same, which of the following do you believe would be your organization's preferred payment model for on-premises data center infrastructure? (Percent of respondents)

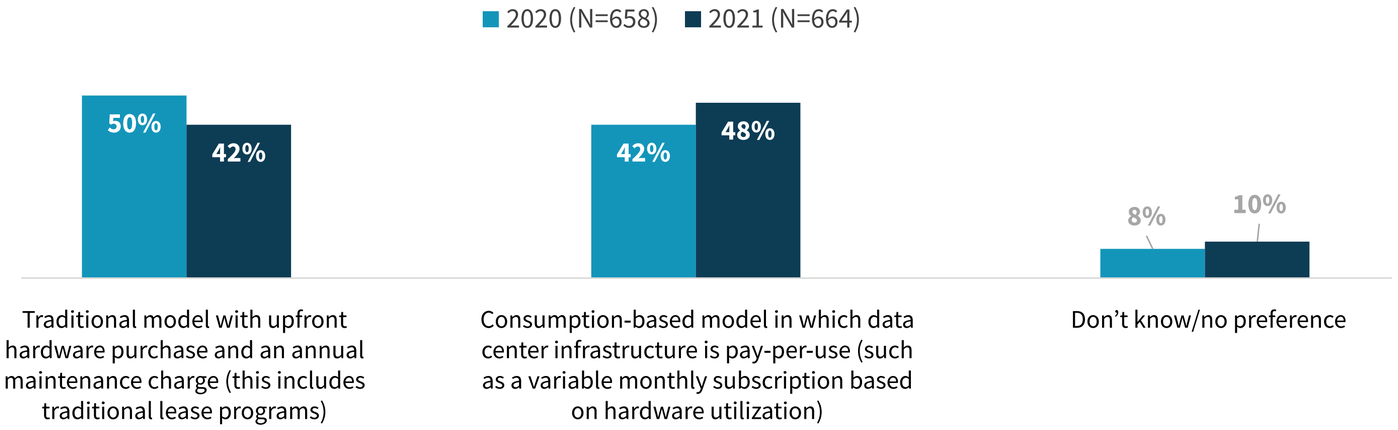

Figure 17. Current IaaS Users Much Likelier to Prefer Shifting Data Center Infrastructure to OpEx Model

Percent of organizations that prefer a consumption-based model for data center infrastructure, by IaaS usage status. (Percent of respondents)

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Digital transformation initiatives continue to gain momentum, with digitally mature companies pursuing more aggressive public cloud spending plans and strategies.

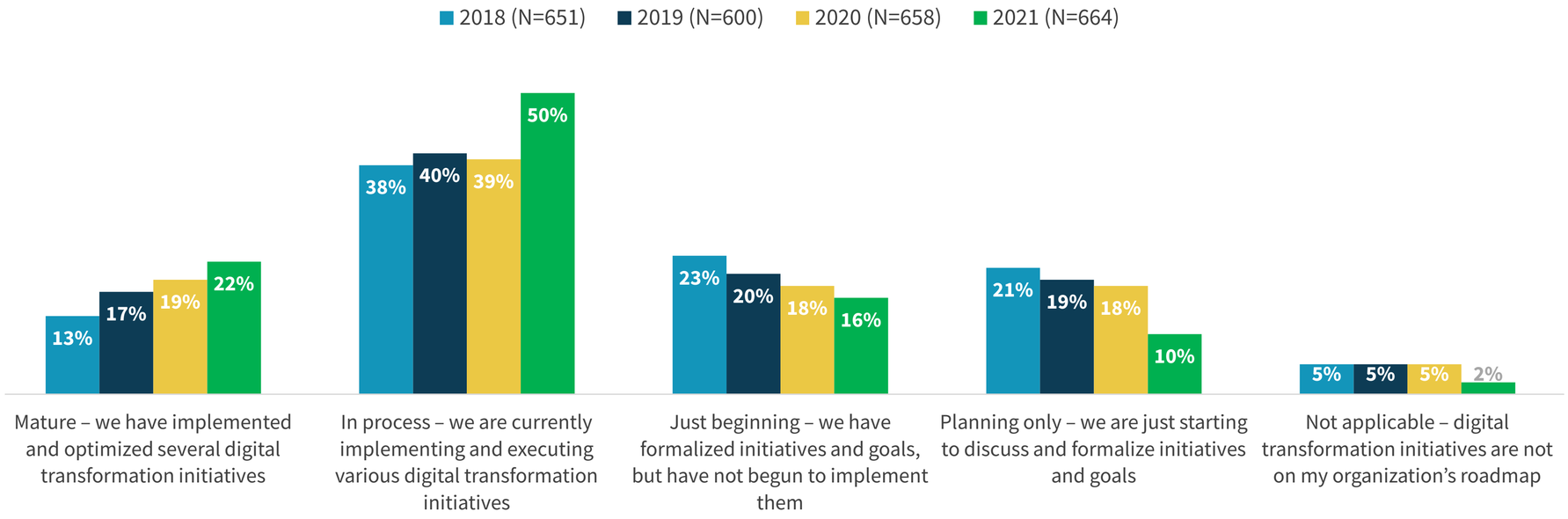
> ***Nearly three-quarters of organizations*** *report either having mature digital transformation initiatives or that they are currently implementing and executing various digital transformation initiatives.”*

COVID-19 and the cloud are catalysts for digital transformation, as organizations pursue greater operational efficiencies, collaboration, and customer experience.

COVID-19 continues to drive digital transformation momentum as organizations increasingly turn to technology in an effort to support remote workers, meet emerging customer demands, and pivot to new business models. In fact, nearly three-quarters of organizations report either having mature digital transformation initiatives or that they are currently implementing and executing various digital transformation initiatives, compared to only 58% last year (see Figure 18).

Figure 18. Year-over-year Digital Transformation Progress Gets COVID-19 Boost

Which of the following best describes your organization’s digital transformation initiatives? (Percent of respondents)



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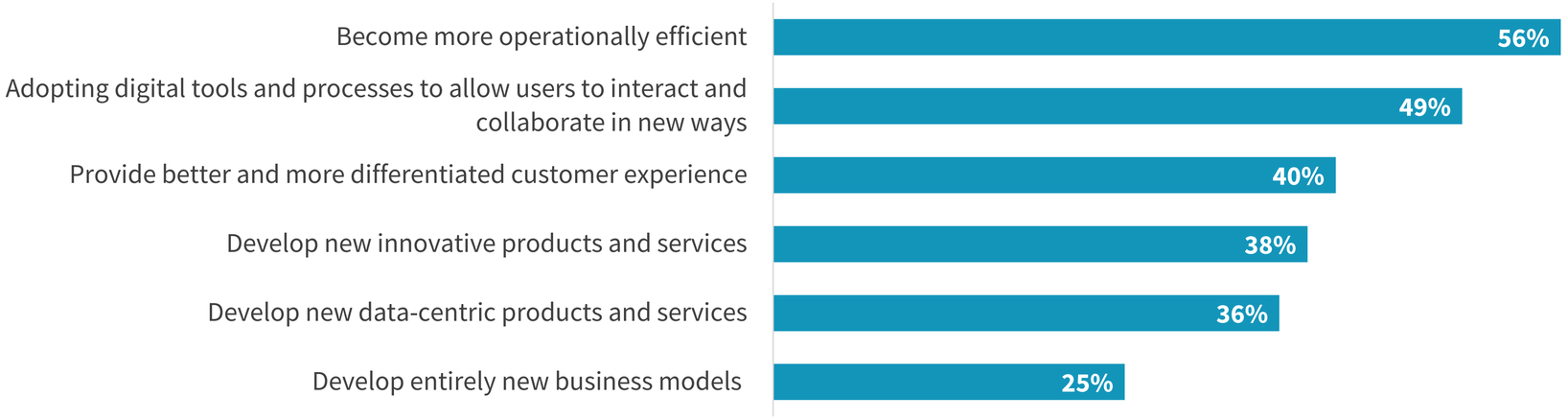
So what do organizations hope to accomplish by accelerating their digital transformation journey? For more than half (56%), the primary goal is becoming more operationally efficient, with 49% citing the need to adopt digital tools and processes to allow users to interact and collaborate in new ways and 40% citing the need to provide a better and more differentiated customer experience (see Figure 19).

Figure 19. Operational Efficiency and Digital Collaboration Are Most Common Objectives for Digital Transformation

What are your organization's most important objectives for its digital transformation initiatives? (Percent of respondents, N=650, three responses accepted)



These objectives align well with industry verticals in terms of which objective was cited by the greatest percentage of organizations in a given sector. For example, half of respondents in the retail/wholesale sector view enhancing customer experience as a primary goal, as consumers increasingly demand wider product selection and faster service in today's contactless economy. Those in healthcare, on the other hand, prioritize the adoption of digital tools and processes that support new approaches to collaboration as the sector grapples with the global pandemic and rolls out telemedicine alternatives to face-to-face interactions.

Top Industry Vertical per Digital Transformation Objective:

DEVELOP ENTIRELY NEW BUSINESS MODELS:
Technology **(30%)**

DEVELOP NEW DATA-CENTRIC PRODUCTS AND SERVICES:
Financial and telco **(41%)**

DEVELOP NEW INNOVATIVE PRODUCTS AND SERVICES:
Business services **(46%)**

PROVIDE BETTER AND MORE DIFFERENTIATED CUSTOMER EXPERIENCE:
Retail/wholesale **(50%)**

ADOPTING DIGITAL TOOLS AND PROCESSES TO ALLOW USERS TO INTERACT AND COLLABORATE IN NEW WAYS:
Healthcare **(56%)**

BECOME MORE OPERATIONALLY EFFICIENT:
State & local government **(70%)**

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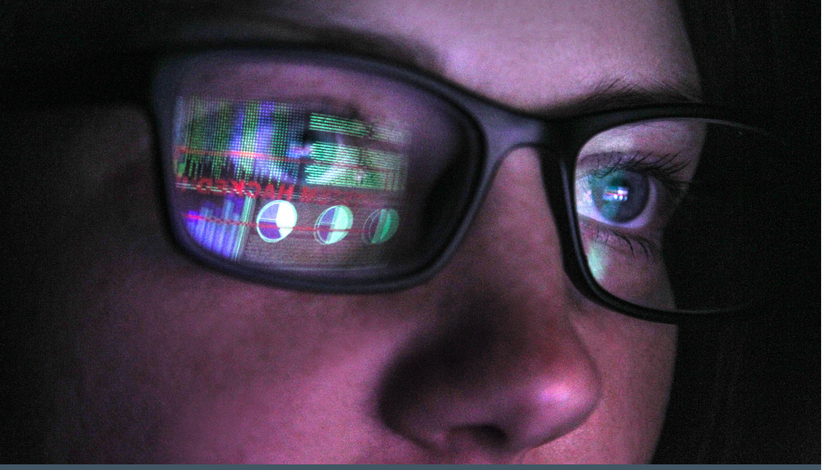

There is a strong connection between cloud usage and digital transformation maturity.

It is worth noting the consistently strong correlation between organizations with more established digital transformation initiatives and cloud usage. Figure 20 reveals that an overwhelming majority (98%) of organizations high on the digital transformation maturity curve currently use public cloud infrastructure services, and more than half (54%) of these respondent organizations have a cloud-first policy in place when it comes to deploying new applications. Additionally, these more digitally mature organizations are significantly more likely than those merely at the planning stages of these initiatives to be increasing both IaaS (76% versus 54%) and SaaS (72% versus 41%) spending in 2021.

Figure 20. The Cloud and Digital Transformation Connection

Digital Transformation Maturity Level

	MATURE	EARLY STAGES	PLANNING ONLY
Percent of organizations currently using public cloud infrastructure services (IaaS)	98%	74%	60%
Percent of organizations that have a cloud-first policy	54%	42%	44%
Percent of organizations increasing 2021 public cloud infrastructure (IaaS) spending	76%	67%	54%
Percent of organizations increasing 2021 public cloud application (SaaS) spending	72%	62%	41%
Percent of organizations that significantly accelerated the number of remaining on-premises applications and workloads that are cloud candidates because of COVID-19	61%	36%	39%
Percent of remaining on-premises workloads that are strong public cloud candidates	59%	45%	40%

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The rapid increase in the number of employees working remotely is a key driver of IT complexity and greater cybersecurity vulnerability.

Three-quarters believe IT complexity has increased in the past two years, fueled by remote workers and data issues.

Even with the plethora of available technology solutions, IT is still a challenge for many organizations. And it's only getting worse, compounded by the last nine months of 2020. Overall, Figure 21 reveals that 75% of respondents believe that IT is more complex compared to two years ago, which is up from 64% last year. When asked to identify the top culprits behind this trend, nearly half (49%) pointed to the increase in remote workers resulting from COVID-19 work-from-home mandates (see Figure 22). Other contributors to heightened IT complexity include new data security and privacy regulations (38%), higher data volumes (38%), and an increasing and/or changing cybersecurity landscape (35%).

Figure 21. Three-quarters Believe Their IT Environment Is More Complex Today

In general, how complex is your organization's IT environment relative to two years ago? (Percent of respondents)

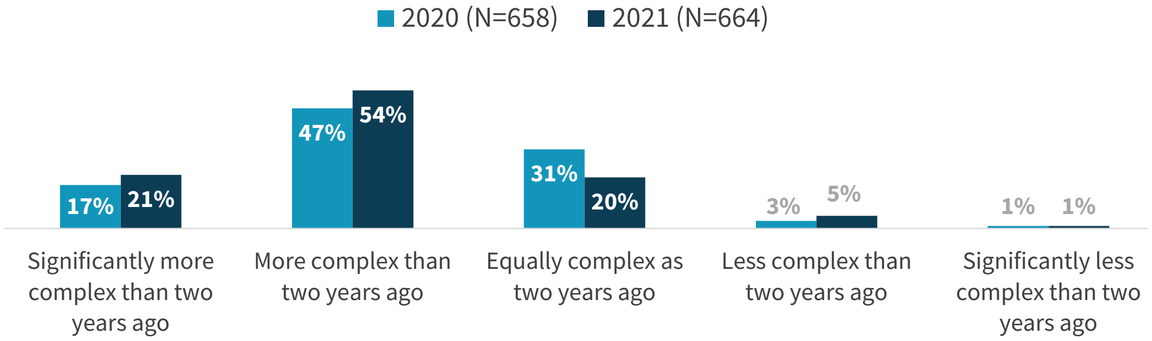

Figure 22. Remote Workers and Data Considerations Are Behind IT Complexity

What do you believe are the biggest reasons your organization's IT environment has become more complex? (Percent of respondents, N=496, five responses accepted)

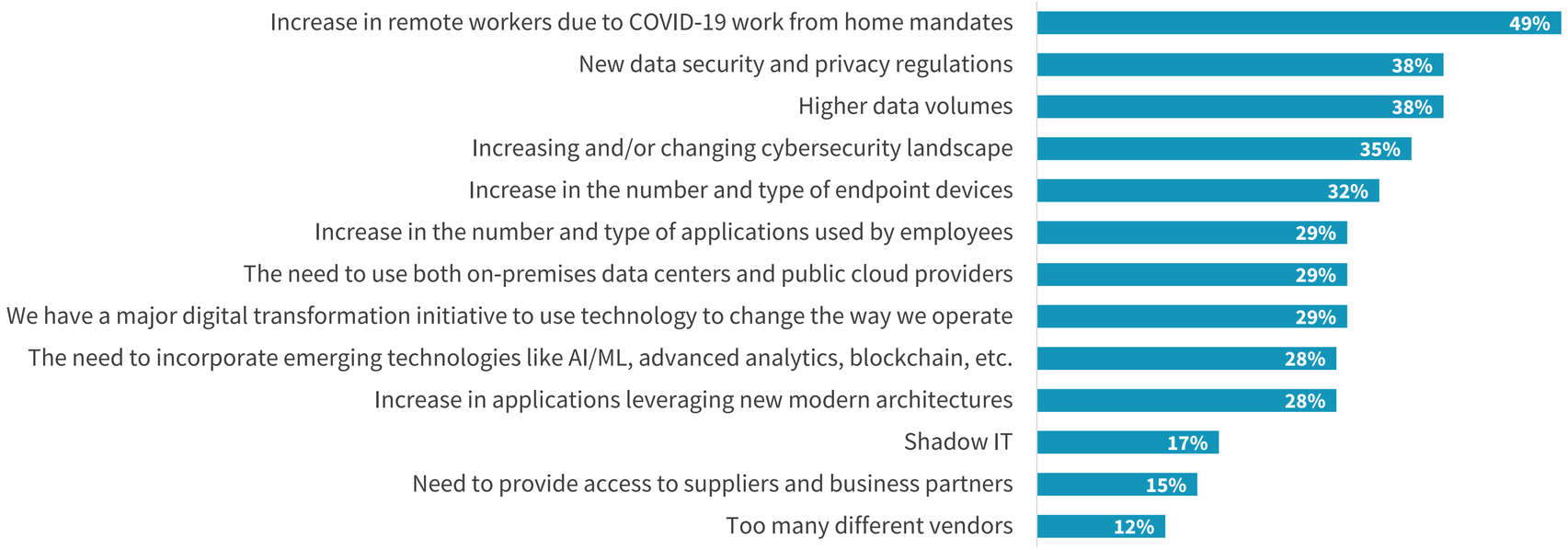

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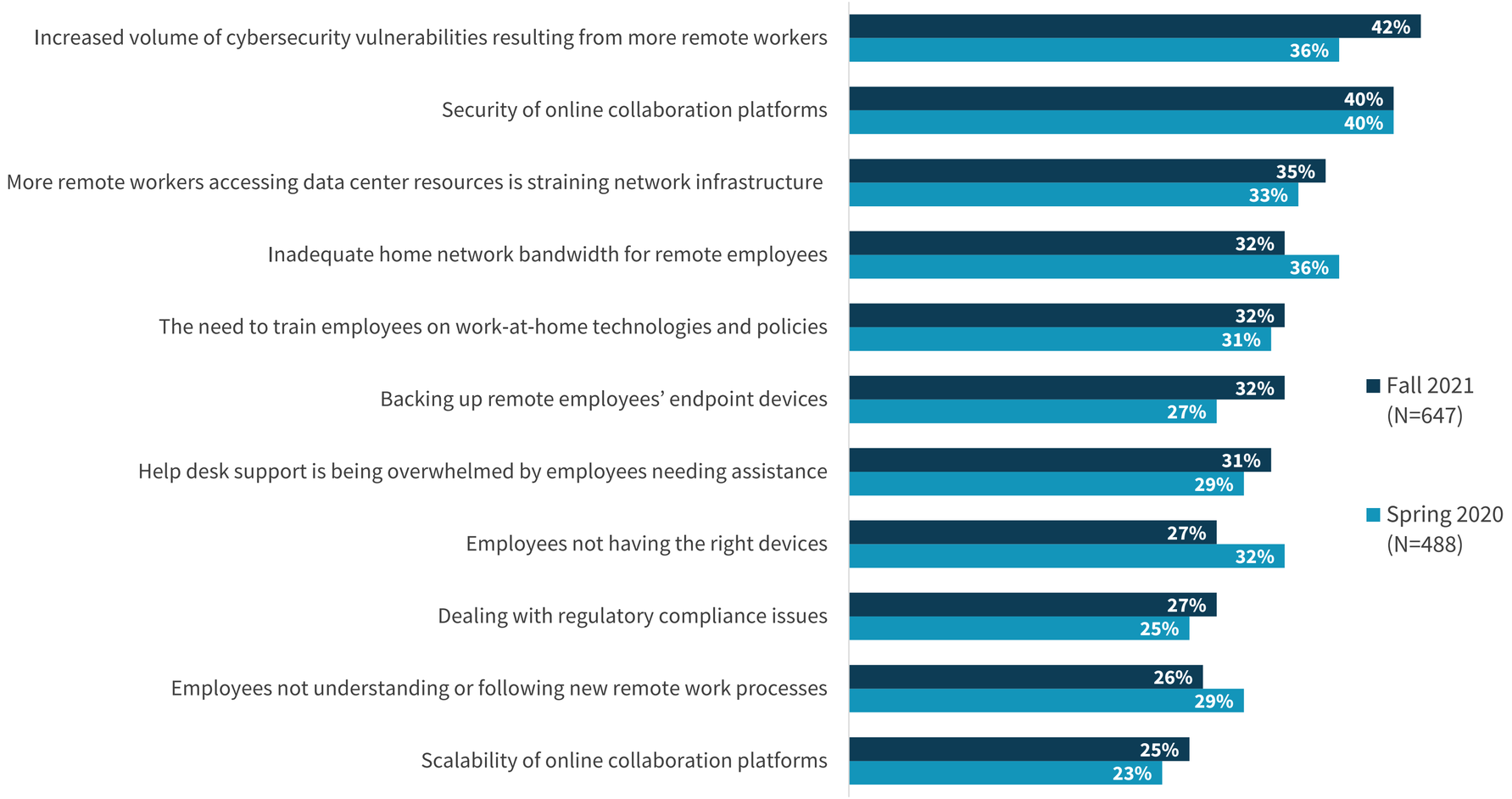
Figure 23. Security Continues to Be Biggest Challenge Supporting Remote Workers

What are your organization's biggest challenges when it comes to supporting an increased number of remote workers? (Percent of respondents, multiple responses accepted)



Source: ESG Research Report, *The Impact of the COVID-19 Pandemic on Remote Work, 2020 IT Spending, and Future Tech Strategies,* June 2020.

Cybersecurity continues to be the top pain point for work-from-home efforts.

Part of the previously mentioned increase in IT complexity organizations are experiencing as a result of increased numbers of remote workers is the challenge they face safeguarding critical resources and maintaining robust networks. According to Figure 23, more than one-third (36%) of respondents reported an increased volume of cybersecurity vulnerabilities as a result of remote workers—many new to working from home—in the spring of 2020,[2] and that number has only gone up, with 42% of organizations citing security risks as one of their biggest challenges of supporting work-from-home mandates going into 2021. Similarly, the security of online collaboration platforms like Zoom and Microsoft Teams continues to vex IT staffs. And while the issue of getting employees the right devices to work remotely has subsided, backing these devices up is a new grappling point.

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Fortified authentication and employee monitoring are the most common priorities for transitioning remote workers back to brick-and-mortar offices.

Strengthened authentication and updated BC/DR plans are most common “return-to-work” priorities.

Mandates are shifting, as organizations straddle the line between returning to the office and supporting ongoing remote work. In terms of the former, nearly half (47%) of respondents cite strengthening the means by which employees sign in/authenticate access to IT and business resources as a top priority (see Figure 24). Other key objectives for IT leadership during this transitionary period include updating business continuity and disaster plans to include processes and protocols in the event of a future mass work-from-home mandate (43%) and providing online training for new facility safety measures (40%).

Figure 24. Improved Authentication and Updated BC/DR Are Top Return-to-Office Priorities

What are the top priorities for your organization’s IT leadership when it comes to supporting return-to-office transition efforts while keeping employees productive, healthy, and safe? (Percent of respondents, N=647, multiple responses accepted)

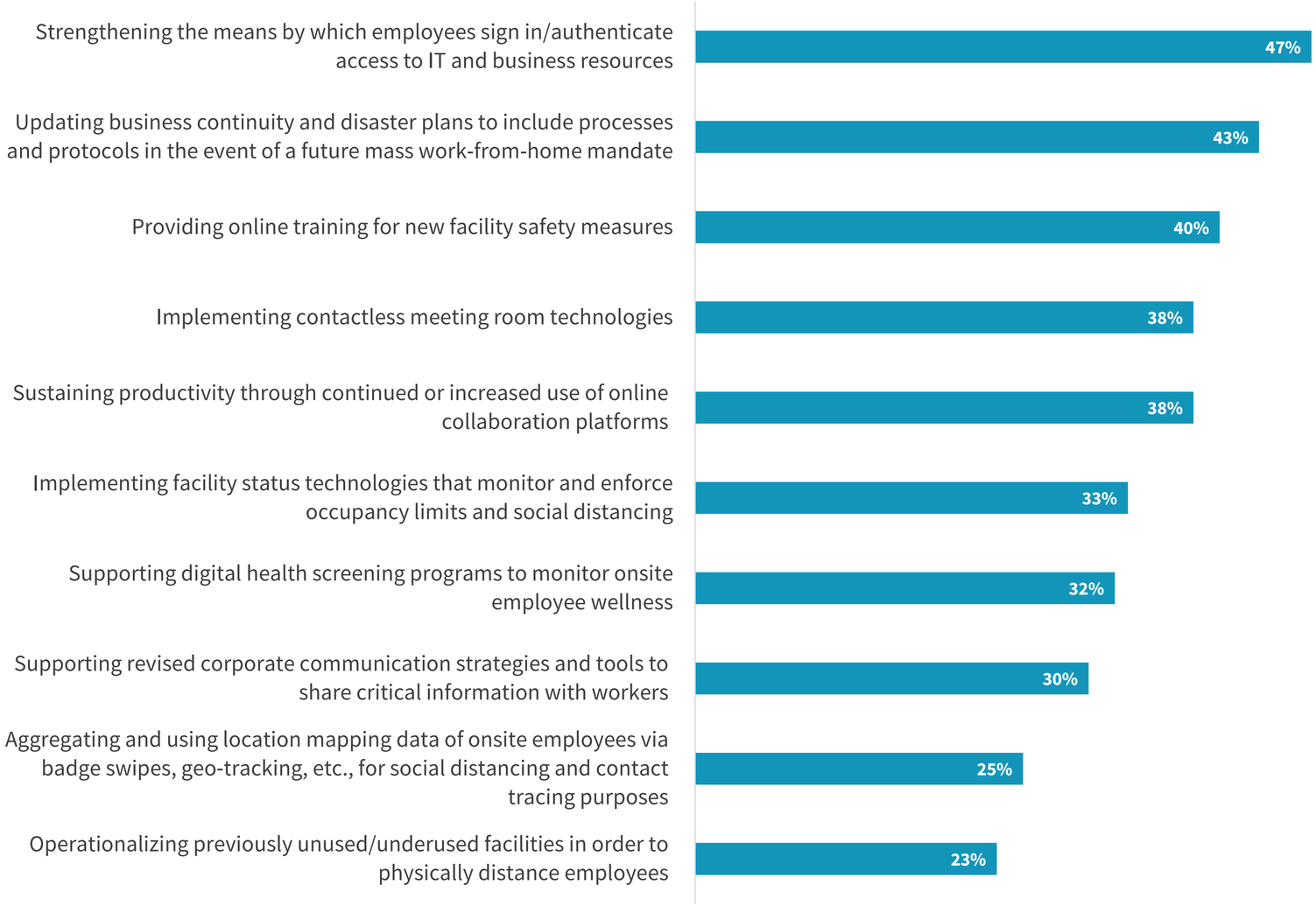

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Figure 25. Nearly Half of ITDMs Acknowledge Increased Pressure to Monitor Employees

Over the last six months, has IT leadership gotten additional (or any) pressure from business executives to increase employee monitoring?
(Percent of respondents, N=664)

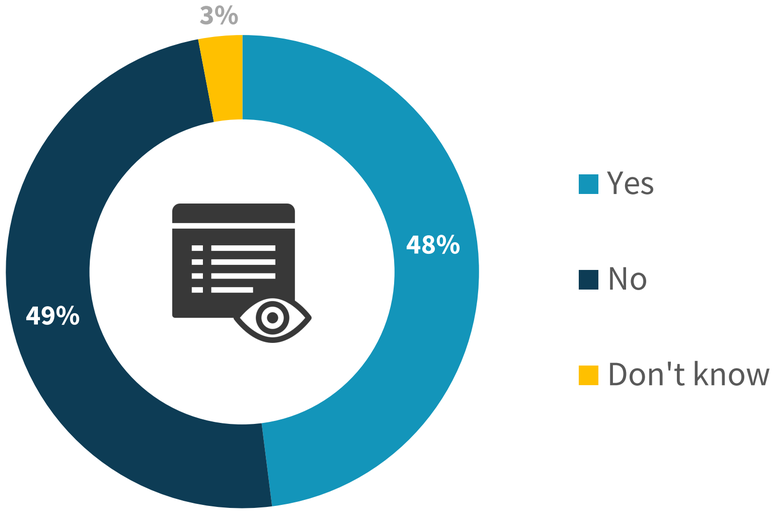
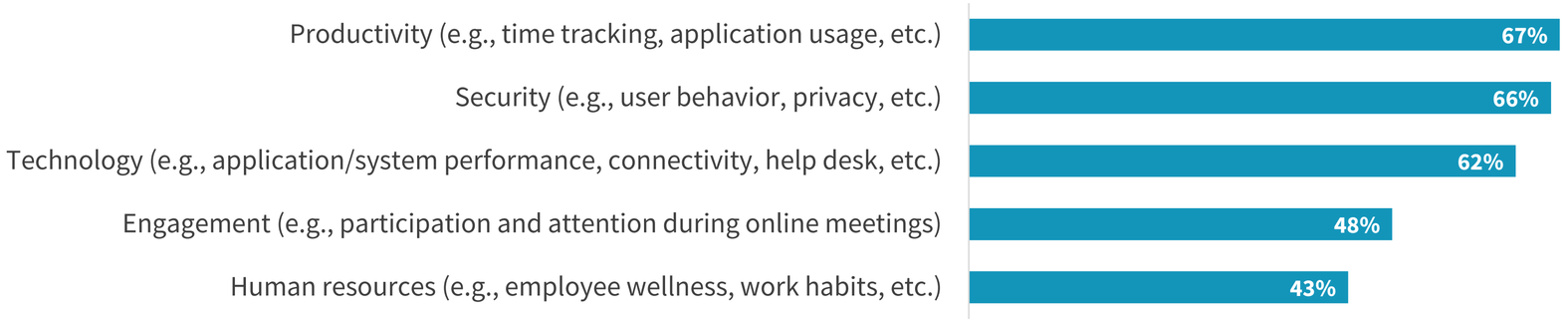


Figure 26. Productivity and Security Most Common Reasons to Monitor Employees

In which of the following areas has IT leadership been tasked with increased employee monitoring?
(Percent of respondents, N=317, multiple responses accepted)



Employee monitoring activities have increased, driven by productivity and security concerns.

When asked whether IT leadership has gotten any pressure from business executives to increase employee monitoring at any point stemming back to the outset of the pandemic, nearly half (48%) of senior IT decision makers responded in the affirmative (see Figure 25). Two-thirds of the respondents at these organizations cited productivity and/or security as the reasons behind the increased monitoring requests (see Figure 26). Work is no longer measured by the total number of hours logged in the office and has left some executives out of touch with their employees and teams. IT teams have a challenge on their hands as they walk the line between monitoring IT systems to deliver optimal user experiences and monitoring capabilities that track application usage, active device time, and the general productivity of users. IT professionals can help strike an ideal balance through insight and analytics that monitor user experience and proactively capture issues before they impact performance, productivity, and employee satisfaction.

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The Bigger Truth

Although IT spending is on the rise as organizations invest in innovative solutions, priorities are shifting. In the past, respondents focused on gaining a competitive edge in the form of providing superb customer experiences, driving operational efficiencies, and increasing employee productivity. New mandates are now emerging as organizations look to support remote workers and offset the impact—both short- and long-term—of COVID-19.

But challenges abound, requiring greater investment in robust cybersecurity solutions to thwart today's sophisticated malware and ransomware attacks, which have increased as a result of a more remote workforce. At the same time, organizations must find new ways to address a shortfall of qualified technology talent in order to capitalize on innovative technologies such as artificial intelligence/machine learning.

Certainly, challenges are part and parcel of running an organization in the digital age. Moving forward, though, it's clear organizations must continue to leverage cloud solutions to provide remote workers with the online communication and collaboration platforms they require to stay productive while safeguarding critical systems and minimizing IT complexity.

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Research Methodology

To gather data for this report, ESG conducted a comprehensive online survey of IT professionals from private- and public-sector organizations in North America (United States and Canada), Western Europe (United Kingdom, France, and Germany), and Australia between October 9, 2020 and October 29, 2020. To qualify for this survey, respondents were required to be IT managers personally responsible for or familiar with their organizations' overall 2021 IT budget and spending plans, either at an entire organization level or at a business unit/division/branch level. Respondents who were only responsible for IT spending at a departmental or workgroup level were disqualified. 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 664 IT managers.

Please see the Respondent Demographics section of this report for more information on these respondents.

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

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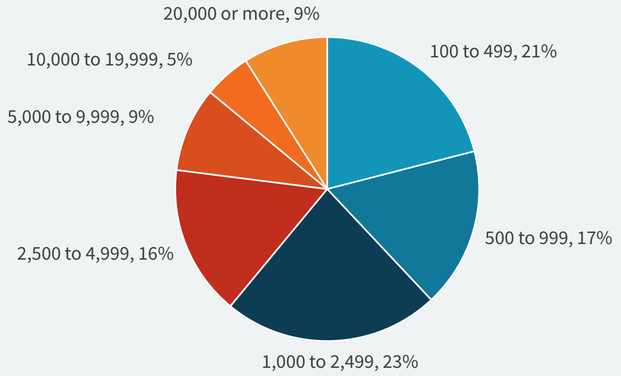
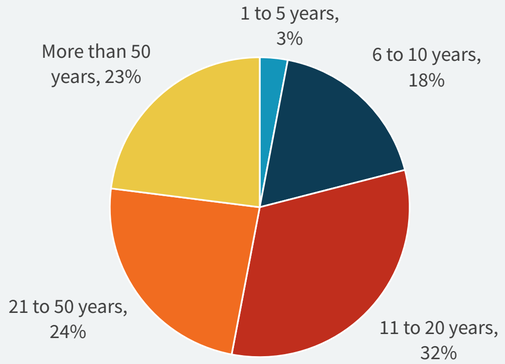
Respondent Demographics

Organizational Profiles

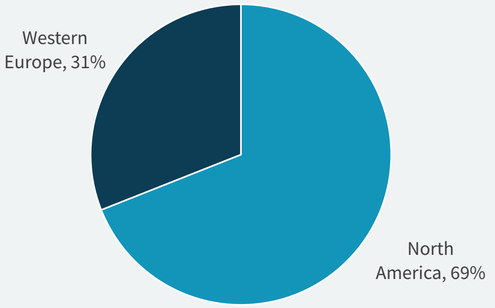
Respondents by Number of Employees



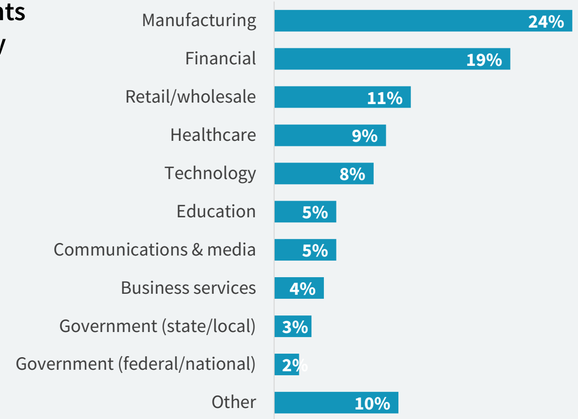
Respondents by Age of Organization



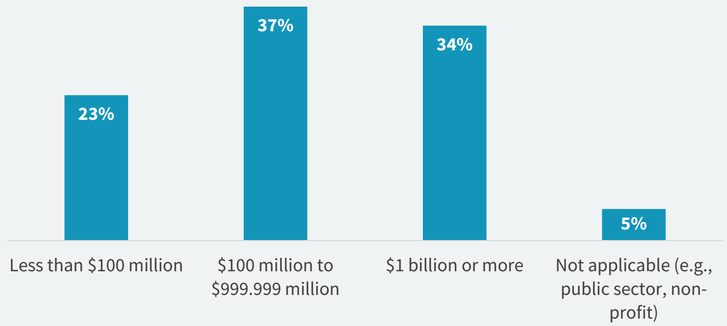
Respondents by Region



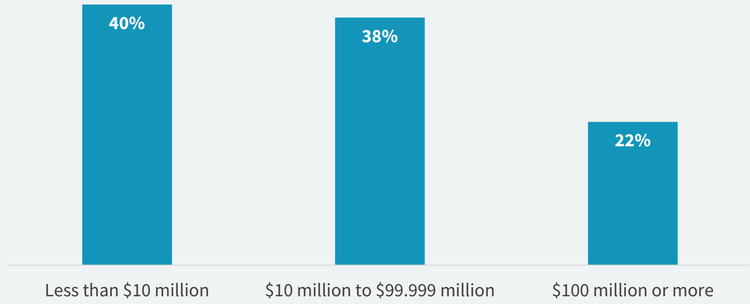
Respondents by Industry



Respondents by Annual Revenue



Respondents by 2021 IT Budget



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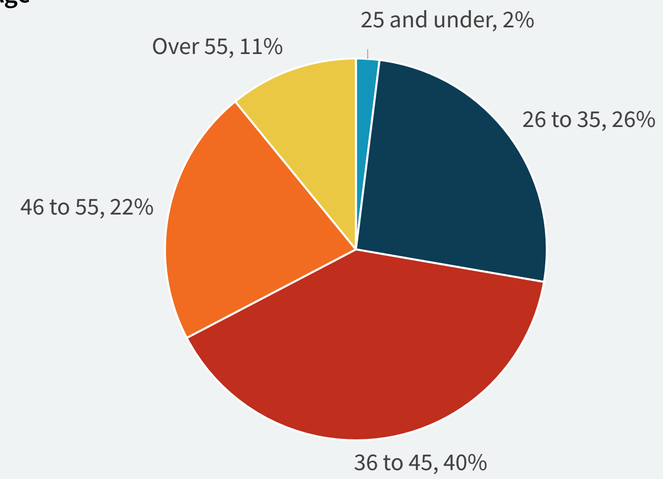
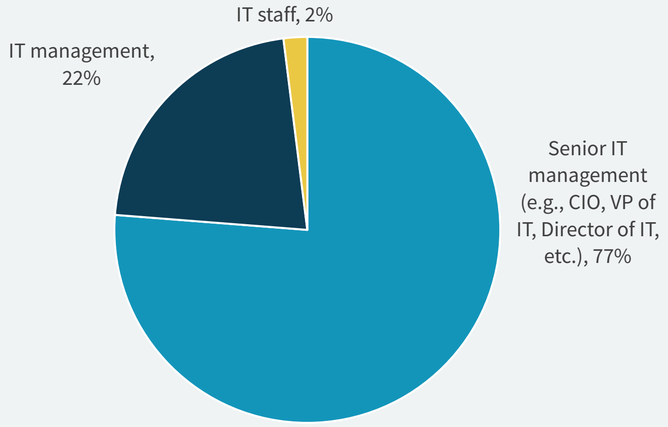
Respondent Demographics

Individual Respondent Profiles

Respondents by Age



Respondents by Role



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