RESEARCH HIGHLIGHTS

Are Desktops Doomed?

Trends in Digital Workspaces, VDI, and DaaS

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Research Objectives

Alternative device choices, employee requirements and preferences (often influenced by technology experiences outside the workplace), and a drive to improve the businesses security posture are all challenging how traditional desktops are delivered to, maintained for, and consumed by end-user employees. Additionally, new features seem to be introduced daily and network access abounds throughout employees' daily lives, while endpoint device innovation challenges the traditional endpoint experience, IT management and security strategies, and legacy processes.

These factors have converged to create the ideal conditions for alternate endpoint strategies. Specifically, assembling a digital workspace and consuming desktops from a centralized data center or the cloud can create a consistent IT management experience, fortify security, and help to deliver the high-quality "day-one endpoint experience" on an everyday basis. In order to gain insight into these trends, ESG surveyed 354 IT professionals at organizations in North America (US and Canada) responsible for/involved in the purchase process for productivity applications and endpoint devices, including virtual desktop infrastructure (VDI) and desktop-as-a-service solutions (DaaS). It is worth noting that this research was conducted prior to the wide-scale work-from-home initiatives stemming from the COVID-19 outbreak. While this research revealed that attitudes toward VDI and DaaS were bullish prior to COVID-19, it stands to reason that these technologies are now even more sought after as remote work enablers, which ESG will investigate with further research.

This study sought to:
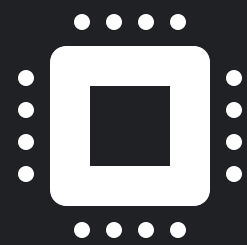
Understand the existing technology challenges and business drivers influencing organizations to consider alternative digital workspace strategies.

Assess how cloud-hosted desktop services are changing desktop provisioning strategies, including on-premises VDI deployments.
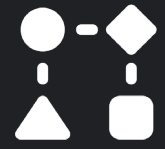
Gauge the experiences of organizations using VDI and/or cloud-hosted desktops to see what benefits they have realized and what challenges they have encountered.

Determine how the evolving endpoint device and OS landscape is impacting the adoption of and deployment plans for VDI and DaaS.

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Research Highlights

Process improvement and security are key considerations for digital workspace strategies, especially those involving VDI and DaaS.

While software licensing inventory and compliance along with the high cost of procurement have been legacy IT challenges, many of the challenges cited by respondents are heavily weighted toward IT process. Security continues to be a top priority as organizations look to protect and secure an expanding perimeter.

VDI deployments are poised to increase significantly as the result of security, cost, and productivity benefits.

The usage of VDI has grown in terms of the number of businesses using it, but rarely has the technology been used in a company-wide fashion. However, the appetite to expand VDI implementations is strong given the experience and success that current users have had with the delivery model.

DaaS has ridden the cloud surge to close the adoption gap with VDI.

DaaS usage (currently at 39% of respondent organizations) is clearly bolstered by the overall adoption of cloud services, and in many cases, the positive experience of these investments. Current DaaS users have aggressive plans with regard to the extent of their implementations based on a combination of their initial success and certain market dynamics that have changed how and where employees work.

VDI/DaaS success and aspirations are tied to efficiency, security, and sustainability.

Nearly two-thirds of respondents identified either IT efficiency or security and compliance as the most critical investment justification metrics when it comes to getting VDI/DaaS projects funded. The focus on IT efficiency further solidifies the challenges that IT is experiencing with process, as well as the heightened level of security concerns. As businesses focus more on sustainability, endpoint device and VDI/DaaS strategies stand to be significantly impacted by these initiatives.

The evolving endpoint and OS landscape is impacting VDI and DaaS strategies.

While some companies have opted to support VDI/DaaS on personal devices in an unfettered manner, most say employees must get IT approval (39%) or completely ban the use of personal devices (26%). ESG expects that as companies evaluate their business continuity plans and enable remote work (and more specifically, work-from-home policies), the usage of personal devices will become even more important.

Process improvement and security are key considerations for digital workspace strategies, especially those involving VDI and DaaS.

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VDI and DaaS *both provide the opportunity to address these challenges…*

Software licensing and high procurement costs are the most common traditional desktop challenges.

The most common challenges that businesses have with delivering traditional full-featured desktops are not related to technology. While software licensing inventory and compliance along with the high cost of procurement have been legacy IT challenges, many of the challenges cited by respondents are heavily weighted toward IT process. The pace of change, troubleshooting issues, the time IT spends on routine and redundant tasks, and helpdesk requests are all IT process challenges every business is dealing with. VDI and DaaS both provide the opportunity to address these challenges while maintaining a high level of security without impacting user productivity.

Top challenges managing traditional desktop environments

Challenge	Percentage
Software licensing inventory and compliance	36%
High cost of procurement	35%
Hard to keep up with rapid pace of technology change	30%
Too much time spent troubleshooting issues	29%
Operational costs	29%
Too much time spent on patch management/desktop updating	28%
Employee downtime associated with desktop refreshes	25%
Too much time spent fielding helpdesk requests	25%
Threat of physical device loss/theft	25%
Difficult to manage hardware/software compatibility	25%

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3 of the top 5 workspace delivery priorities involve security.

When it comes to delivering digital workspace environments – inclusive of apps, data, and devices – the number one priority for organizations is improving employee collaboration. However, security continues to be a top priority as organizations look to protect and secure an expanding perimeter. Specifically, IT professionals are prioritizing the abilities to both detect and respond to security incidences. Additionally, organizations want to control and set conditions for endpoint security policies that balance security with end-user productivity.

Biggest priorities for delivering desktop environments

37%
Improving employee collaboration

36%
Detecting security incidences, vulnerabilities, and risk

35%
Managing user expectations of access, devices choice, and applications preferences

32%
Controlling and setting conditions for endpoint security policies

31%
Responding to security incidences, vulnerabilities, and risk

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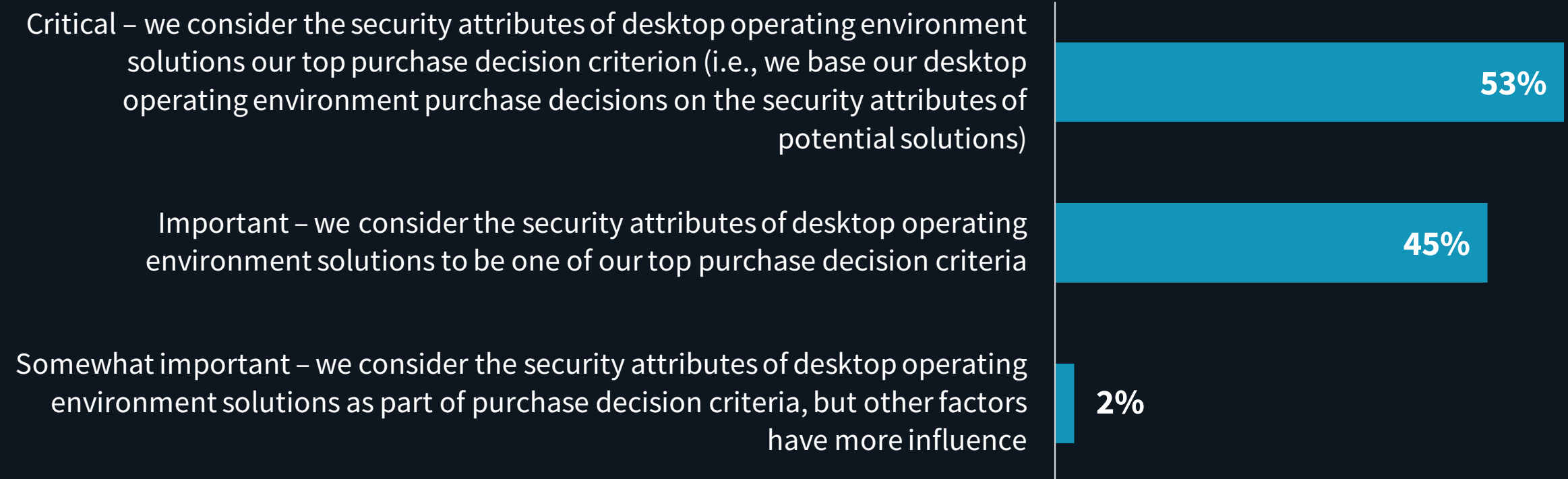Are Desktops Doomed? Trends in Digital Workspaces, VDI, and DaaS

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Most organizations consider security critical to digital workspaces, and the vast majority view VDI/DaaS as more secure than traditional desktop provisioning.
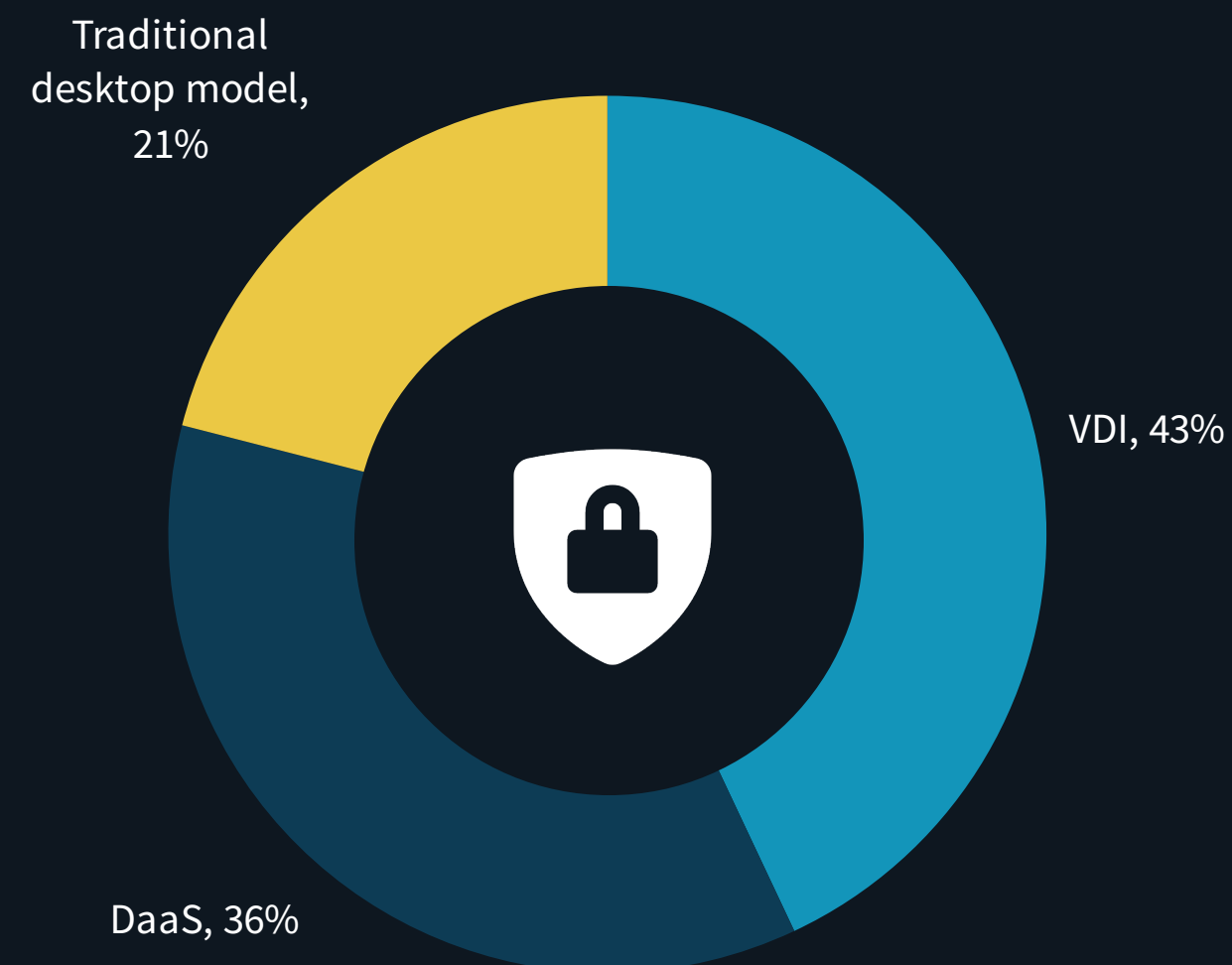
Clearly, security is top of mind for business and IT professionals. As employees use different devices and work from different locations, IT has been challenged to manage an unpredictable environment. Given the expanded perimeter IT professionals need to protect, security has become a critical factor as organizations look at their digital workspace strategies. As such, it's not surprising that it continues to play a critical role in justifying investments in digital workspace strategies. And security will be expected to be a key decision criterion for businesses looking to enable remote work.

79% of respondents indicated they believe alternative desktop delivery models such as VDI and DaaS are more secure than traditional desktop delivery models. The desire for IT and cybersecurity professionals to gain improved control and better visibility into their organization's digital workspace environments has motivated companies to pursue alternative delivery models that provide a secure environment for employees. However, VDI and DaaS implementations still need to follow IT and security best practices in order to actually deliver safe and secure digital workspaces, but assuming they do, VDI and DaaS stand to challenge the vast ecosystem of third-party security tools and enable businesses to consolidate investments.

Importance of security to desktop operating environment strategy

Critical – we consider the security attributes of desktop operating environment solutions our top purchase decision criterion (i.e., we base our desktop operating environment purchase decisions on the security attributes of potential solutions) **53%**

Important – we consider the security attributes of desktop operating environment solutions to be one of our top purchase decision criteria **45%**

Somewhat important – we consider the security attributes of desktop operating environment solutions as part of purchase decision criteria, but other factors have more influence **2%**

Desktop provisioning model considered most secure

Traditional desktop model, 21%

VDI, 43%

DaaS, 36%

79% of respondents indicated they believe alternative desktop delivery models such as VDI and DaaS are more secure than traditional desktop delivery models.
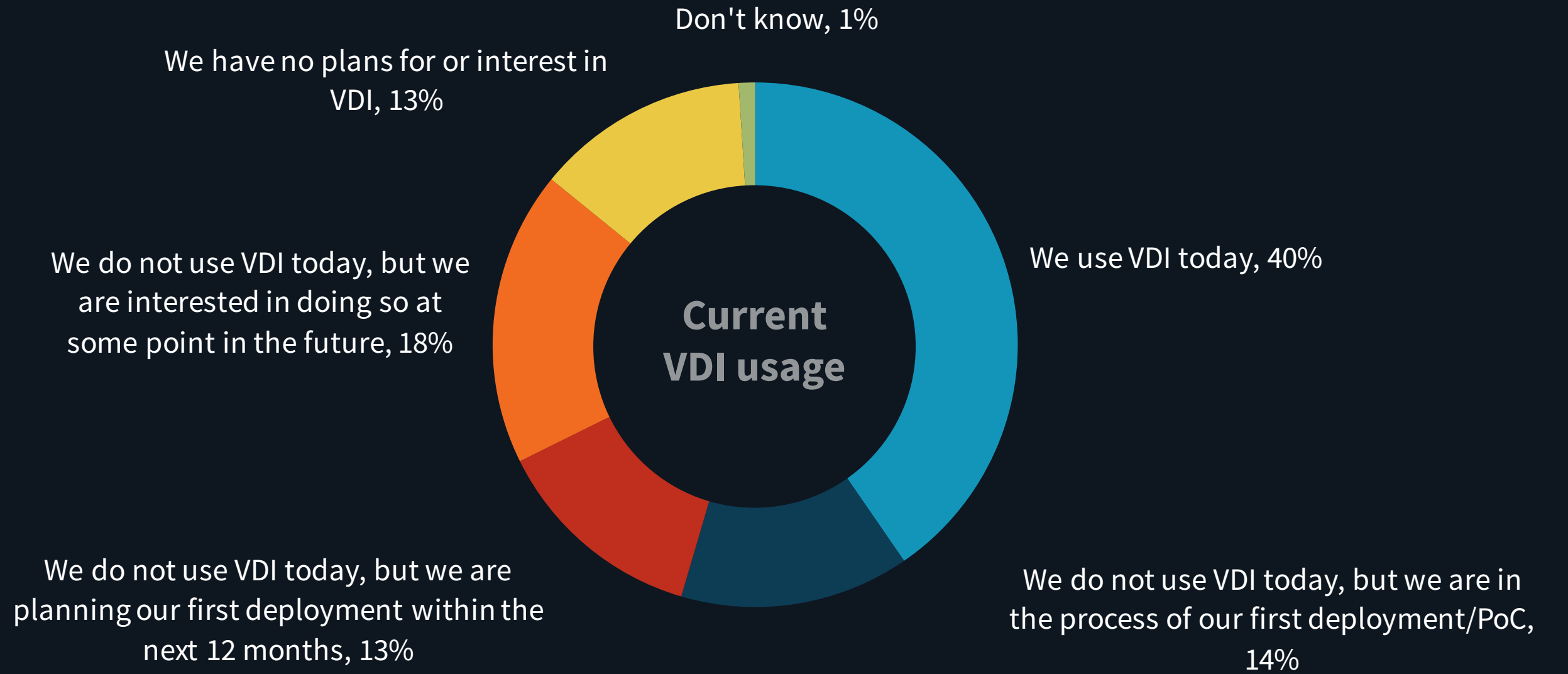
VDI deployments are poised to increase significantly as the result of security, cost, and productivity benefits.

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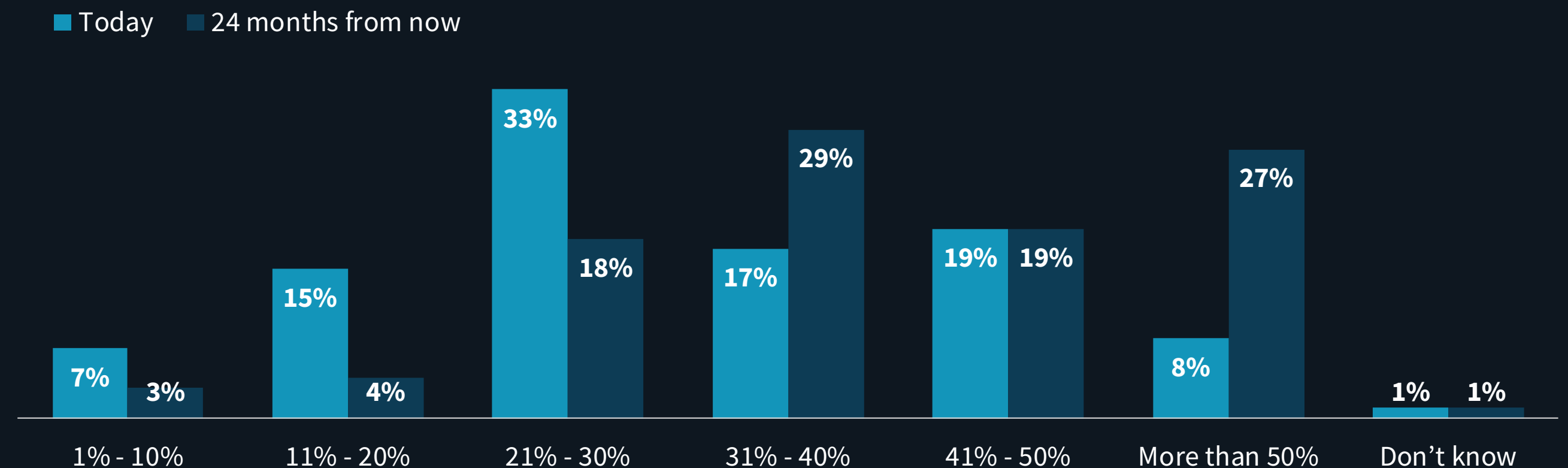Are Desktops Doomed? Trends in Digital Workspaces, VDI, and DaaS

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Four in ten organizations have deployed VDI, and current users have aggressive expansion plans.

40% of respondents indicated that their organization currently uses virtual desktop infrastructure technology. The usage of VDI has grown in terms of the number of businesses using it, but rarely has the technology been used in a company-wide fashion. It is also important to note that the potential for new VDI instances is significant as 60% of organizations do not yet use VDI, but at least one-quarter are on the verge of doing so.

Historically, VDI has been limited to niche use cases and defined user segments, despite the fact that these implementations have been successful in improving the way that IT can manage and maintain a digital workspace environment for users. However, the appetite to expand VDI implementations is strong given the experience and success that current users have had with the delivery model. Once companies have moved beyond initial implementations, their appetite to invest further in VDI indicates the strong market potential for this technology.

Current VDI usage

- Don't know, 1%
- We have no plans for or interest in VDI, 13%
- We do not use VDI today, but we are interested in doing so at some point in the future, 18%
- We do not use VDI today, but we are planning our first deployment within the next 12 months, 13%
- We use VDI today, 40%
- We do not use VDI today, but we are in the process of our first deployment/PoC, 14%

Percent of total desktops that are VDI now and in 24 months among current users

■ Today ■ 24 months from now

Range	Today	24 months from now
1% - 10%	7%	3%
11% - 20%	15%	4%
21% - 30%	33%	18%
31% - 40%	17%	29%
41% - 50%	19%	19%
More than 50%	8%	27%
Don't know	1%	1%

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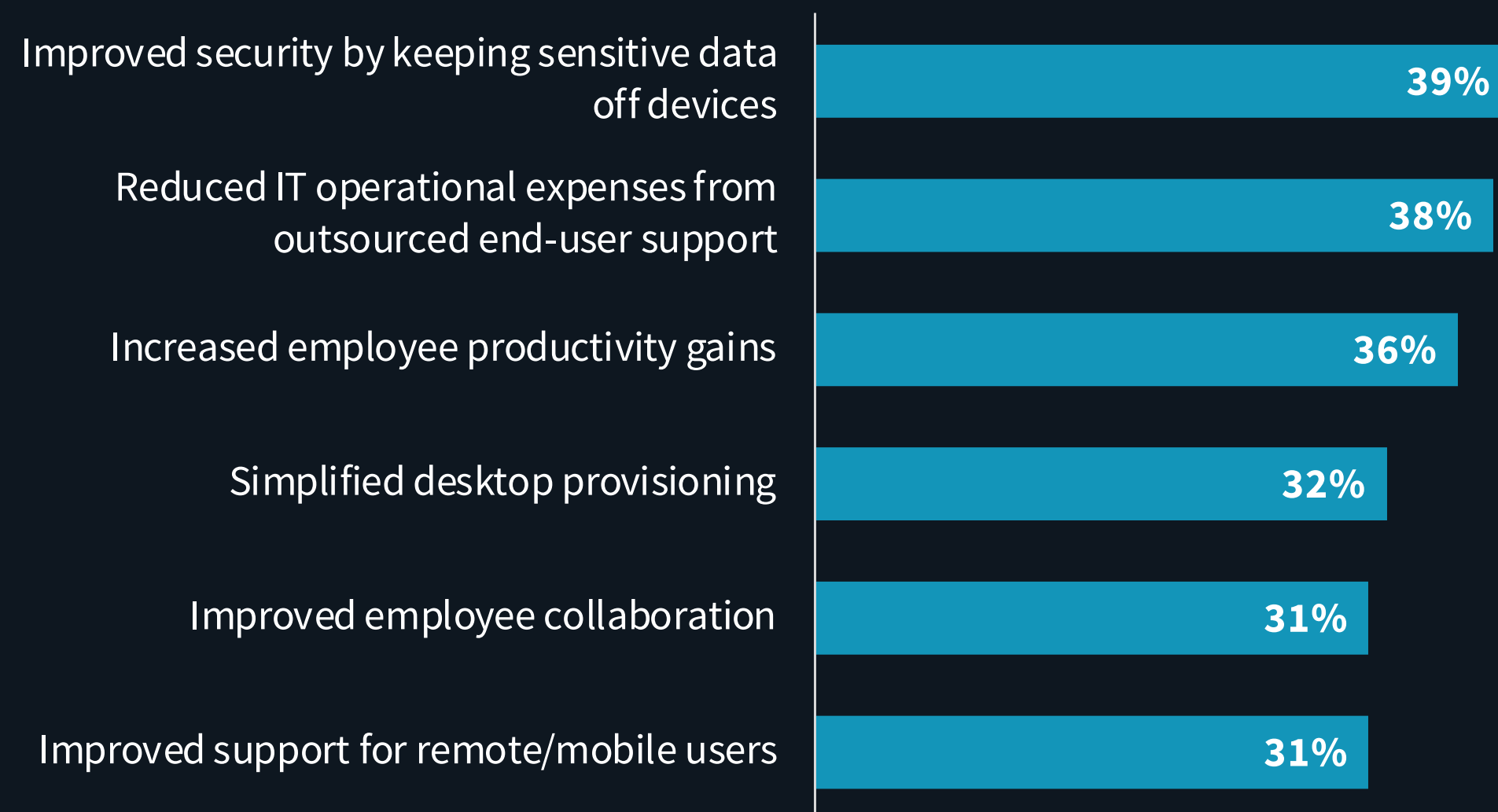Are Desktops Doomed? Trends in Digital Workspaces, VDI, and DaaS

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Security and OpEx were cited as the most common VDI benefits, but management complexity and unexpected costs top the list of challenges.

The most common benefits of VDI align well with the challenges previously identified by organizations with regard to their traditional desktop delivery experience. Specifically, security, operational expenses, and employee productivity all stand out as top benefits that VDI has delivered. When VDI strategies and implementation plans align to provide fixes to existing shortcomings, the technology enables businesses to achieve their goals of improving the end-user workspace delivery experience.

However, the challenge of management complexity remains a significant hurdle for VDI implementations. The underlying server, storage, and networking infrastructure can be complex and are often associated with higher than anticipated costs. Organizations remain concerned about the potential for security breaches of managed desktop environments but should also consider the potential benefit of being able to detect a breach sooner and with higher predictability than with traditional desktop models.

Top 5 benefits of VDI

Benefit	%
Improved security by keeping sensitive data off devices	39%
Reduced IT operational expenses from outsourced end-user support	38%
Increased employee productivity gains	36%
Simplified desktop provisioning	32%
Improved employee collaboration	31%
Improved support for remote/mobile users	31%

Top 5 VDI challenges/concerns

Challenge	%
Management complexity	29%
Total cost of the solution higher than anticipated	26%
Security breach of managed desktop environment	22%
Insufficient regulation compliance	21%
Poor user experience	20%
User dissatisfaction with device/application flexibility	20%

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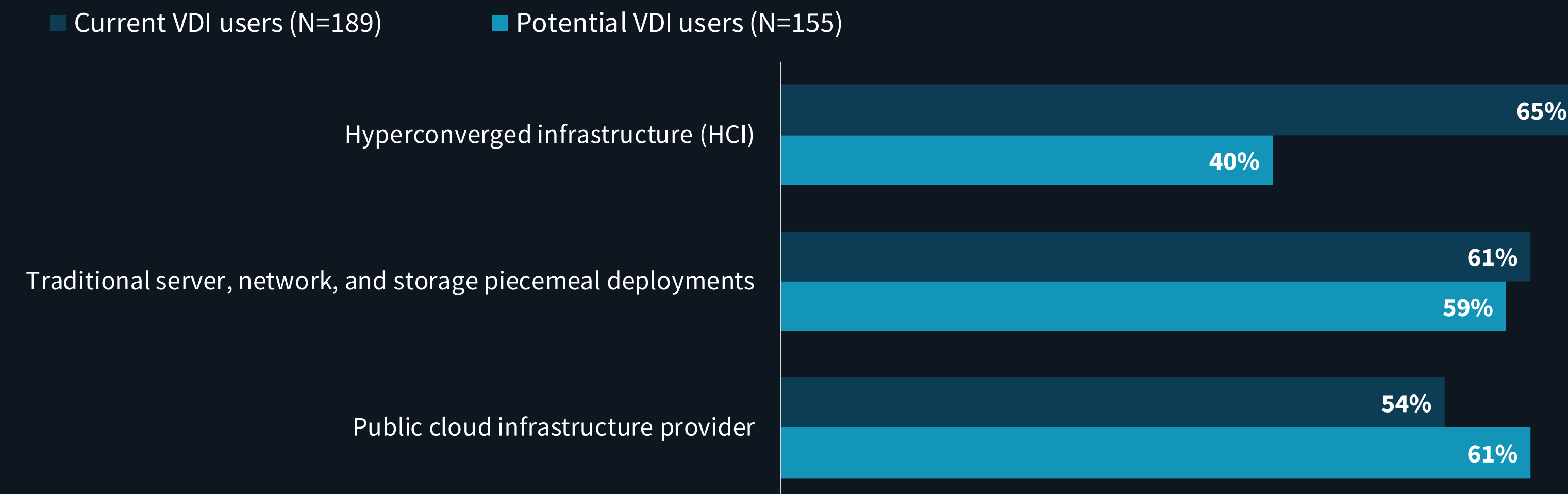
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HCI is the most common current underlying VDI infrastructure while potential adopters expect to use public cloud infrastructure services.

Nearly two-thirds (65%) of current VDI users leverage hyperconverged infrastructure to support their implementations. This suggests that IT organizations want to focus on the VDI end-user experience as opposed to managing and maintaining the underlying data center infrastructure. Hyperconverged infrastructure offers the benefit of simplified procurement, scale, and the performance requirements needed for VDI. Likely due to the overall success of cloud consumption models, the majority of potential VDI users view public cloud infrastructure providers as a likely landing zone for anticipated deployments. This raises the question of whether potential VDI users may also consider desktop-as-a-service (DaaS) due to its alignment with a cloud services model.

Type of infrastructure supporting VDI deployments

■ Current VDI users (N=189) ■ Potential VDI users (N=155)

Hyperconverged infrastructure (HCI)
- 65%
- 40%

Traditional server, network, and storage piecemeal deployments
- 61%
- 59%

Public cloud infrastructure provider
- 54%
- 61%

Hyperconverged infrastructure offers the benefit of simplified procurement, scale, and the performance requirements needed for VDI.
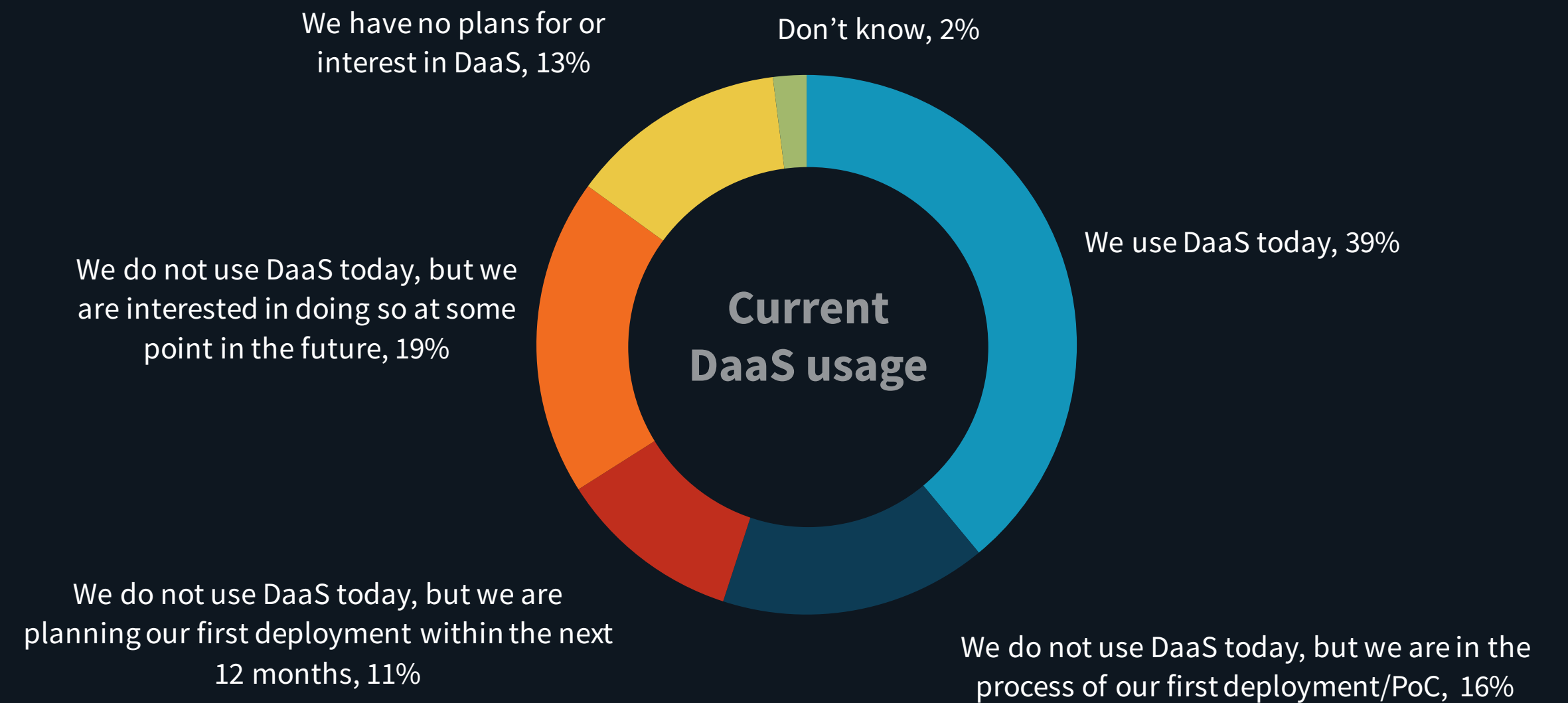
DaaS has ridden the cloud surge to close the adoption gap with VDI.

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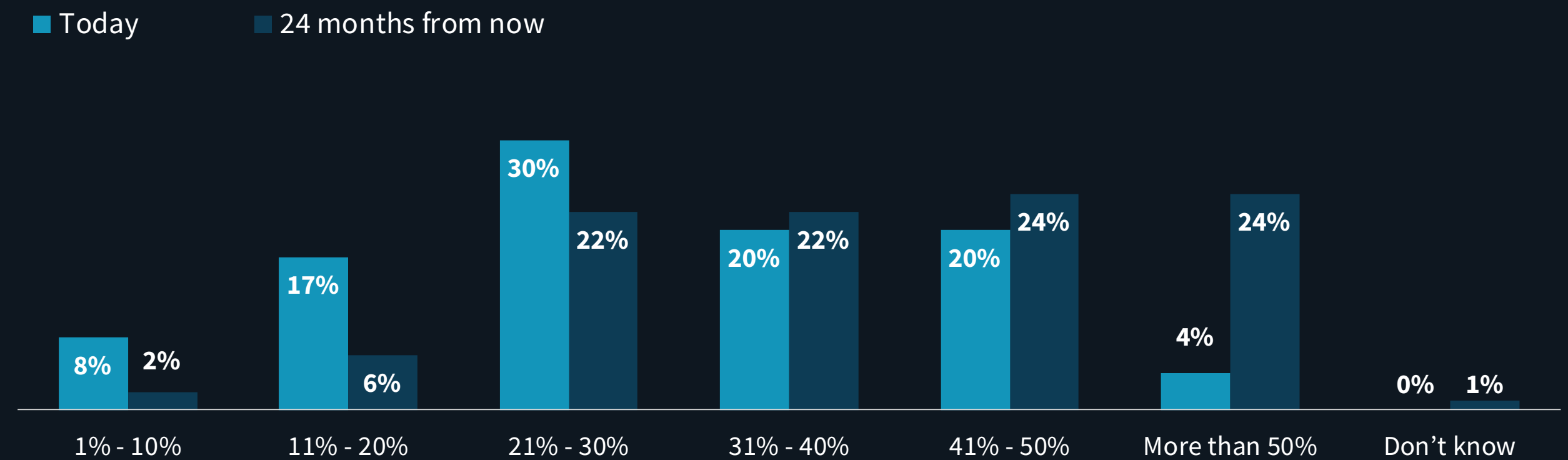Are Desktops Doomed? Trends in Digital Workspaces, VDI, and DaaS

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Nearly four in ten organizations leverage DaaS, and like their VDI counterparts, DaaS users have aggressive expansion plans.

Desktop-as-a-service usage today includes DaaS products as well as system integrators or resellers that are selling desktop-as-a-service based on a VDI solution that is transparent to the consumer. DaaS usage (currently at 39% of respondent organizations) is clearly bolstered by the overall adoption of cloud services, and in many cases, the positive experience of these investments. The future of DaaS will likely be coupled to the continued usage of cloud services as they increasingly become fixtures, and even cornerstones, of IT strategies.

Desktop-as-a-service implementations are similar to VDI in that they have typically been deployed to a targeted set of users. IT organizations have also tended to use DaaS as an initial means to quickly access desktop resources in a timely and more elastic manner. However, like VDI, current DaaS users have aggressive plans with regard to the extent of their implementations based on a combination of their initial success and certain market dynamics that have changed how and where employees work. Desktop-as-a-service users have also considered the shared responsibility model that alleviates their responsibility of managing the underlying infrastructure, enabling them to instead focus more on the digital workspace itself and the associated user experience.

Current DaaS usage

- We have no plans for or interest in DaaS, 13%
- Don't know, 2%
- We use DaaS today, 39%
- We do not use DaaS today, but we are interested in doing so at some point in the future, 19%
- We do not use DaaS today, but we are planning our first deployment within the next 12 months, 11%
- We do not use DaaS today, but we are in the process of our first deployment/PoC, 16%

Percent of total desktops that are DaaS now and in 24 months among current users

- ■ Today
- ■ 24 months from now

	Today	24 months from now
1% - 10%	8%	2%
11% - 20%	17%	6%
21% - 30%	30%	22%
31% - 40%	20%	22%
41% - 50%	20%	24%
More than 50%	4%	24%
Don't know	0%	1%

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Most common DaaS benefits include improved security and BC/DR, as well as reduced OpEx, but unanticipated costs and management complexity top the list of challenges.
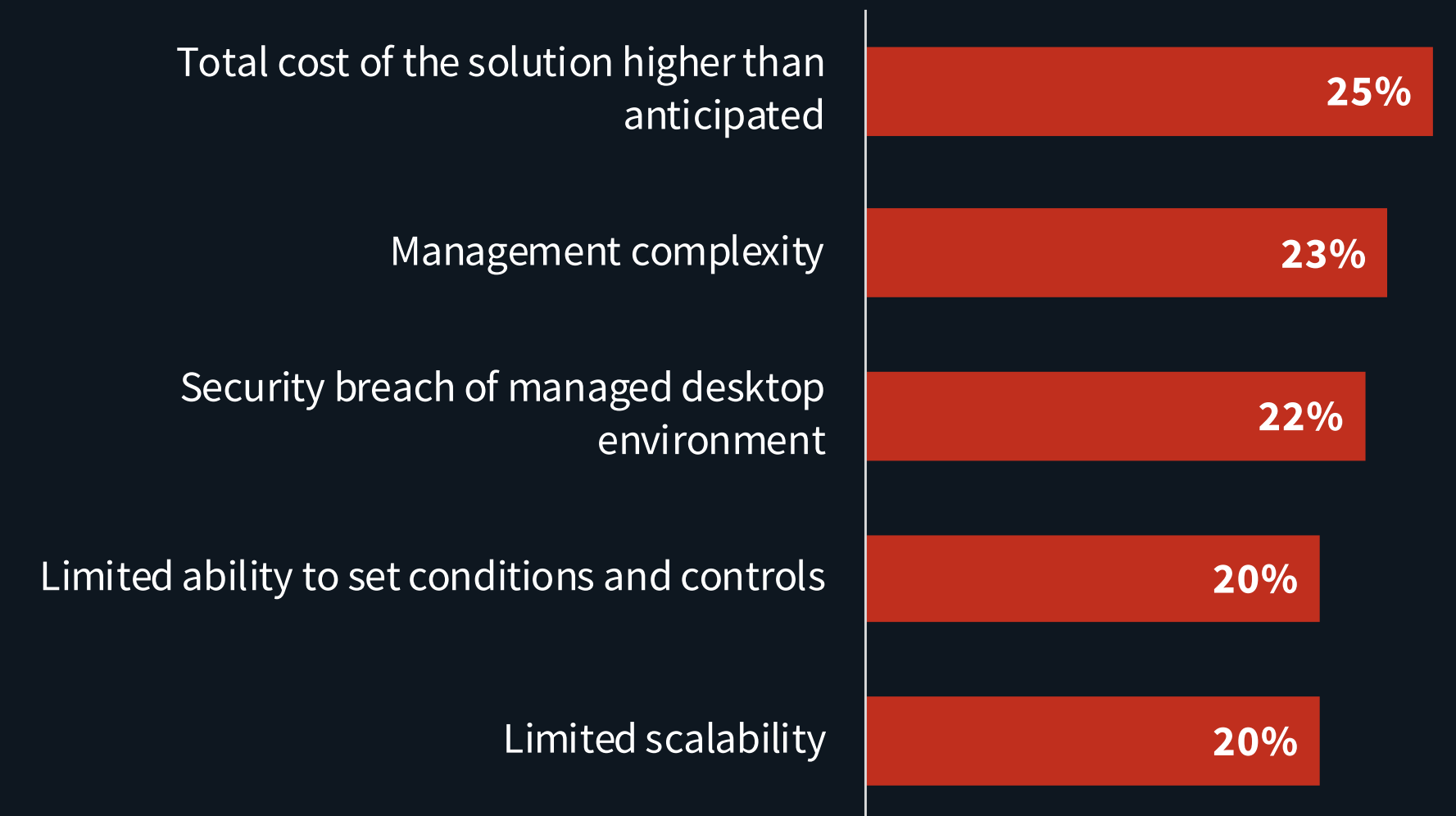
Desktop-as-a-service is enabling companies to improve security and keep sensitive data off devices as workforces continue to become increasingly mobile and employees become more likely to work outside an office setting. DaaS has also helped IT address operational expenses due to its ability to simplify and streamline IT tasks and processes. Improved availability in business continuity is also top of mind for businesses today and an ideal opportunity to explore scenarios in which DaaS can help maintain employee connectivity and productivity during unplanned outages.
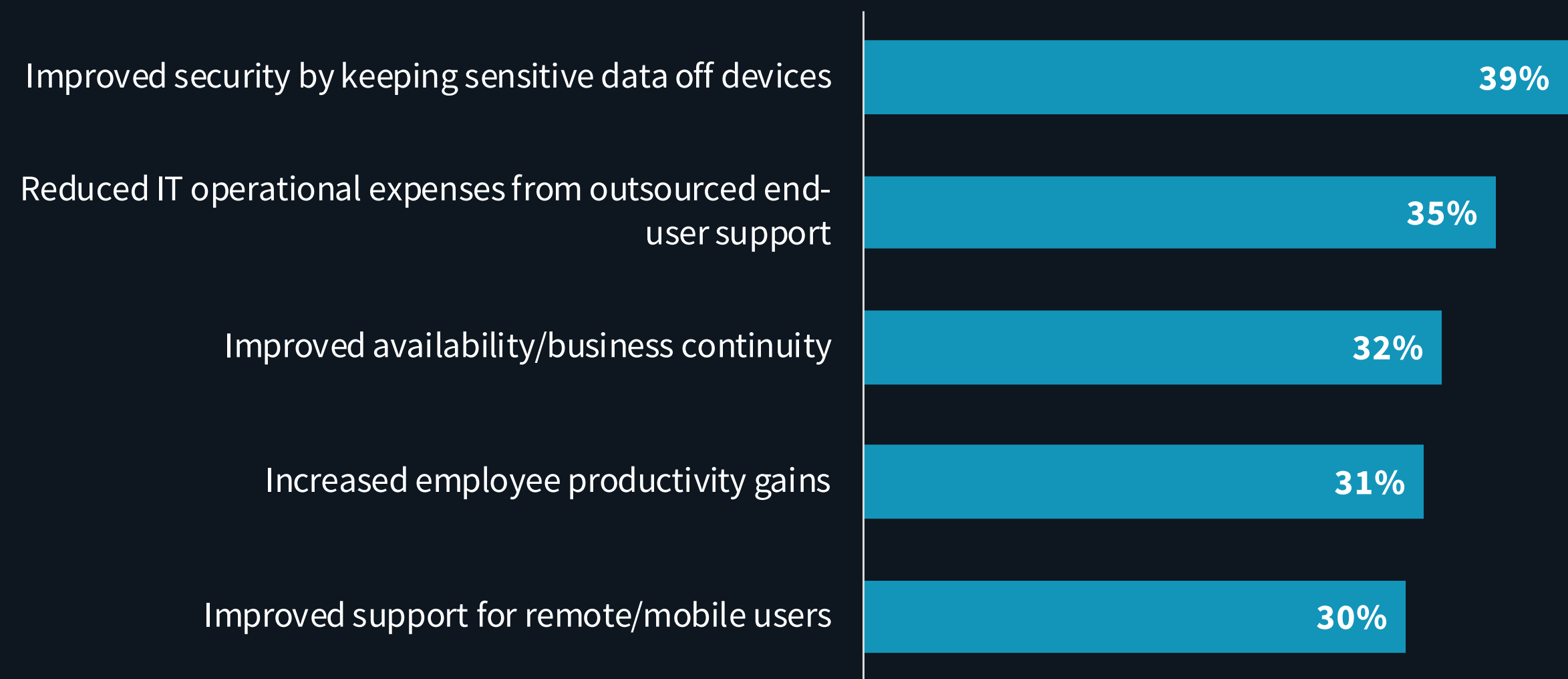
As was the case with VDI users, those using DaaS have run into issues with hidden costs and management complexity. Also like VDI, the potential of a security breach of a managed desktop environment is a top concern that cloud service providers will need to address.
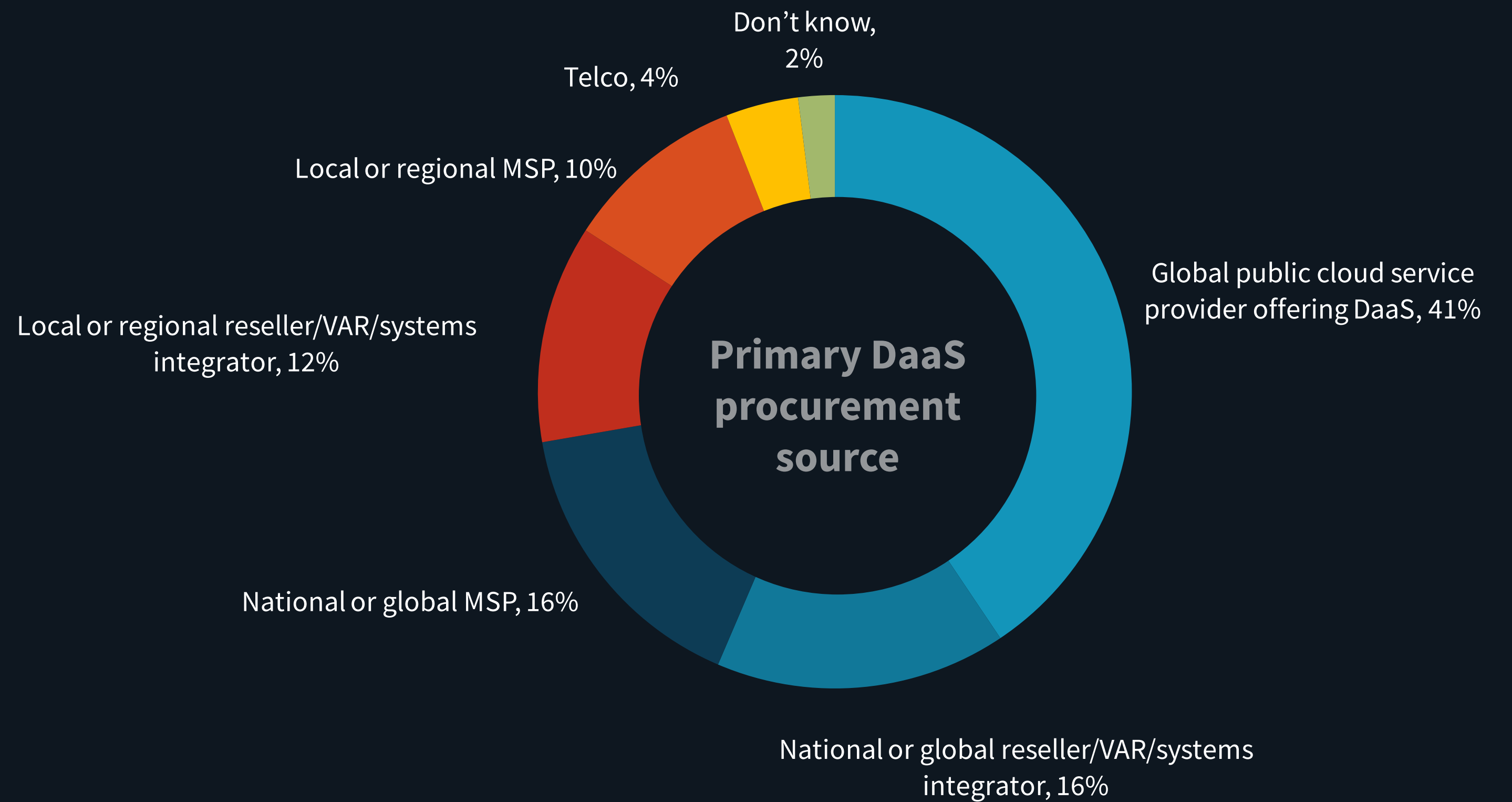
Top 5 benefits of DaaS

Improved security by keeping sensitive data off devices	39%
Reduced IT operational expenses from outsourced end-user support	35%
Improved availability/business continuity	32%
Increased employee productivity gains	31%
Improved support for remote/mobile users	30%

Top 5 DaaS challenges/concerns

Total cost of the solution higher than anticipated	25%
Management complexity	23%
Security breach of managed desktop environment	22%
Limited ability to set conditions and controls	20%
Limited scalability	20%

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41% of respondents will purchase or expect to purchase a DaaS solution directly from a global public cloud service provider.

Most current and potential DaaS users view hyperscalers as their procurement source.

While 41% of respondents will purchase or expect to purchase a DaaS solution directly from a global public cloud service provider, systems integrators, value-added resellers, and managed service providers all play an important role in helping organizations determine when and where to invest in their DaaS strategy. Third-party professional services, technical services, and consulting organizations can play a critical role to help businesses determine where DaaS works well and how it integrates with existing IT architecture, security, and processes.
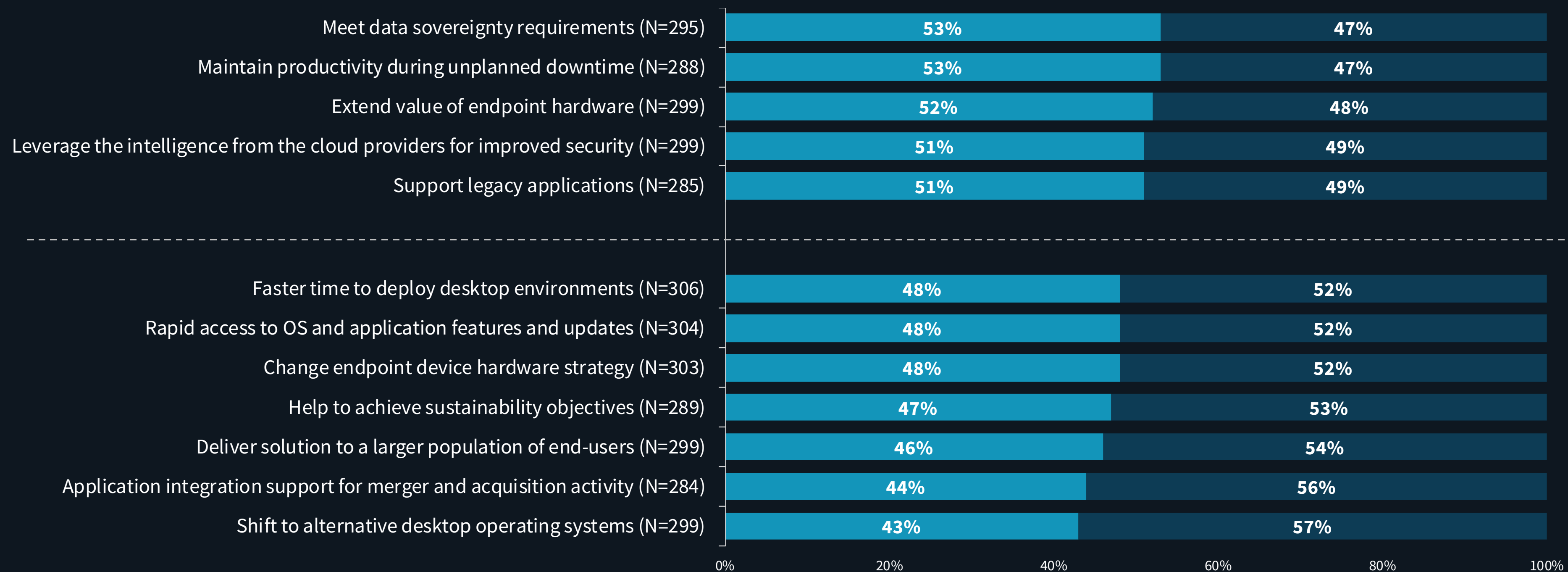
Don't know, 2%

Telco, 4%

Local or regional MSP, 10%

Local or regional reseller/VAR/systems integrator, 12%

Primary DaaS procurement source

Global public cloud service provider offering DaaS, 41%

National or global MSP, 16%

National or global reseller/VAR/systems integrator, 16%

VDI/DaaS success and aspirations are tied to efficiency, security, and sustainability.

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VDI versus DaaS scorecard.

In a few use cases and outcomes, VDI or DaaS were perceived to be slightly better positioned, such as data sovereignty for VDI and scalability to support more users for DaaS. However, it is clear that each of these technologies is a viable solution across all of these use cases. In fact, each of the delivery models is equally positioned to deliver the potential value that businesses are looking to achieve across these outcomes, which leaves IT decision makers to use other decision criteria when choosing one technology over the other.

Use cases and outcomes for which VDI or DaaS is better positioned

■ VDI　　　■ DaaS

Use case	VDI	DaaS
Meet data sovereignty requirements (N=295)	53%	47%
Maintain productivity during unplanned downtime (N=288)	53%	47%
Extend value of endpoint hardware (N=299)	52%	48%
Leverage the intelligence from the cloud providers for improved security (N=299)	51%	49%
Support legacy applications (N=285)	51%	49%
Faster time to deploy desktop environments (N=306)	48%	52%
Rapid access to OS and application features and updates (N=304)	48%	52%
Change endpoint device hardware strategy (N=303)	48%	52%
Help to achieve sustainability objectives (N=289)	47%	53%
Deliver solution to a larger population of end-users (N=299)	46%	54%
Application integration support for merger and acquisition activity (N=284)	44%	56%
Shift to alternative desktop operating systems (N=299)	43%	57%

VDI is better positioned

DaaS is better positioned

0%　20%　40%　60%　80%　100%

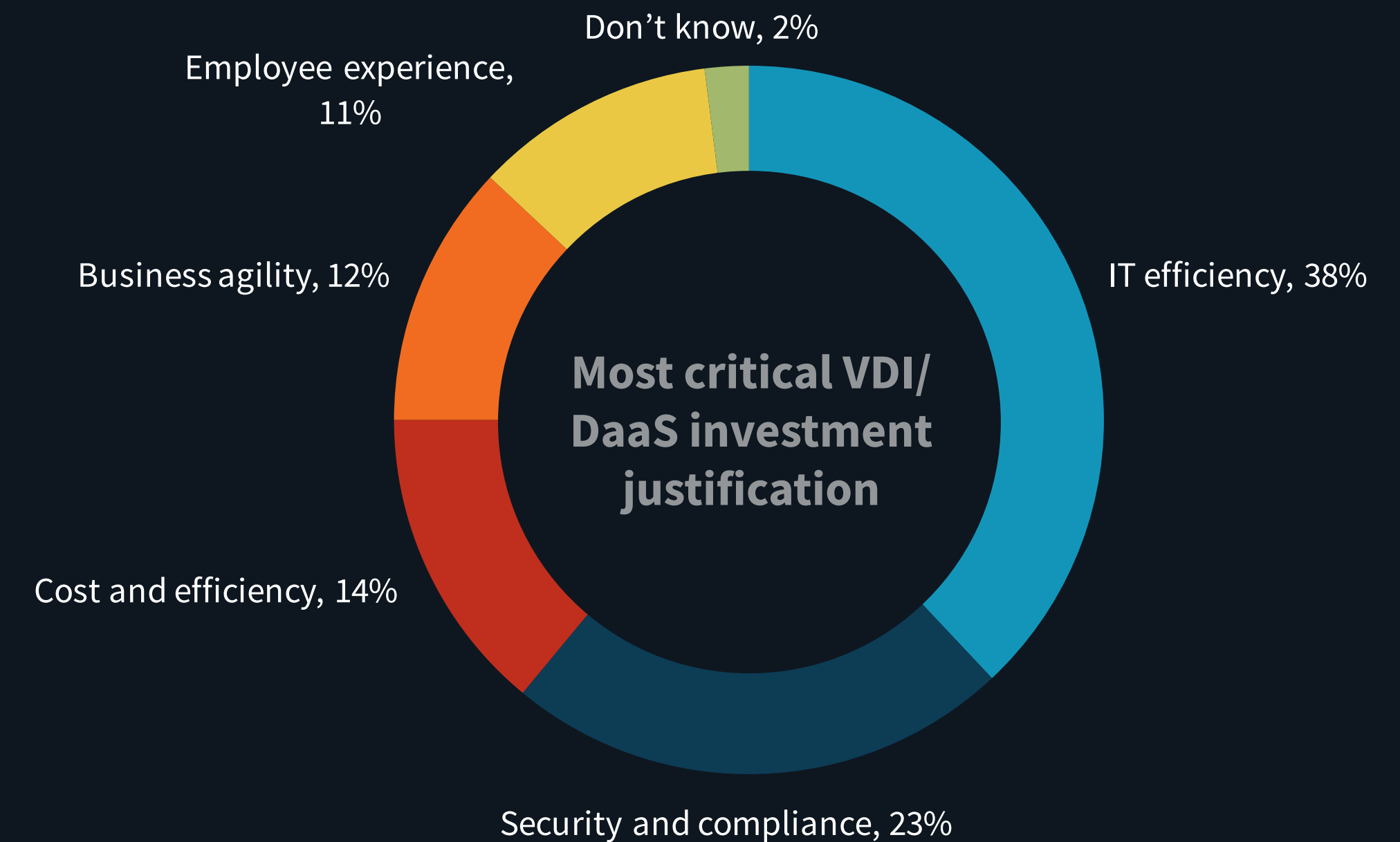RESEARCH HIGHLIGHTS:
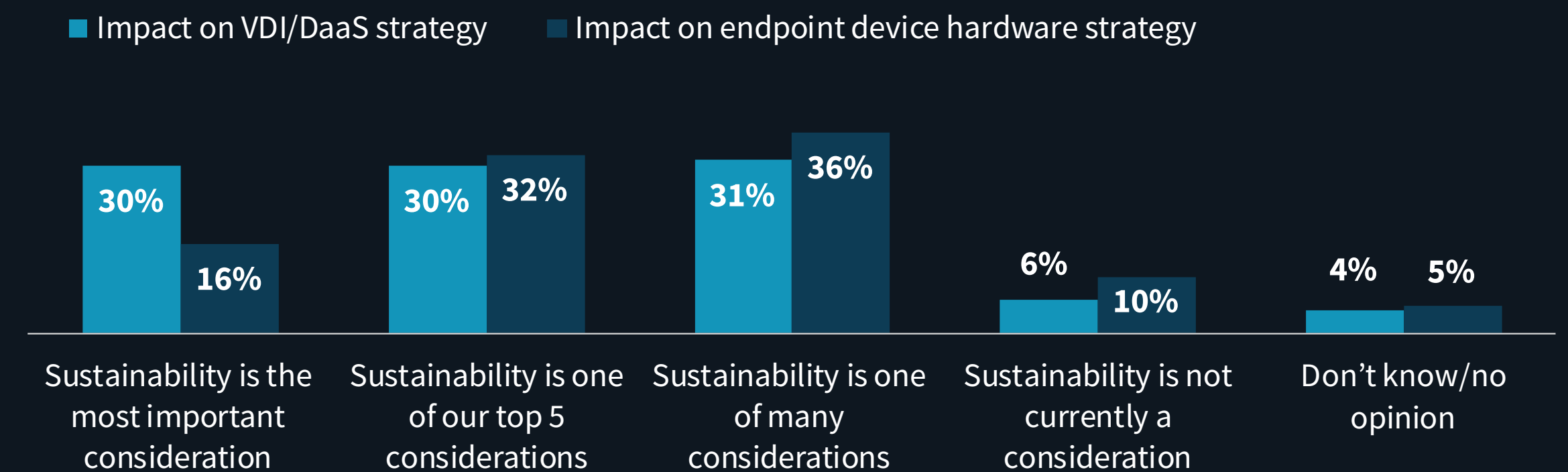Are Desktops Doomed? Trends in Digital Workspaces, VDI, and DaaS

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More than half cite IT efficiency and security as most important investment justification metrics.

As businesses look to further invest in VDI and DaaS solutions, or more specifically, justify those investments, it's important that IT understand the most important business value lever. Nearly two-thirds of respondents identified either IT efficiency (38%) or security and compliance (23%) as the most critical investment justification metrics when it comes to getting VDI/DaaS projects funded. The focus on IT efficiency further solidifies the challenges that IT is experiencing with process, as well as the heightened level of security concerns. Organizations will want to consider the impact VDI and DaaS have on the number of full-time IT staff that can manage these digital workspace environments, as well as how VDI/DaaS may help simplify and eliminate routine and mundane tasks.

As businesses focus more on sustainability, endpoint device and VDI/DaaS strategies stand to be significantly impacted by these initiatives. While many organizations focus on the environmental impact of the endpoint device, it is clear that many organizations have VDI and DaaS in mind as conduits to sustainability. Indeed, 60% of respondents indicated that sustainability is one of their top five considerations when it comes to VDI/DaaS decisions, with 30% citing it as the most important factor. This makes sense given that VDI and DaaS can help reduce the number of endpoint devices per user and the overall number of endpoint devices needed by a business, as well as optimize device usage across all employees. These technologies can also offer a consumption model that enables businesses to only pay for what they use and reduce the overall consumption of resources per employee.
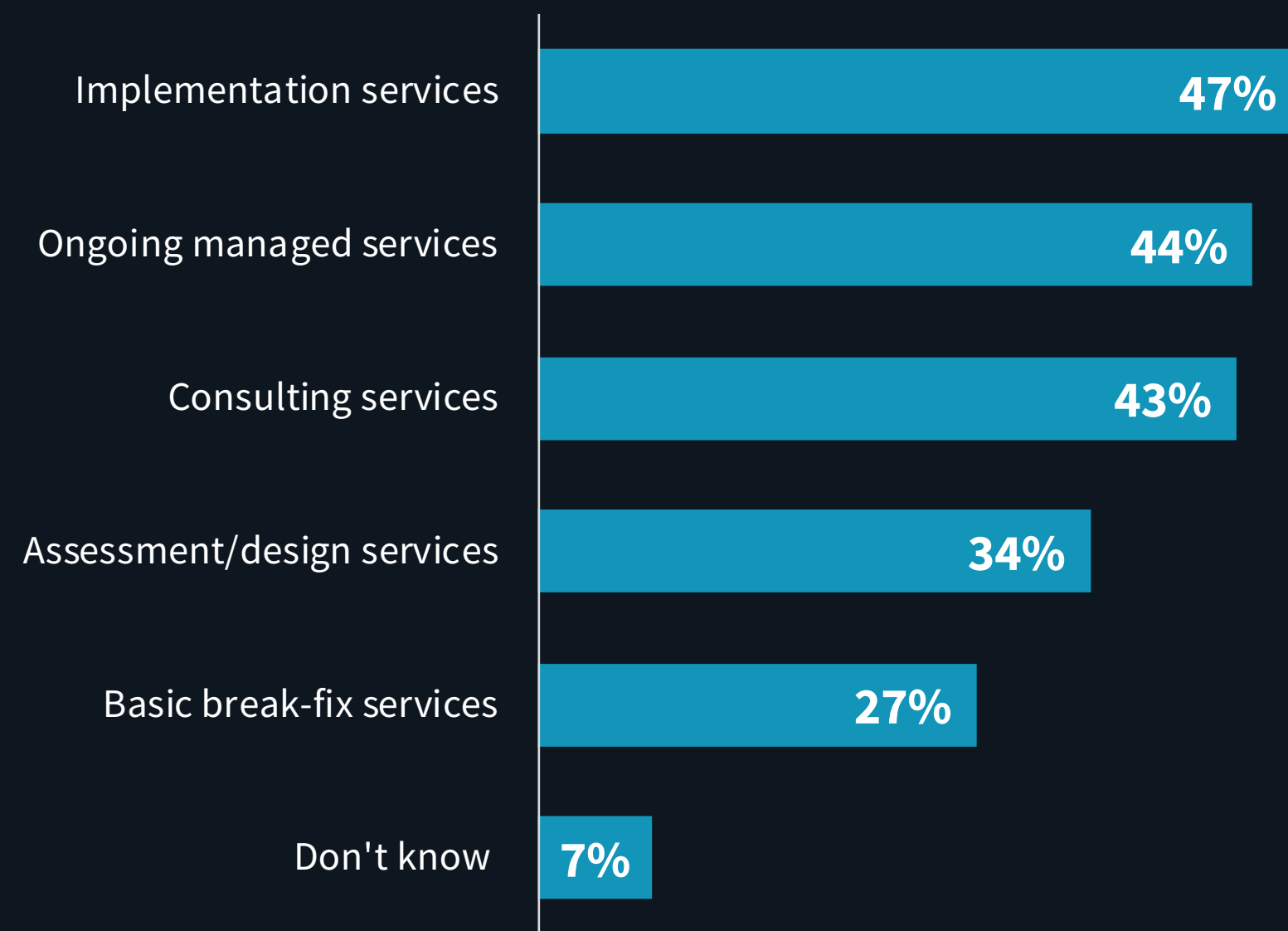
Most critical VDI/DaaS investment justification

- Don't know, 2%
- Employee experience, 11%
- Business agility, 12%
- IT efficiency, 38%
- Cost and efficiency, 14%
- Security and compliance, 23%

Impact of sustainability initiatives

- ■ Impact on VDI/DaaS strategy
- ■ Impact on endpoint device hardware strategy

	Impact on VDI/DaaS strategy	Impact on endpoint device hardware strategy
Sustainability is the most important consideration	30%	16%
Sustainability is one of our top 5 considerations	30%	32%
Sustainability is one of many considerations	31%	36%
Sustainability is not currently a consideration	6%	10%
Don't know/no opinion	4%	5%

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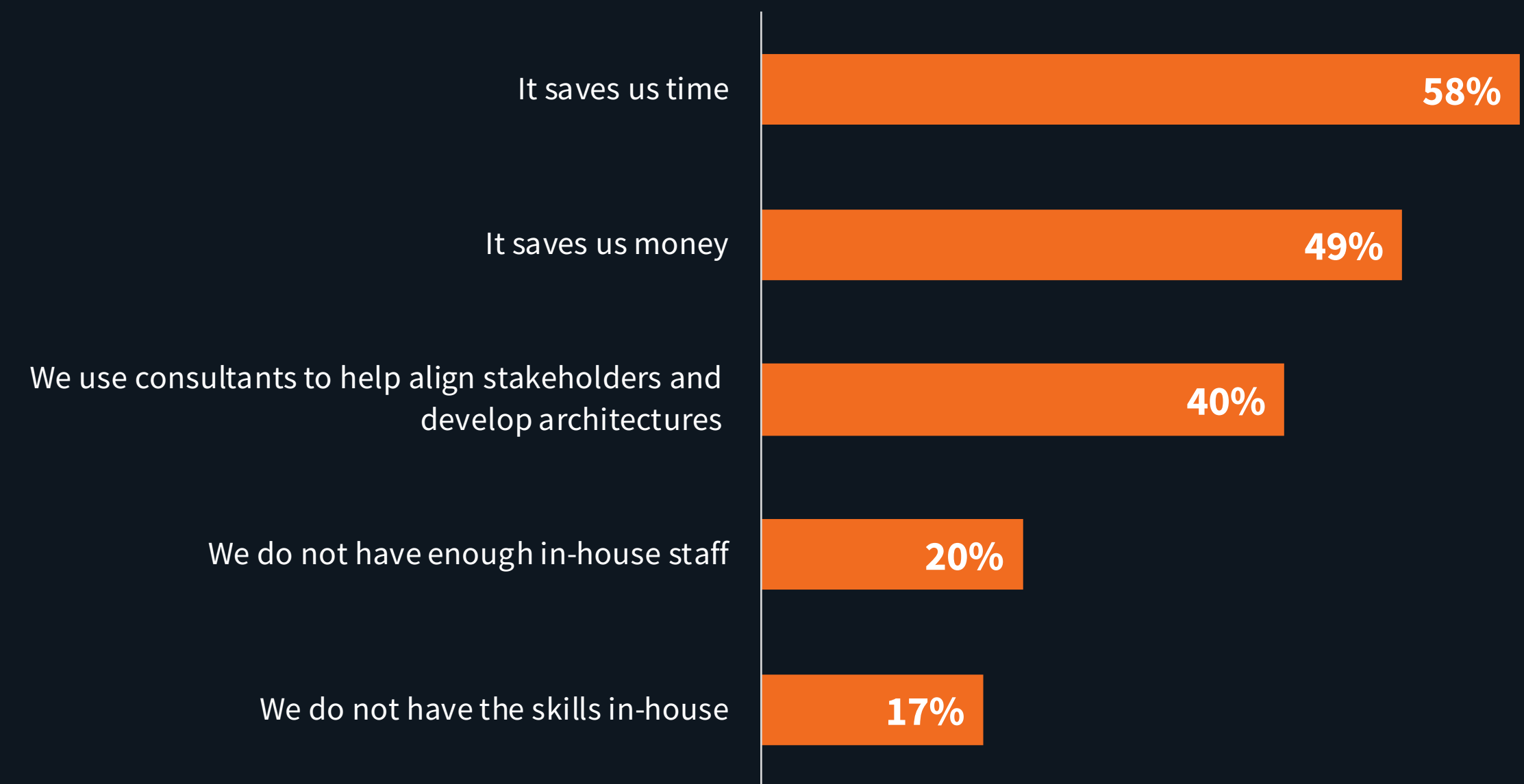Are Desktops Doomed? Trends in Digital Workspaces, VDI, and DaaS

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Third-party services are used to support VDI and DaaS deployments for time and cost savings.

Organizations lean on third parties to provide consulting services to align business objectives with specific deployment models, implement the associated technologies, and even potentially manage the digital workspace environment. Given that IT organizations are often resource-constrained, it's logical that they would use third-party services to save time and money. Since VDI/DaaS can have a company-wide impact, it's important that organizations leverage third-party services to enable businesses to confidently deploy VDI and DaaS using their experience and expertise. The upfront investment has the potential to help businesses extend the value of VDI/DaaS to a larger number of users and use cases while maintaining economic efficiency.

Use of third-party services for VDI/DaaS

Service	Percentage
Implementation services	47%
Ongoing managed services	44%
Consulting services	43%
Assessment/design services	34%
Basic break-fix services	27%
Don't know	7%

Reasons organizations use third-party services for VDI/DaaS

Reason	Percentage
It saves us time	58%
It saves us money	49%
We use consultants to help align stakeholders and develop architectures	40%
We do not have enough in-house staff	20%
We do not have the skills in-house	17%

The evolving endpoint and OS landscape is impacting VDI and DaaS strategies.

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Most organizations will have restrictions on devices used to access VDI/DaaS workspaces, and DaaS users are more likely to use smartphones and tablets for access.
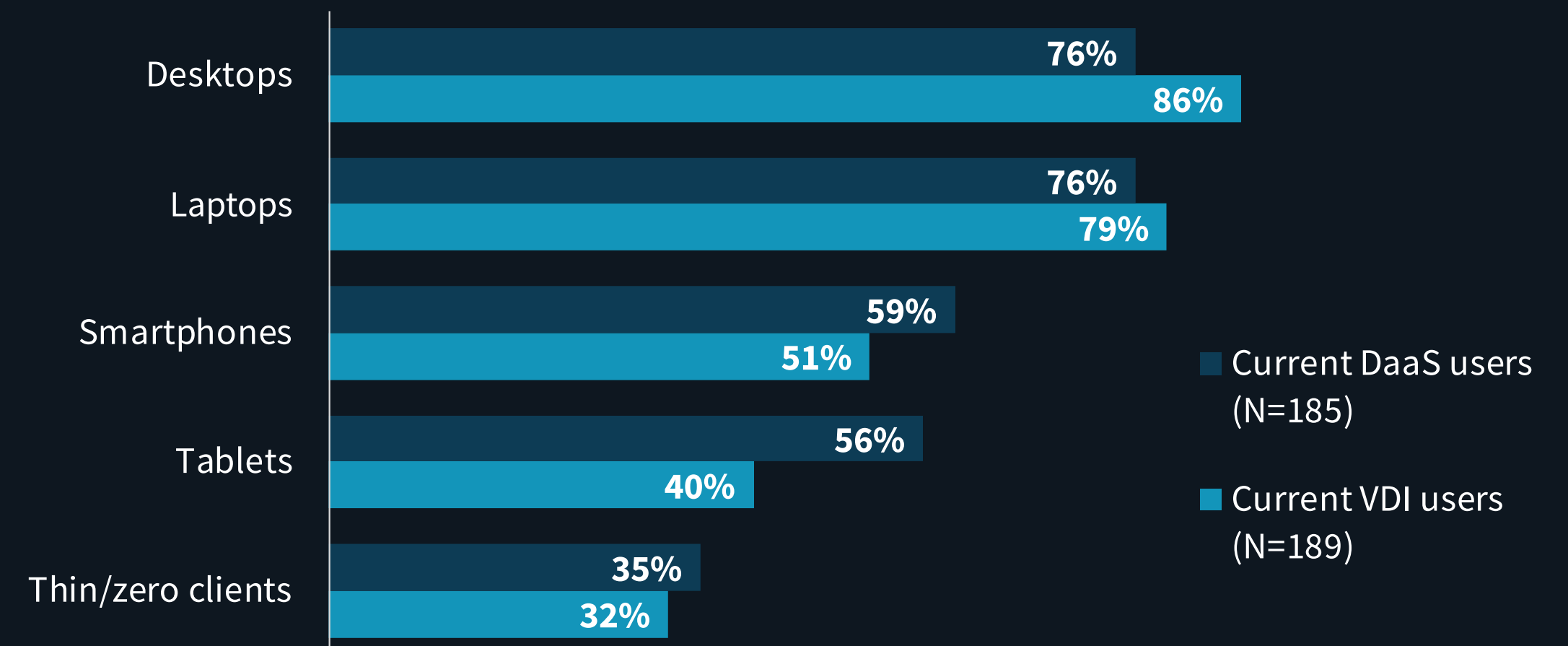
When appropriate, businesses have the opportunity to leverage employees' personal devices to deliver a corporate digital workspace. While some companies have opted to support VDI/DaaS on personal devices in an unfettered manner, most say employees must get IT approval (39%) or completely ban the use of personal devices (26%). ESG expects that as companies evaluate their business continuity plans and enable remote work (and more specifically, work-from-home policies), the usage of personal devices will become even more important. VDI and DaaS have the benefit of not executing or storing applications and data locally , but IT professionals need to think through how they can verify trust in the personal device, the network the device is on, and the user's identity.

Most VDI and DaaS deployments currently run on traditional desktops and laptops. Given that these devices are most familiar to end-users in terms of their daily computing experience, and the fact that companies are eager to extend the lifespan of these devices, it makes sense that historically these traditional devices have been the preferred choice for VDI and DaaS deployments. More widely used in DaaS environments, smartphones and tablets become viable devices when attached to a Bluetooth keyboard, mouse, and monitor and have the potential to align with modern application and digital transformation strategies.
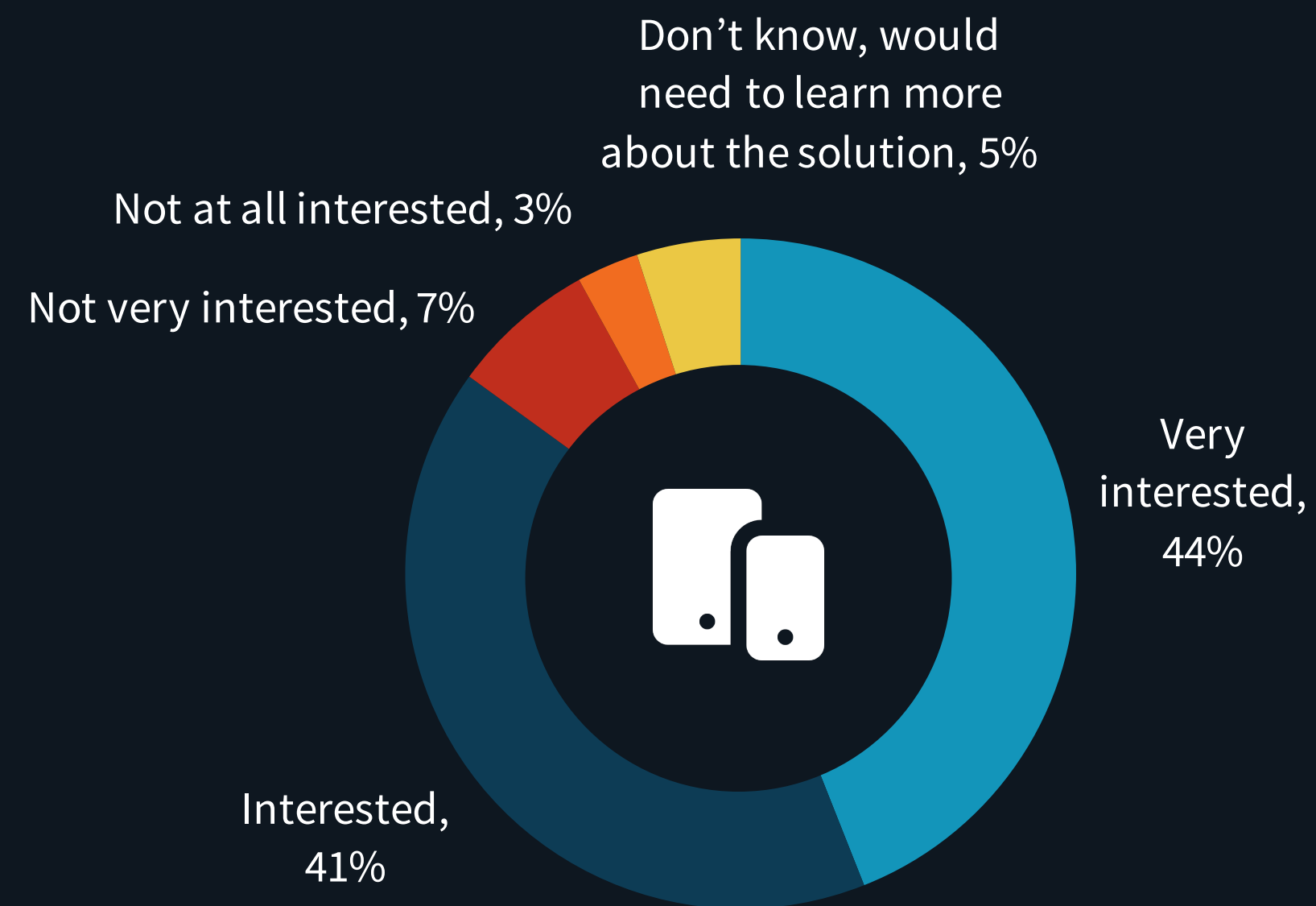
Policy on personal device usage

No, employees must use company-provided devices to access VDI- and/or DaaS-based desktop environments, 26%

Yes, employees are free to use any device to access VDI- and/or DaaS-based desktop environments, 35%

Yes, but employees must get approval to use personal devices to access VDI- and/or DaaS-based desktop environments, 39%
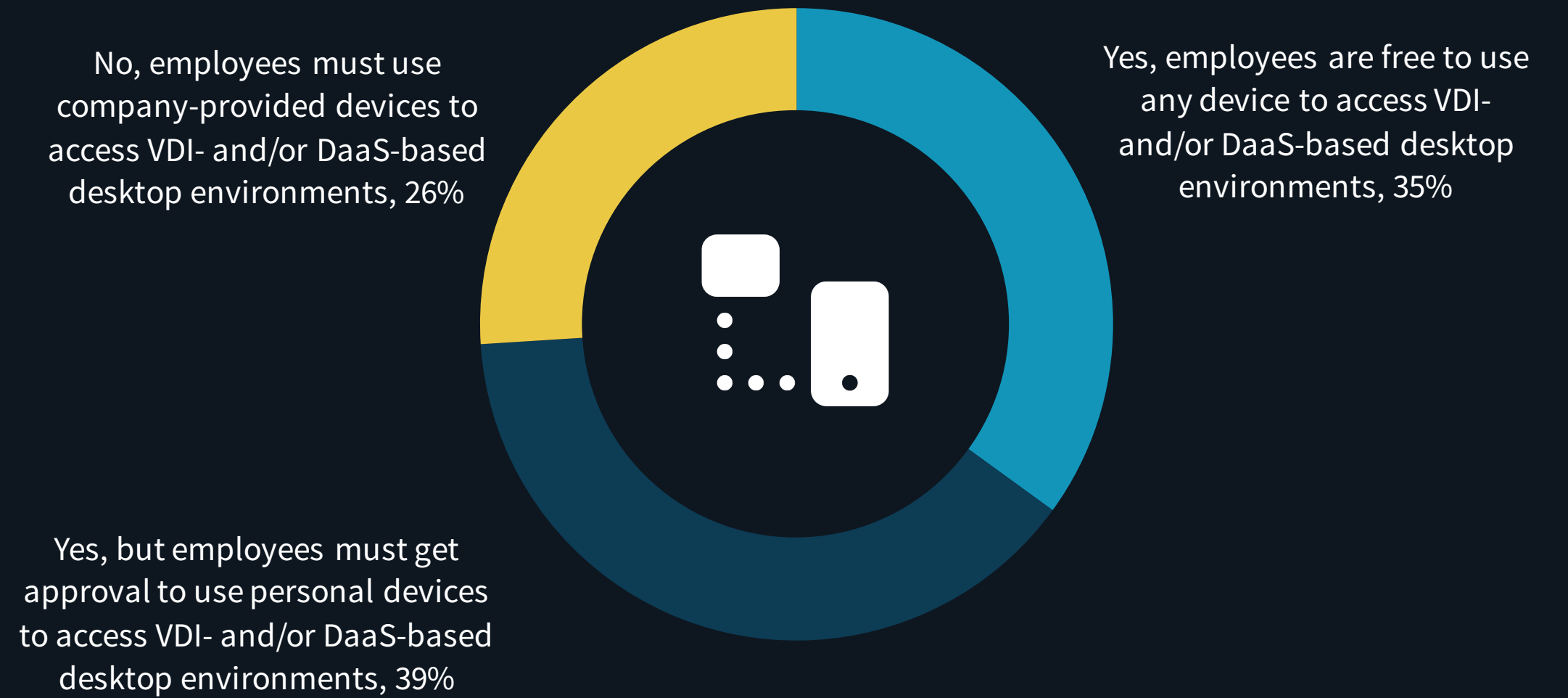
Endpoint device types used with VDI/DaaS

Device	Current DaaS users (N=185)	Current VDI users (N=189)
Desktops	76%	86%
Laptops	76%	79%
Smartphones	59%	51%
Tablets	56%	40%
Thin/zero clients	35%	32%

■ Current DaaS users (N=185)

■ Current VDI users (N=189)

RESEARCH HIGHLIGHTS:
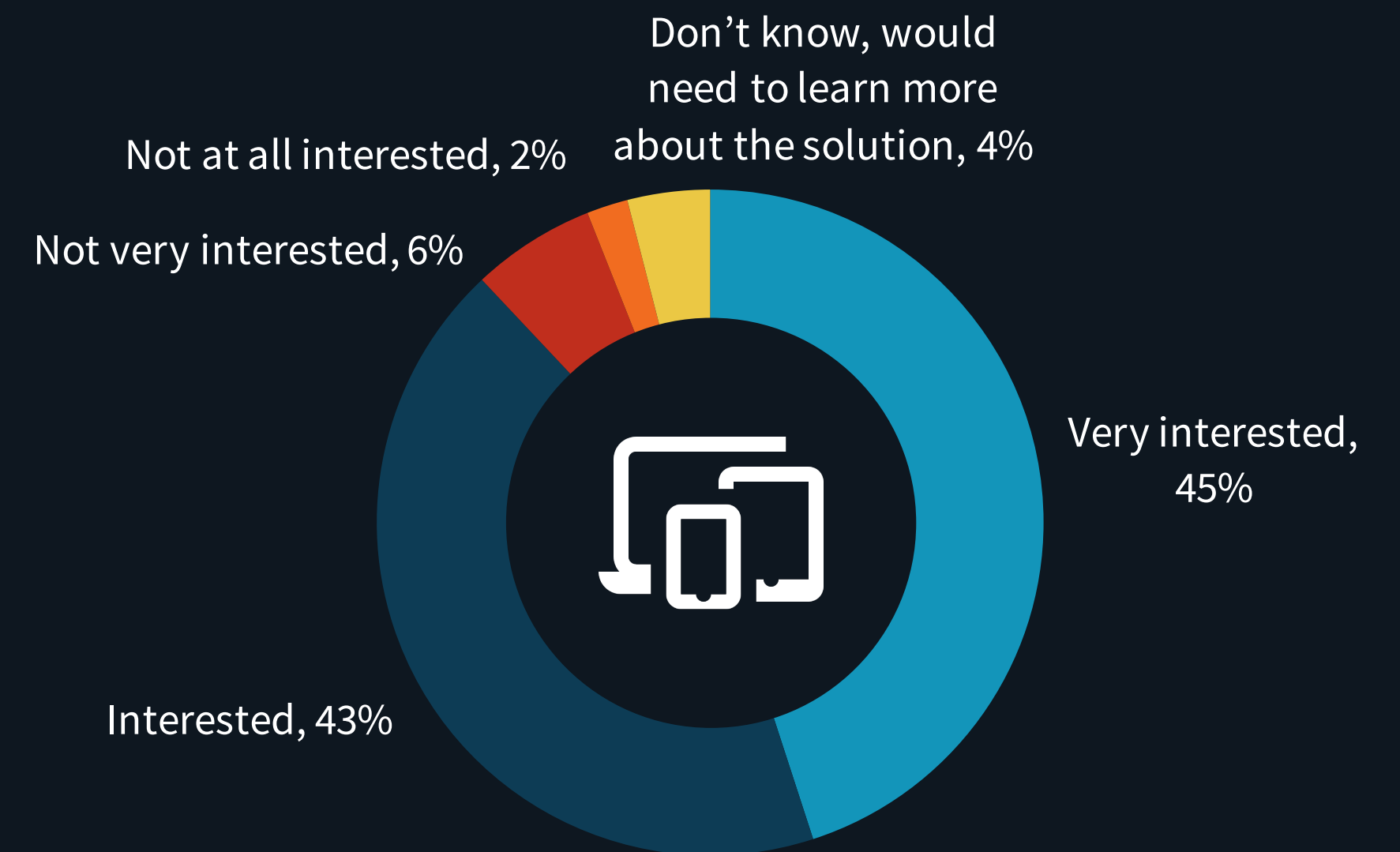Are Desktops Doomed? Trends in Digital Workspaces, VDI, and DaaS

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There is significant interest in using smartphones and non-Windows devices to access VDI/DaaS images.

VDI and DaaS both present an ideal opportunity to consider alternative endpoint devices. ESG discovered a high interest in organizations using either a smartphone connected to a physical keyboard, mouse, and monitor or a non-Windows device as the endpoint of choice for VDI/DaaS. These choices highlight that organizations are willing to look beyond current Microsoft Windows-based devices and consider alternatives that leverage the power of a smartphone or a non-Windows device like a Chromebook or MacBook.

Interest in using smartphones as VDI/DaaS access devices

Don't know, would need to learn more about the solution, 5%

Not at all interested, 3%

Not very interested, 7%

Very interested, 44%

Interested, 41%

Interest in using non-Windows devices to access VDI/DaaS

Don't know, would need to learn more about the solution, 4%

Not at all interested, 2%

Not very interested, 6%

Very interested, 45%

Interested, 43%

RESEARCH HIGHLIGHTS:
Are Desktops Doomed? Trends in Digital Workspaces, VDI, and DaaS

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NetApp

NetApp Virtual Desktop Service (VDS) is NetApp's SaaS solution to automatically provision, deploy, orchestrate and manage virtual desktops in any cloud environment, or even on-premise. NetApp's VDS extends cloud capabilities by delivering a global control plane to manage virtual desktops through all phases of the desktop lifecycle. VDS is a flexible solution, with open REST APIs, that is interoperable with your cloud of choice and your desktop devices. VDS supports Remote Desktop Services (RDS) on major public cloud environments including Microsoft Azure, Amazon Web Services, Google Cloud Platform as well as on-premise HCI environments with VMware. VDS also provides native support for Microsoft's Windows Virtual Desktop (WVD) solution in Microsoft Azure.

[LEARN MORE]

About ESG

Enterprise Strategy Group is an IT analyst, research, validation, and strategy firm that provides market intelligence and actionable insight to the global IT community.

RESEARCH HIGHLIGHTS:
Are Desktops Doomed? Trends in Digital Workspaces, VDI, and DaaS
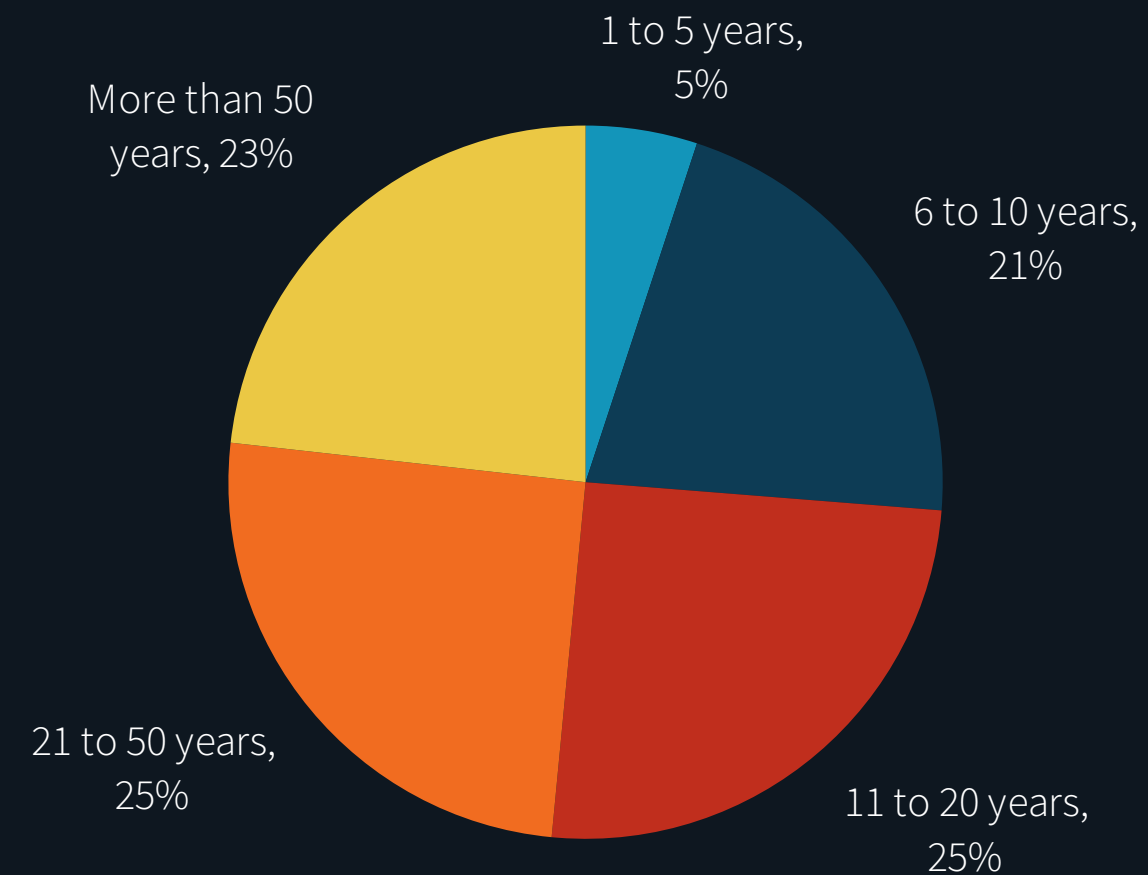
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Research Methodology

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) between February 25, 2020 and March 8, 2020. To qualify for this survey, respondents were required to be IT professionals personally responsible for/involved in the purchase process for productivity applications and endpoint devices, including VDI/DaaS solutions. 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 354 IT professionals.
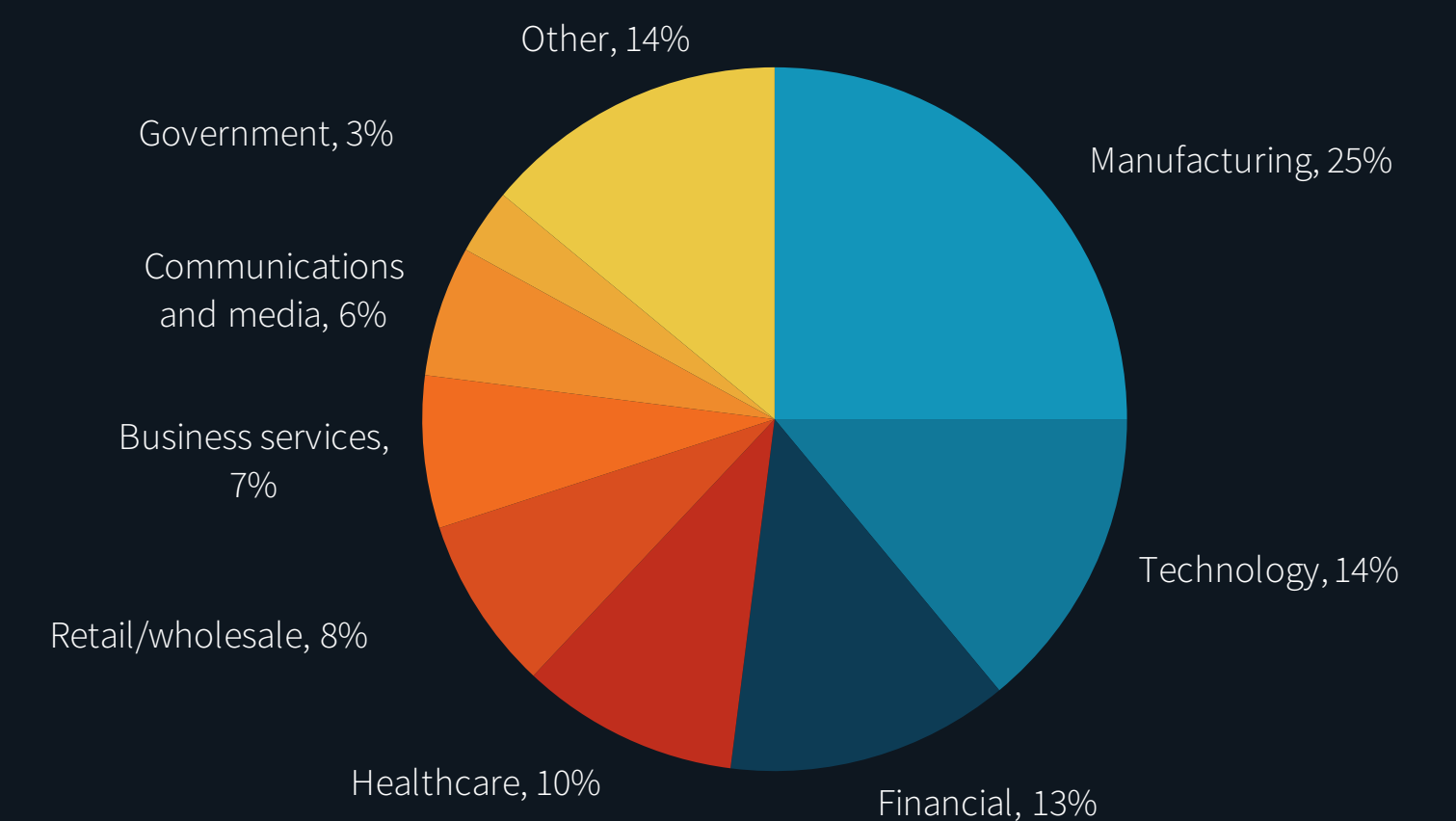
RESPONDENTS BY NUMBER OF EMPLOYEES

20,000 or more, 12%
100 to 249, 4%
250 to 499, 9%
10,000 to 19,999, 6%
500 to 999, 20%
5,000 to 9,999, 10%
2,500 to 4,999, 18%
1,000 to 2,499, 21%
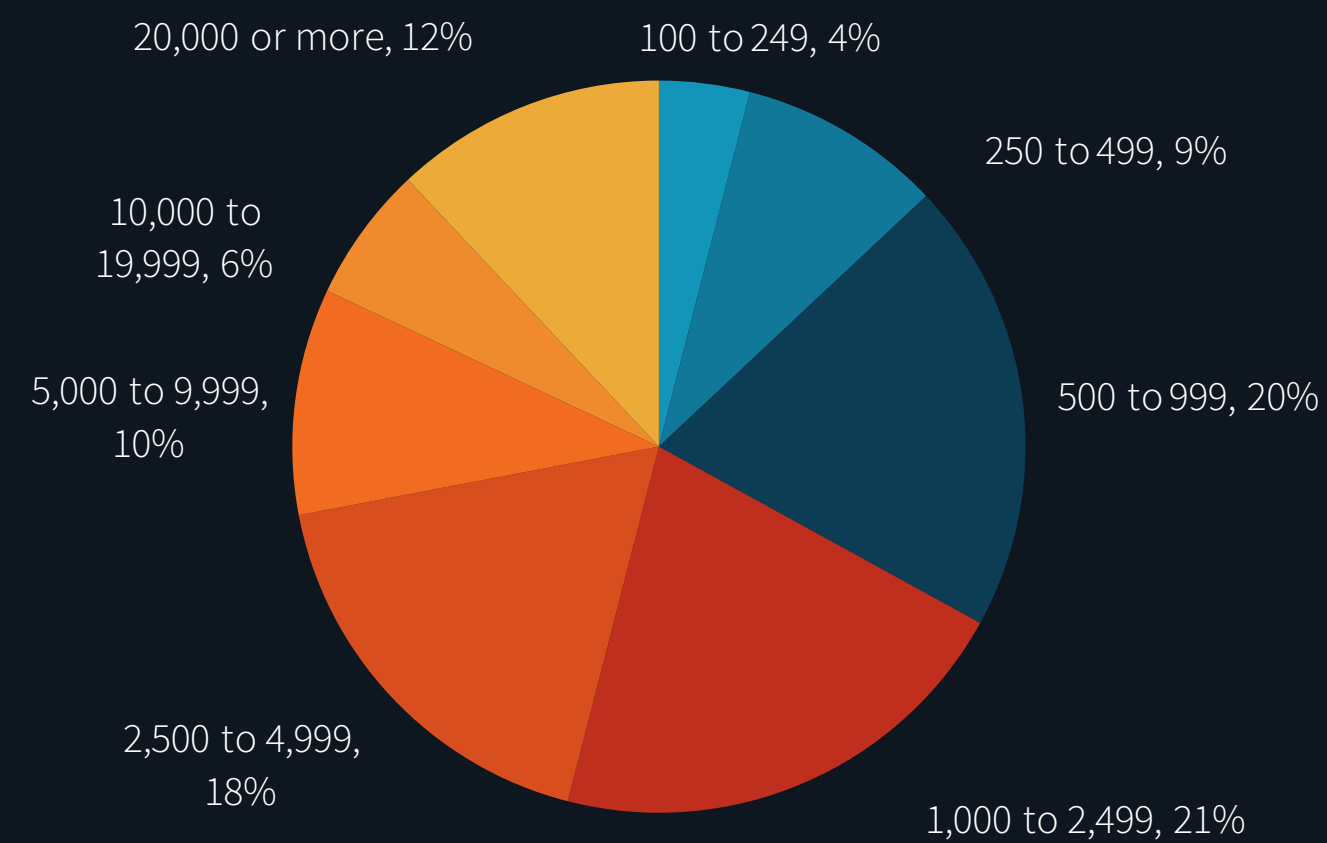
RESPONDENTS BY AGE OF COMPANY

1 to 5 years, 5%
More than 50 years, 23%
6 to 10 years, 21%
21 to 50 years, 25%
11 to 20 years, 25%

RESPONDENTS BY INDUSTRY

Other, 14%
Government, 3%
Manufacturing, 25%
Communications and media, 6%
Business services, 7%
Technology, 14%
Retail/wholesale, 8%
Healthcare, 10%
Financial, 13%

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