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The Cloud Worker Revolution Accelerates

How Cloud-Based Tools Bridge IT And Information Worker Needs In A Hybrid-Work World

A FORRESTER CONSULTING THOUGHT LEADERSHIP PAPER COMMISSIONED BY GOOGLE, MAY 2022

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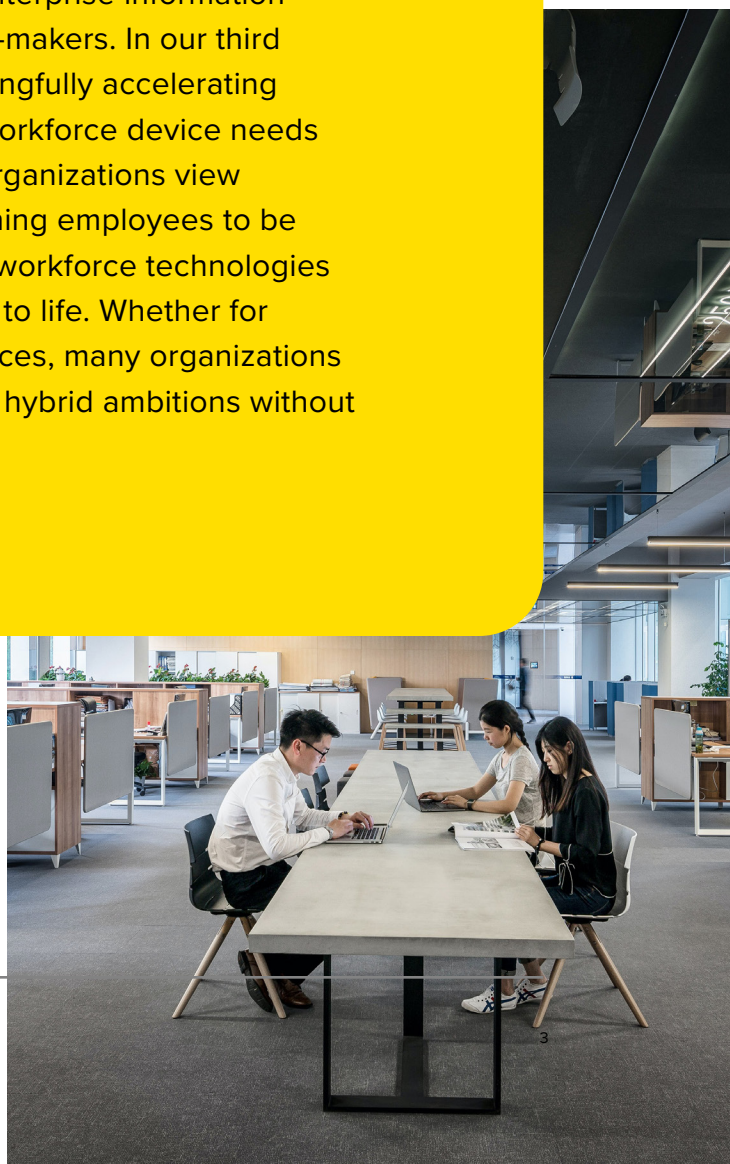
Executive Summary

More than two years since the start of the COVID-19 pandemic, organizations not already focused on their employees' experience have become painfully aware that empowering their staff with the tools that allow them to be most productive is not merely a nice thing to do — it's business-critical. In this dynamic environment, employees are demanding more autonomy over how and where they work, which presents new challenges for the IT leaders who support them. As organizations embrace hybrid-work programs, cloud-based applications and devices offer flexibility, manageability, and security benefits that are gaining more attention from IT leaders and workers alike.

In December 2021, Google commissioned Forrester Consulting to refresh an ongoing study focused on how enterprise cloud adoption is transforming employee productivity needs and technology preferences. Echoing the methodology used in 2018 and 2020, Forrester conducted online surveys with two global audiences: 1,273 enterprise information workers and 1,057 enterprise technology decision-makers. In our third biennial study, we found that hybrid work is meaningfully accelerating cloud's upward trajectory and rapidly redefining workforce device needs for a cloud-enabled workforce. Forward-looking organizations view hybrid work as an opportunity to empower discerning employees to be productive in all circumstances. In turn, they treat workforce technologies as a strategic asset capable of bringing this vision to life. Whether for applications, operating systems, browsers, or devices, many organizations are turning to cloud-first approaches to meet their hybrid ambitions without sacrificing IT goals.



Key Findings

Driven by hybrid work, cloud-first strategies have grown by nearly 100%. While enterprise cloud migration has been in motion for some time, pandemic necessity for hybrid work ignited adoption. Now, driven more by workers' new productivity preferences than the pandemic, hybrid work continues to drive cloud momentum. More than 75% of IT leaders say hybrid work has accelerated their organization's use of cloud and cloud-based apps. Today, nearly half describe their organization's strategy for new apps as cloud-first, which is a 96% increase from 2018.

The line separating traditional and cloud workers is blurring. During the last few years, we have observed a marked increase of "cloud workers." These workers — characterized by the time they spend on a browser for work — have been at the forefront of a transition to flexible work and real-time collaboration. Today, nearly half of information workers are cloud workers, which is up from just more than a third before the pandemic. Recognizing the critical role of browsers, IT leaders have made 58% of their organizations' apps browser-accessible, and they expect that value to grow by 14% by 2024.

Cloud-based computers are helping companies support hybrid work. While cloud-enabled hybrid work provides workers the flexibility they crave, it also requires specific IT considerations. To better meet hybrid workers' mobility needs and IT leaders' management, ROI, and security goals, workforce devices are more likely to be lighter and cloud-oriented. Cloud-based computers meet this profile and are one option that a greater number of companies are considering.

Modern Work Is Hybrid And Cloud-Enabled

It took a pandemic to change the decades-long slow growth in hybrid office/remote work arrangements; today, every organization has a rare opportunity and urgent need to get hybrid working right.[1] The growth of hybrid work could be the biggest change in how work gets done since World War II.[2] Empowering employees to be productive in all circumstances and locations is now essential to meeting employee and business continuity needs. In surveying more than 1,000 global information workers and technology leaders, we found that:

- **Hybrid is accelerating changes in how people work.** While pandemic necessity may have fast-tracked employee mobility needs, familiarity has led to an expectation for hybrid work options that will stick around long after necessity has lifted. Indeed, "switching" between work scenarios is now part of many workers' routines, with most (57%) saying they like to switch between devices to get work done. This represents a 14% increase since 2020 and a 30% increase since 2018. A greater number are also comfortable switching between the types of applications (76% today versus 69% in 2020) and operating systems (67% versus 60%) they use if it means greater flexibility and easier access.
- **Across industries, hybrid work is poised to grow.** Some companies are better suited for hybrid work than others, but that should not prevent an organization from implementing a hybrid-work program. Even in more traditional verticals like government, 35% of information workers are hybrid workers, which mirrors the average. Information workers across industries expect the prevalence of hybrid work at their organizations to increase more than current levels (by 10 percentage points in manufacturing, more than 15 points in retail and healthcare, and more than 20 points in government and financial services).
- **Leaders recognize that hybrid work necessitates new technology strategies.** IT leaders understand the importance of empowering employees to work how, when, and where they prefer. Up to 87% describe this effort as business-critical. This includes empowering

employees with tools that help them succeed at hybrid work, which 86% of technology leaders now say is vital. At least 60% of IT decision-makers across verticals are prioritizing support for hybrid-work experiences, with those in manufacturing (70%), retail (70%), and financial services (72%) leading the way.

A STRONG CLOUD FOUNDATION IS A PREREQUISITE TO MEETING TODAY'S WORKFORCE TECHNOLOGY NEEDS

The hybrid-work revolution has, by necessity, accelerated the cloud revolution. Seventy-nine percent of technology leaders report that the rise of hybrid-work environments has increased their organization's use of cloud and accelerated its provisioning of cloud-based apps.

This shift is reflected in their strategy for deploying new business applications. Unlike in 2018 and 2020, when technology leaders were most likely to give priority to the cloud for new business apps while continuing to use on-premises solutions in some areas, the trend reversed in 2021. Now organizations are more likely to describe their strategy as "cloud-first" (see Figure 1). Retail companies are most likely to be cloud-first (55%), while those in manufacturing (43%) and government (44%) lag slightly behind financial services (46%) and healthcare (48%) organizations.

The number of organizations with a cloud-first strategy has increased **24%** from 2020 and **96%** from 2018.

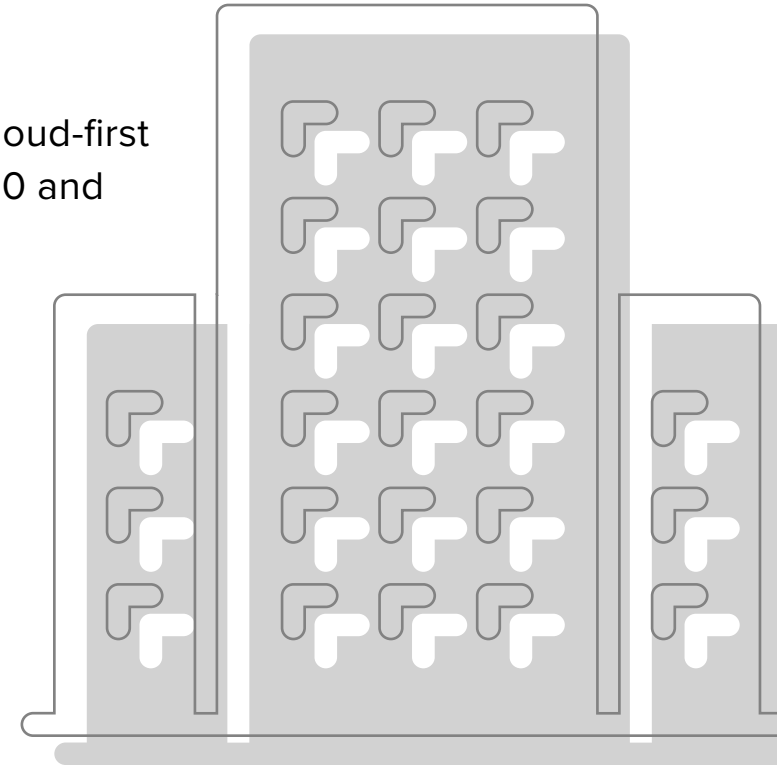
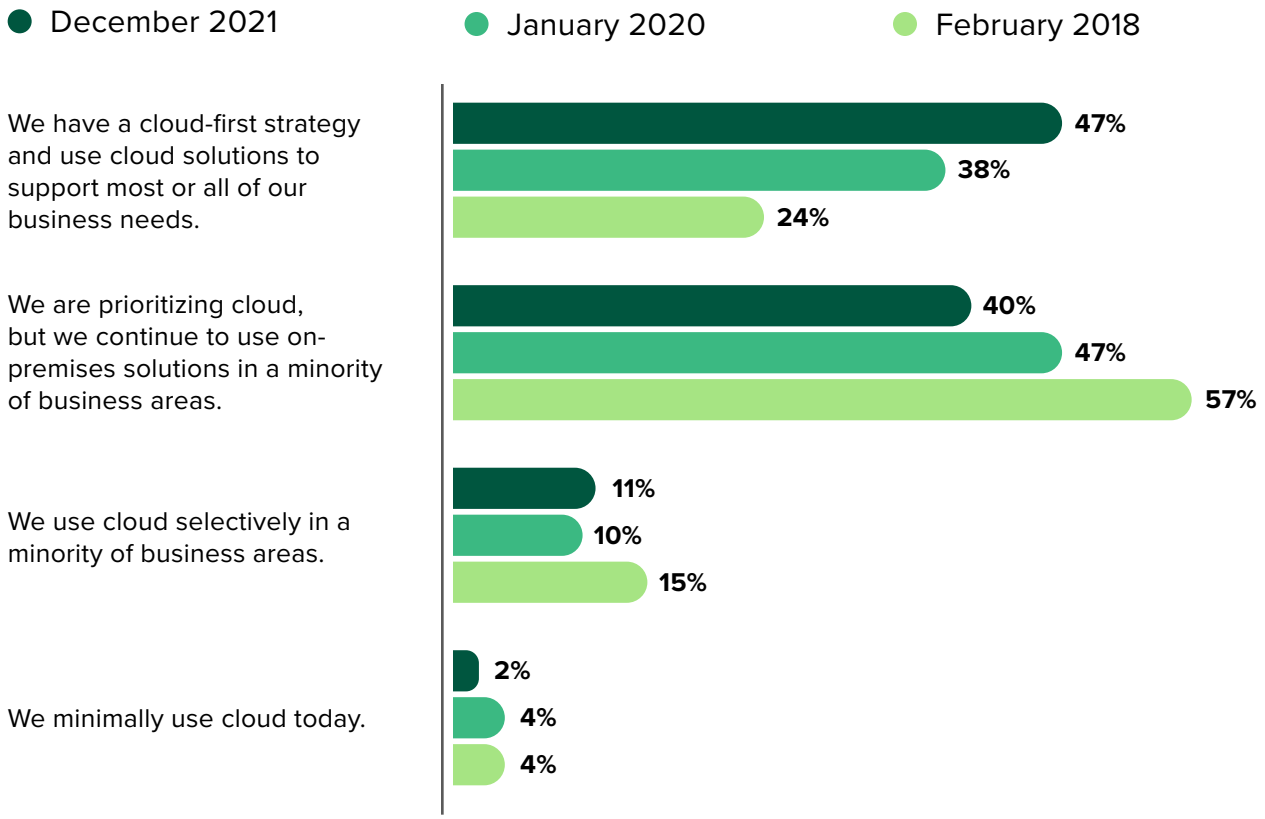


Figure 1

"Which of the following best represents your firm's/company's strategy for deploying new business applications?"



2018 Base: 1,060 enterprise technology decision-makers who oversee workforce devices and cloud applications
2020 Base: 969 enterprise technology decision-makers who oversee workforce devices and cloud applications
2021 Base: 1,057 enterprise technology decision-makers who oversee workforce devices and cloud applications
Source: A commissioned study conducted by Forrester Consulting on behalf of Google, February 2018, January 2020, and December 2021

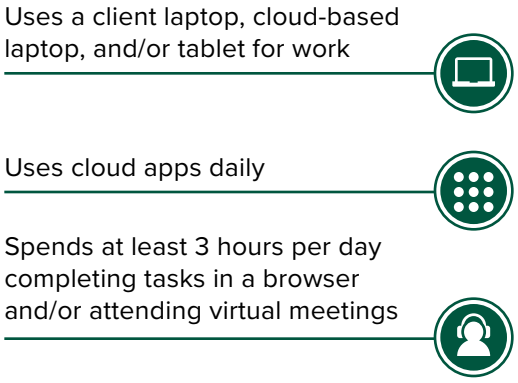
HYBRID HAS ACCELERATED THE TRANSFORMATION OF INFORMATION WORKERS INTO CLOUD WORKERS

For the last few years, we have been tracking what was once a small segment of workers who were more often working on a browser and had an affinity for flexible work styles and real-time collaboration (see Figure 2). We predicted that these cloud workers would become a high-growth segment as enterprise cloud adoption grew. Before the pandemic, just 37% of workers were cloud workers. Now, powered by organizations' cloud-first strategies and the desires of workers themselves, they make up 47% of workforce, which is a 27% increase.

Cloud workers continue to have higher technology demands than the typical information worker. But they are increasingly harder to distinguish from traditional workers as all workers gravitate to cloud-enabled hybrid work and flexible work tools that enable them to collaborate with colleagues and get work done wherever they are (see Figure 3). Just as they illuminated the usefulness of cloud-based work long before the pandemic forced many traditional workers into remote settings, cloud workers are also demonstrating the value of turning a pandemic-era hybrid-work policy into a long-term strategy for workers who want it, and many do. Roughly half of information workers (52%) say their ideal workplan for the future is hybrid, which is a value that is largely consistent across industries.

Figure 2

What Defines A Cloud Worker?



In 2021, **47%** of workers were cloud workers, compared to **37%** in 2020.

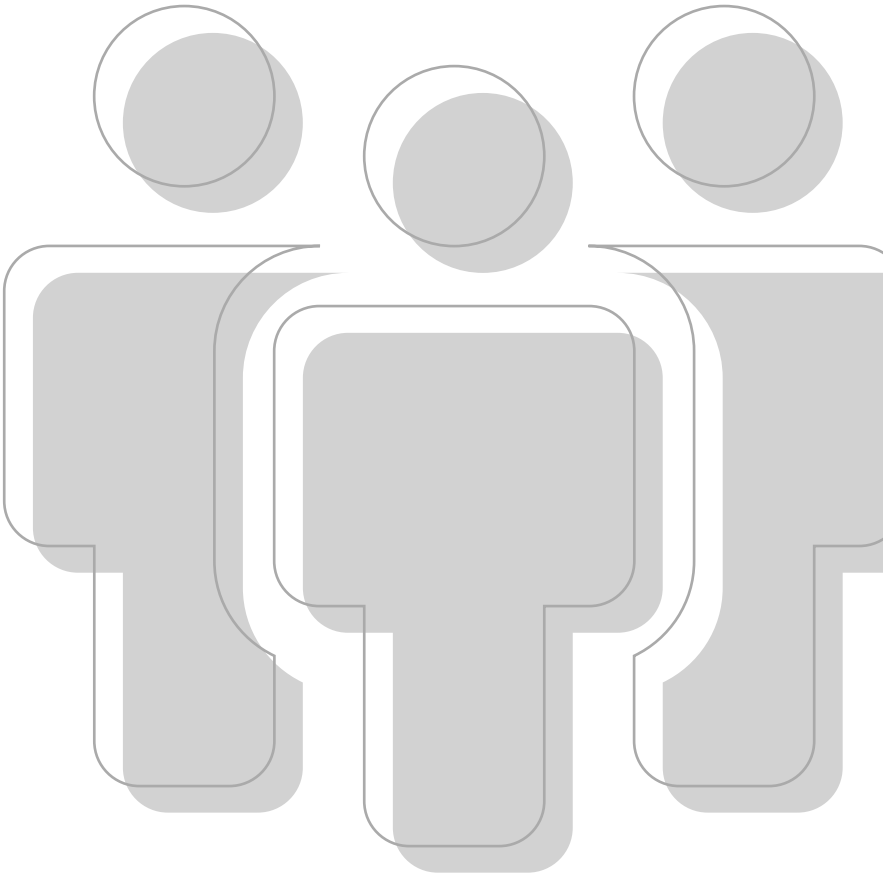
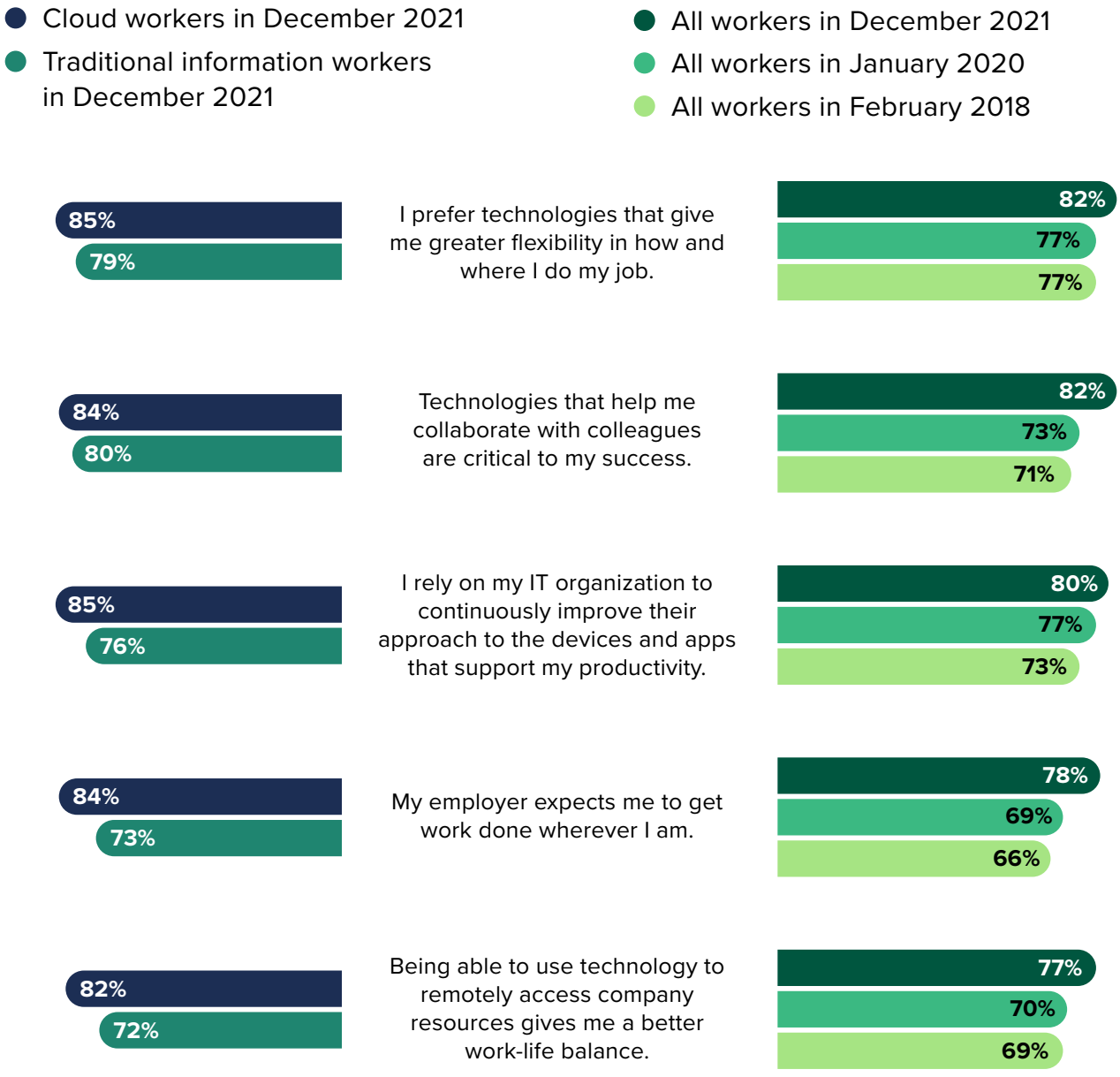


Figure 3

“In reflecting on the technologies that support your current job role, to what extent do you agree with the following statements?”

(Showing “Somewhat agree”/“Strongly agree”)



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2020 Base: 969 enterprise technology decision-makers who oversee workforce devices and cloud applications
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Source: A commissioned study conducted by Forrester Consulting on behalf of Google, February 2018, January 2020, and December 2021

Supporting Modern Workers Is A Balancing Act For IT

To support employees' flexible work needs, IT leaders must contend with how to mitigate the associated cost and security implications, which, depending on their approach, can be significant. Consider that as much as 47% of organizations' hardware and infrastructure spending goes toward end-user hardware like PCs and laptops. At the same time, work devices represent a vulnerable point in companies' security strategies; protecting confidential company or personal data stored on them is vital. In 2020, 21% of enterprise decision-makers indicated that sensitive company data was compromised three to five times in the last year, and 25% of those whose company suffered an attack said the attack targeted mobile devices.[3]

MORE THAN

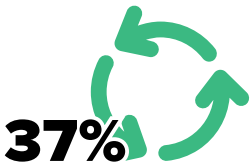
80%

of workers agree it's important that work devices have features aimed at preventing the misuse or loss of sensitive data and files.

With new business models, supply-chain disruption, and an uptick in resignations brought on by the pandemic and other systemic risks, the complexity and importance of workforce device management is rising. Aside from challenges with maintaining a secure environment across devices (32%) and the rising cost of ownership (30%), leaders face a host of other obstacles, including complex policy management and time-consuming troubleshooting and provisioning tasks (see Figure 4). IT leaders across industries share many of the same obstacles, but those in government are more likely to suffer from all of them, except securing older devices/operating systems (the top challenge cited by IT leaders in manufacturing) and keeping antivirus software/security patches updated (which is most often reported by those in healthcare).

Figure 4

“What challenges does your IT organization face with the devices that support workforce productivity at your organization?”



37%

Keeping antivirus software and security patches updated

36%

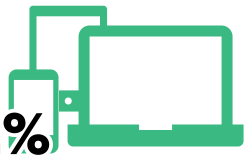
Security concerns due to potential device theft or loss

35%

Concerns about security of older devices/ operating systems

32%

Too much time spent troubleshooting/fixing device issues



32%

Maintaining a secure environment across devices is difficult

32%

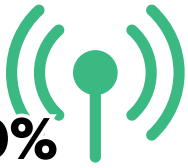
Difficulty keeping pace with changing employee needs

31%

Complexity of policy management across different platforms

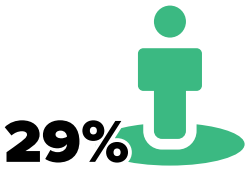
30%

Rising costs/total cost of ownership (TCO) is too high



30%

Managing remote devices effectively



29%

Lost employee productivity due to device issues

29%

Too much time spent provisioning and testing new devices

2021 Base: 1,057 enterprise technology decision-makers who oversee workforce devices and cloud applications
Source: A commissioned study conducted by Forrester Consulting on behalf of Google, December 2021

Effective Technology Strategies Provide Workers Flexibility And Autonomy

When it comes to adopting hybrid work, selecting an arbitrary number of days all workers are permitted to work remote versus in-person is backwards.[4] Instead, the focus should be on understanding the different needs of various employees and empowering them to work in whatever setting allows them to be most productive toward attaining company goals. The same mindset applies when selecting workforce technology.

64%

of information workers say having autonomy to choose the devices, apps, and services they use for work is important.[6]

Organizations that treat devices as a commodity risk falling out of step with their employees.[5] Today, more than half of workers (55%) say the technology they are provided influences their employment decisions, which is an increase of 45% since 2018 when just 38% felt the same. Fortunately, many IT leaders have abandoned the one-size-fits-all approach. Since 2020, they are 73% more likely to allow employees to select from a variety of makes and models and 11% more likely to say employee preference is a "very important" or "extremely important" consideration when selecting their company's preferred browsers.

THE PANDEMIC IS ADVANCING DEVICE TRANSFORMATIONS IN KEY WAYS

While the pandemic onset was just two years ago, pre-pandemic workforce technology strategies have already become dated. More than 60% of information workers across industries report that their device needs have changed since the pandemic, with those in financial services (66%), government (67%), and retail (75%) most likely to agree. In line with Forrester's own research, our study reveals that relative to pre-pandemic levels, the work devices of today and tomorrow are more likely to be:

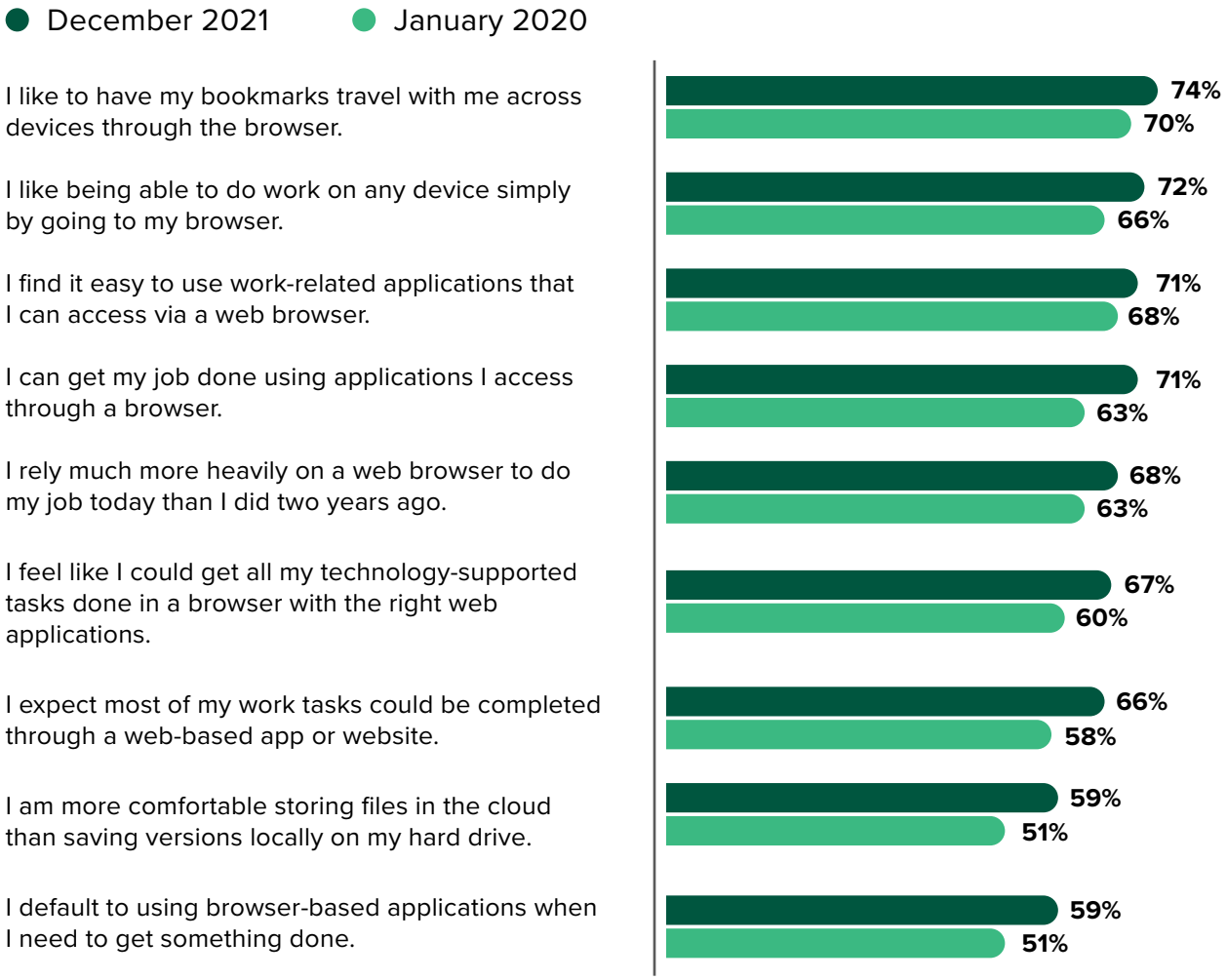
- **Speciated.** In the face of supply-chain disruptions, diverse device form factors have emerged to address employee mobility needs, fracturing the 1:1 device to employee computing model.[6] The proportion of information workers using one device for work is small and shrinking (they represent just 16% of workers today, which is a 31% drop in two years). During a given week, workers switch between three devices on average.
- **Lighter.** The pandemic accelerated the desktop's downward slope; just 48% of information workers use them. Not surprisingly, laptops dominate instead (70%). While some computing tasks will continue to rely on "heavy" desktops or workstations for key use cases, many employees can now complete most tasks on a lighter device in terms of both physical and operating system lightness (e.g., smartphone, tablet, wearable).[7] Today, 81% use a lighter device at least weekly for work, which is a 7% uptick since 2020.
- **Cloud-oriented.** During the pandemic, deploying thick client apps to a remote workforce proved difficult, prompting a move to browser-based software-as-a-service (SaaS) apps.[8] This shift is evident in employee behavior. Across the board, employees' reliance on browser-based work has grown since before the pandemic (see Figure 5). Notably, 66% expect to complete most of their work tasks through a browser, which is up by 8 percentage points since the start of 2020. Employees' comfort levels have grown quickly — rising nine percentage points for both comfort with cloud file storage and defaulting to browser-based applications to get work done. IT leaders are rising to meet workers' cloud expectations: They estimate 58% of their enterprises' apps can be accessed via a browser today, and they predict that that number will grow by 14% in two years.

Cloud-based end-user computing has significantly or completely evolved the workforce technology approach of **66%** of IT leaders, which is a **10%** increase since 2020.

Figure 5

"In reflecting on the technologies that support your current job role, to what extent do you agree with the following statements?"

(Showing "Agree"/"Strongly agree")



2020 Base: 1,356 global enterprise information workers who use cloud applications at least weekly for work
2021 Base: 1,057 enterprise technology decision-makers who oversee workforce devices and cloud applications
Source: A commissioned study conducted by Forrester Consulting on behalf of Google, January 2020 and December 2021

78%

of IT leaders who have adopted or plan to adopt cloud-based computers say the devices offer easier deployment, manageability, and better end-user experiences than legacy PC devices.

THE TIME IS RIGHT TO EXPLORE THE POTENTIAL USEFULNESS OF CLOUD-BASED COMPUTERS

Recent changes to employee work styles and technology preferences mean that now is a good time to recalibrate workforce devices. While not suitable for all users, cloud-based computers (which operate through a browser interface) are one option that warrants another look.[9] Thirty-eight percent of IT leaders have implemented cloud-based computers for their organizations' workforces, and 58% of those who use a cloud-based computer report spending three or more hours per day on the device for work. If the 30% of IT leaders who have short-term plans to adopt follow through with their plans, 68% of organizations will have implemented cloud-based computers within the next 12 months.

Employees in a given role who can accomplish most of their work on browsers are good candidates for cloud-based computers.[10] Certain organizational goals make them a good choice, too. Cloud-based computers offer simple management, nearly instant deployment, zero-state security, and positive economics for most companies. Thus, companies making remote management, fast deployment, security, or low costs top requirements are more likely to benefit from adoption. While most IT leaders consider these capabilities important, those from organizations that have already adopted or plan to adopt cloud-based computers are even more likely to prioritize these needs (see Figure 6). They are also more likely to be focused on delivering hybrid-work experiences (71% vs. 61%) that need the remote management capabilities cloud-based computers can provide.

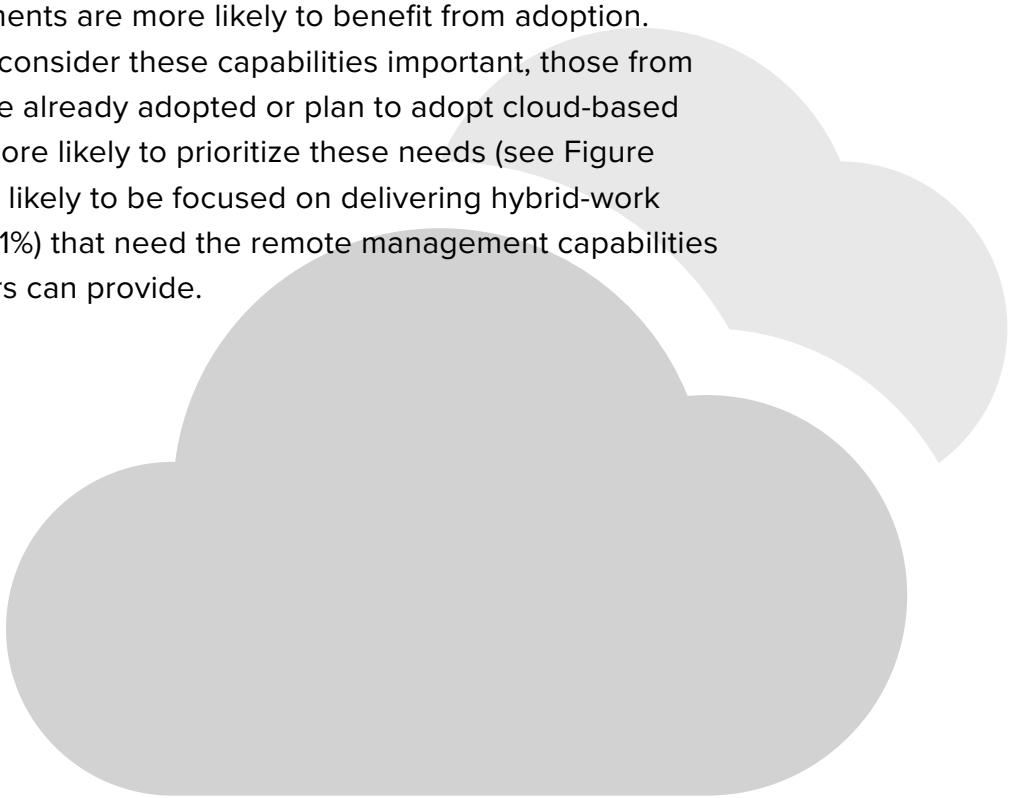
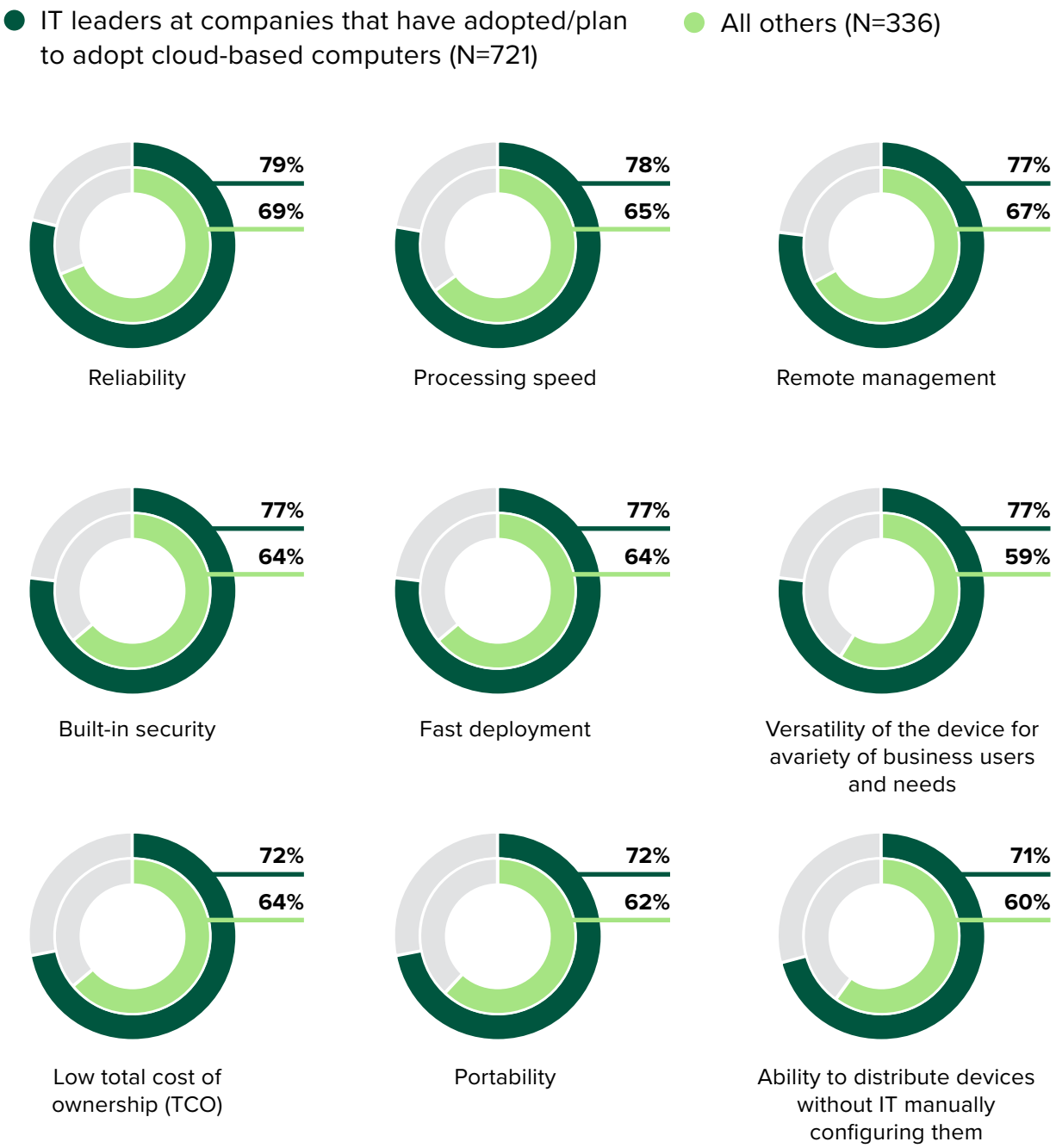


Figure 6

“When selecting laptops/workstations for the workforce, how important are the following hardware capabilities to your IT organization?”

(Showing “Very important”/“Extremely important/critical”)



2021 Base: 1,057 enterprise technology decision-makers who oversee workforce devices and cloud applications
Source: A commissioned study conducted by Forrester Consulting on behalf of Google, December 2021

Key Recommendations

The pandemic accelerated the already fast-growing trend towards cloud work: Today, 47% of information workers qualify as cloud workers, and they demand flexible work styles, turn to browsers first to get work done, and love to collaborate in real time. IT leaders are responding with cloud-oriented end-user computing approaches, more SaaS applications delivered over the web, and an increasing number of cloud-based computers.

Forrester's in-depth survey of more than 1,000 global information workers and technology leaders about their workforce technology needs yielded several important recommendations:

Transition to cloud-first employee applications.

Now that nearly half of enterprises employ a cloud-first strategy, it's time for all enterprises to audit the cloud-centricity of their employee-facing critical applications. SaaS solutions offer scalability, security, flexibility, and user-friendliness. Upgrading to SaaS is an employee-friendly move that reduces barriers. Where necessary, employing virtual desktop infrastructure (VDI) to bring legacy applications to the browser can complement this SaaS-centered strategy. Devote budget and human resources to planning and executing the digitization of enterprise workflows, and make the cloud the go-to architectural approach.

Consider the advantages of cloud-based computers.

Cloud-based computers present lower management costs, stronger security, and better employee experiences. There's no more imaging PCs, and they require less time to manage. They can offer attractive hardware economics compared to client devices. Increasingly, they can be used to access legacy and Windows apps through virtualization, replacing thin clients, which are expensive and perform poorly by comparison. These zero-state devices offer built-in production from malware, ransomware, and sandboxed environments conducive to strong endpoint security. And for cloud workers, the lack of interruptions created by OS updates can save time and reduce frustrations at work. Assess how these advantages could benefit your workers.

Make the browser a connection point for anywhere work.

Two-thirds of organizations are moving toward anywhere work, which is a more distributed workplace in which employees have more opportunities to choose where they work (e.g., office, home, or other locations) in hybrid or even remote-first fashion.[11] Browsers play a key role in empowering workers for cross-device experiences, making their bookmarks and, increasingly, their applications portable and allowing easy access. This simplicity will also drive employee experience by saving time and the cognitive load associated with accessing multiple diverse apps across different interfaces.

Appendix A: Methodology

In this study, Forrester conducted surveys of two audiences to evaluate the evolving technology needs of employees and the ways decision-makers are planning to meet these needs.

The first audience included 1,057 enterprise technology decision-makers who oversee workforce devices and cloud applications. Respondents were decision-makers in IT and business who are responsible for making or influencing decisions related to devices and applications their companies' employees use for work and collaboration. Questions provided to the participants asked about their companies' strategies for deploying new business applications, the types of devices that employees currently use for work purposes, and the challenges their IT organizations face with devices that support worker productivity.

The second audience included 1,273 global enterprise information workers who use cloud applications for work at least weekly. Questions provided to the participants asked about the types of devices they currently use for work purposes, the types of devices they plan to use in the future, and the importance of specific technology capabilities.

Respondents were offered a small incentive as a thank you for time spent on the survey. The study began in November 2021 and was completed in December 2021.

Appendix B: Demographics

DECISION MAKERS

REGION	
North America	**36%**
EMEA	**38%**
APAC	**28%**

TOP INDUSTRIES	
Retail	**23%**
Financial services and insurance	**19%**
Healthcare	**19%**
Manufacturing and materials	**13%**
Government	**13%**

COMPANY SIZE	
500 to 999 employees	**1%**
1,000 to 4,999 employees	**63%**
5,000 to 19,999 employees	**26%**
20,000 employees or more	**11%**

SENIORITY	
C-level executive	**30%**
Vice president	**18%**
Director	**27%**
Manager	**25%**
Project manager	**1%**

INFORMATION WORKERS

REGION	
North America	**36%**
EMEA	**37%**
APAC	**27%**

COMPANY SIZE	
1,000 to 4,999 employees	**45%**
5,000 to 19,999 employees	**27%**
20,000 employees or more	**28%**

TOP INDUSTRIES	
Retail	**20%**
Financial services and insurance	**20%**
Healthcare	**18%**
Government	**17%**
Manufacturing and materials	**15%**

SENIORITY	
C-level executive or vice president	**10%**
Director	**12%**
Manager	**32%**
Project manager	**6%**
Full-time practitioner	**40%**

Appendix C: Endnotes

[1] Source: “How To Make Hybrid Work,” Forrester Research, Inc., November 16, 2021.
[2] Source: “Don’t Miss Your Anywhere-Work Opportunity,” Forrester Research, Inc., March 29, 2021.
[3] Source: “The Future Of Employee Computing,” Forrester Research, Inc., August 2, 2021.
[4] Source: How To Make Hybrid Work,” Forrester Research, Inc., November 16, 2021.
[5] Source: “The State Of Employee Computing, 2021” Forrester Research, Inc., August 2, 2021.
[6] Source: “The State Of Chromebooks, 2022,” Forrester Research, Inc., March 11, 2022.
[7] Ibid.
[8] Ibid.
[9] Ibid.
[10] Ibid.
[11] Source: “The Anywhere-Work Preflight Checklist,” Forrester Research, Inc., April 22, 2022.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