



FALL 2022

Transforming the Network in Financial Services

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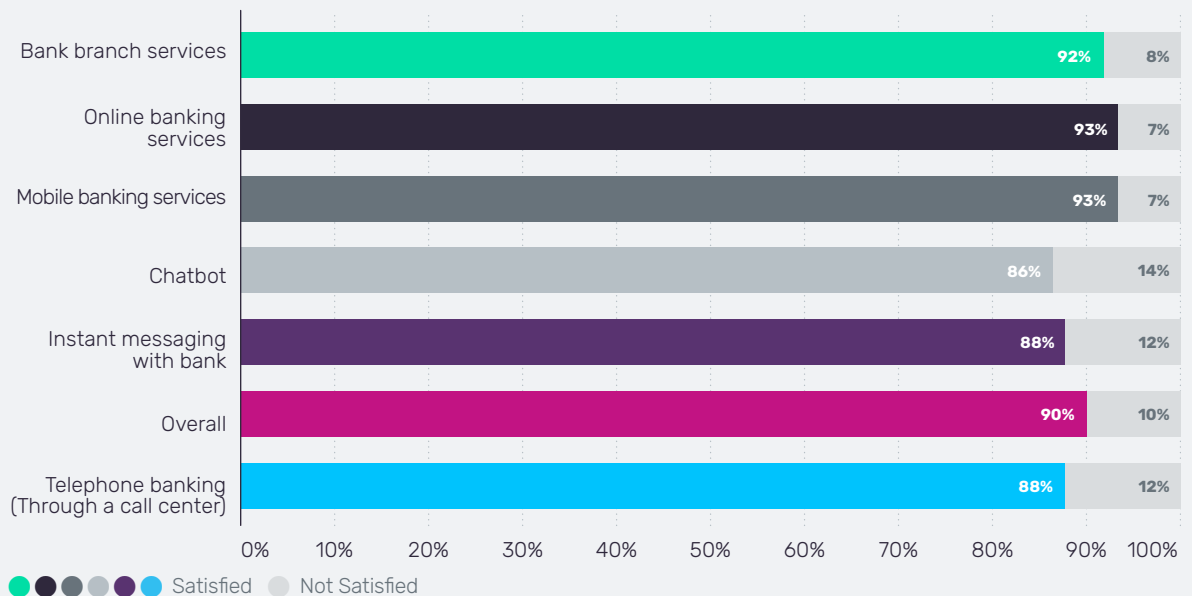
Introduction

The finance vertical has been one of the most affected by the COVID-19 pandemic. Banks, insurers, traders, and other financial institutions have traditionally been cautious about embracing technological change due to security and regulatory concerns.

However, there is now an increased appetite for profound technology change amongst financial institutions. This is evident by a significant increase in the use of cloud-native solutions for

all aspects of financial services – from customer service to resource management and trading. Enterprises in the finance sector are now having to embrace trends such as cloud adoption and hybrid working as both employees and customers require a more flexible and digital working model. Banks in the U.S. reported 300-400% increase in call center volumes amid the pandemic, and the move to digital and remote channels is now permanently ingrained in customer mindsets.

Based on the overall experience, how would you rate the following services at your main transaction provider?

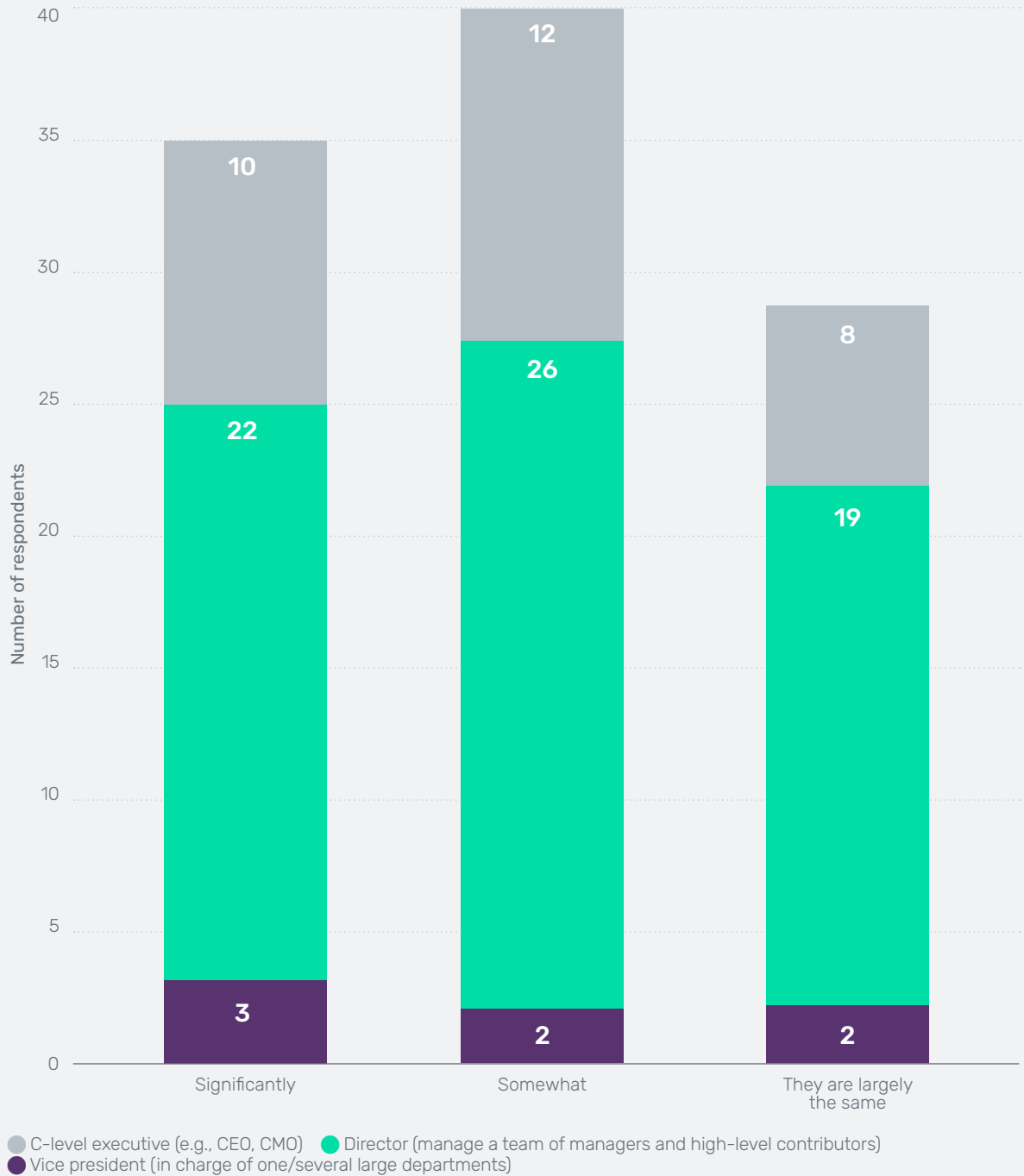


Source: GlobalData Global Channel Analytics

This change has meant that legacy networks are increasingly unfit for purpose. Data traffic flows from new and often unpredictable locations and to and from more locations outside the normal corporate environment. In response, the finance industry is evolving, and the network is empowering this transformation process.

AT&T Business is working with GlobalData, the leading data analytics and consulting company, to speak to enterprises across the finance vertical in North America about their IT strategies. We surveyed C-level executives, directors, and vice presidents with responsibility for IT decision making from 104 companies within the finance sector with companies ranging in size from 500 employees to over 20,000.

Have your IT goals changed over the last two years?



The survey revealed that as we enter the post-pandemic world, banking and finance companies are now bolder with their IT strategies with the belief that they either need to change to meet new market demands or risk being left behind. Approximately 73% of enterprises interviewed state that COVID-19

has changed their plans, with 34% saying their plans have changed significantly. Financial services companies see a number of challenges ahead, but they also see how new network technology can help them to make the most of new opportunities.

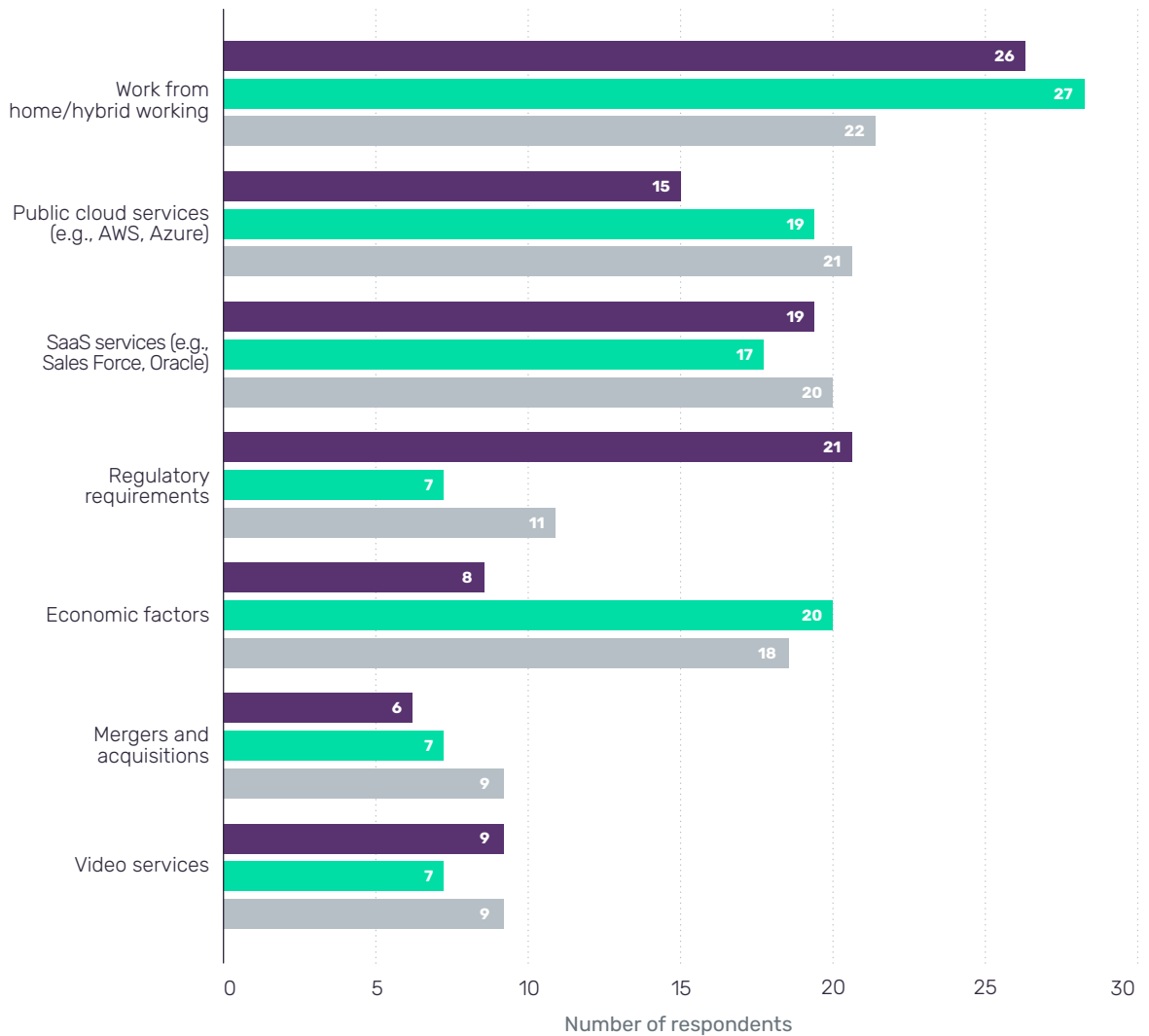
01

Challenges in the finance vertical

The impact of COVID-19 and wider technology trends are now facing a more challenging economic landscape. The finance companies spoken to highlighted a wide range of challenges that their IT infrastructure is struggling to respond to as they seek to do business in a

more agile, secure, and customer-centric way. Financial institutions also need to anticipate what customers want, when, and where. To be able to do this, they require an IT suite that enables them to deliver a more contextual experience.

What has had the most significant impact on your network strategy over the last two years?



Source: GlobalData

● Rank 1 ● Rank 2 ● Rank 3

Hybrid working and the future of work

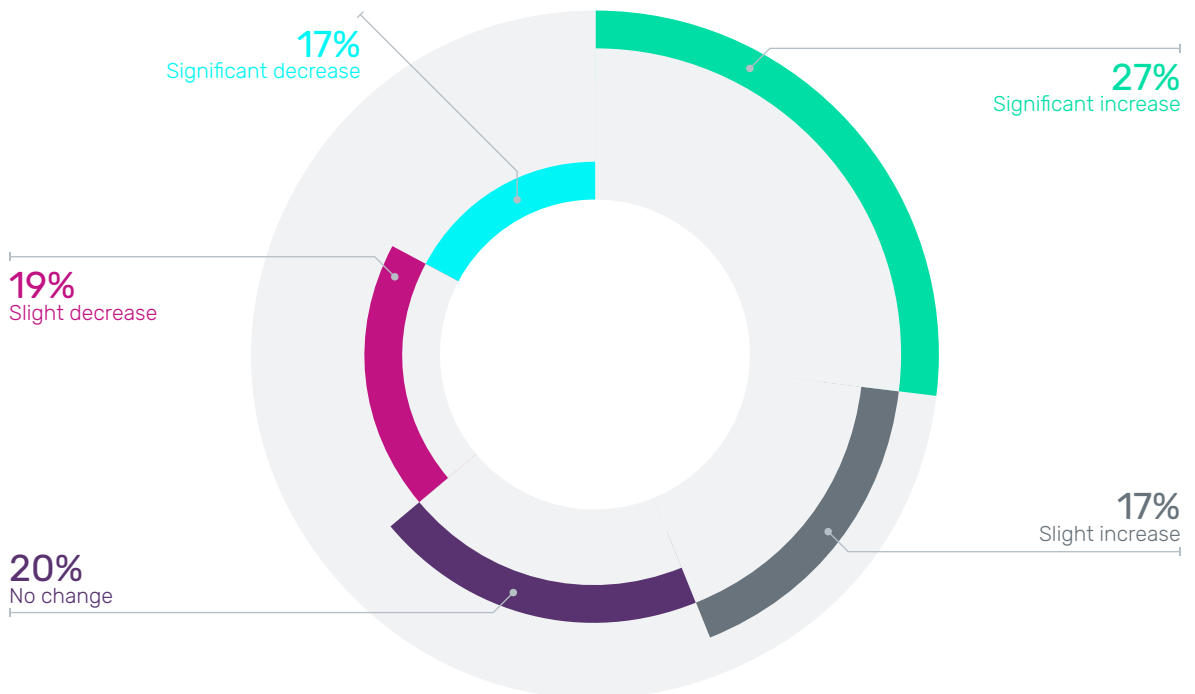
Future of work programs are not new, but they have never before come in the wake of an enforced experiment in widespread home working. Lockdowns during the height of the pandemic highlighted that being out of the office does not necessarily mean that workers cannot do their jobs. Indeed, the research found that 44% of businesses experienced an increase in productivity during lockdowns while only 36% saw a negative impact.

However, opinion in the finance sector is divided on flexible working practices. The future of work is unlikely to be entirely at home,

but an increased willingness of employees to move jobs for better working conditions means that businesses who favor an in-the-office strategy must be prepared to support a hybrid mixture. Finance companies that want to attract and retain the best talent must deploy a network that securely enables a work-from-anywhere methodology.

Financial institutions should be aware that this change will not be easy: 74% of the enterprises surveyed reported that adapting their networks to accommodate hybrid working was their biggest challenge.

Have you experienced a change in productivity levels during work from home?

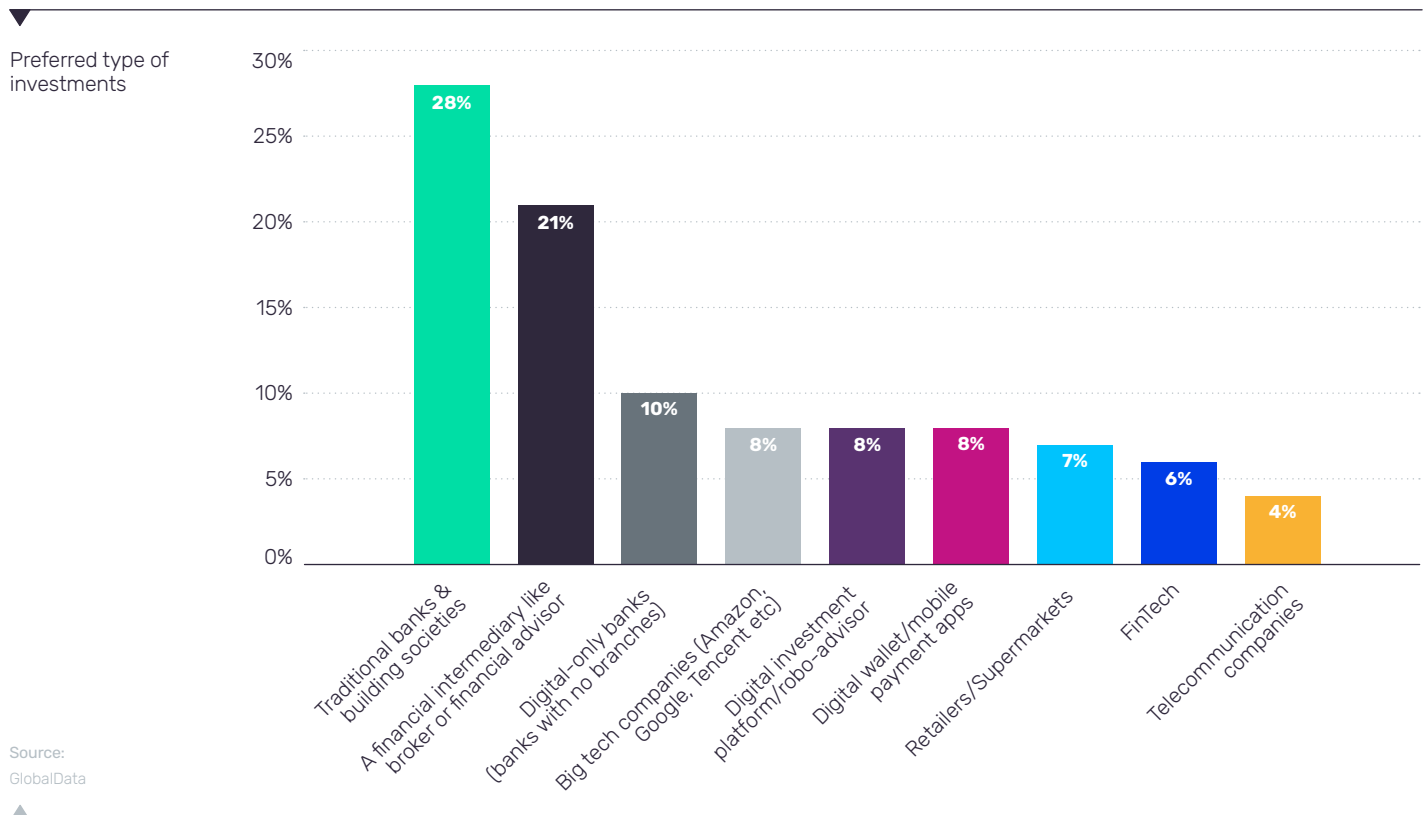


Source:
GlobalData survey, summer
2021

Connecting with customers

The competitive landscape in the finance sector is changing with new providers emerging from traditional sectors such as retail companies, to hyperscalers and digitally native startups. To respond to this, finance companies are now required to offer a digital, omnichannel environment with customers ever more expectant of being able to talk to financial service providers at a time and in the manner (be that in

person, over the phone, via video, or text chat) that is most convenient for them. Furthermore, customers are more likely than ever to switch providers if they experience poor customer service. The wrong network can lead to outages of customer-facing services (e.g., apps, contact centers) or a poor experience when contacting enterprises through digital means.



Hybrid cloud, multi-cloud, and SaaS

Migration of applications and workloads to the cloud is now mission critical in the finance vertical – particularly for bricks-and-mortar institutions seeking to respond to cloud-native challengers. The pace of change accelerated significantly during the pandemic and as a result many enterprises now find themselves with unwieldy cloud estates generating unexpected costs and over which they have limited visibility.

Cloud estates for most enterprises contain a mix of private hosted/on-premises,

collocated, and public cloud deployments running alongside a wide array of software as a service (SaaS) applications (e.g., Customer Relationship Management and Human Relations tools). Ensuring reliable and consistent access to these services is one of the biggest concerns for enterprises. In addition, many finance organizations are faced with the challenge of moving legacy apps and systems to the cloud. Networks with the right cloud access and edge capabilities can provide the answers.

Agility

The increasingly fast pace of change in the finance industry means that enterprises need the ability to quickly respond to changing economic conditions or emerging market opportunities. For example, enterprises may need to make rapid changes to their workforce and therefore require a network that scales with their business. The research has also highlighted that merger and acquisition activity remains high and the right network technology can make the onboarding process quicker and smoother.

Security and regulation

Every technology and transformation conversation with enterprises ultimately comes back to security. This is particularly true in the banking sector where increasingly onerous legislation is juxtaposed against the need to

deliver an ever more personalized customer experience. This challenge is vital as finance companies explore new ways to serve existing customers better but also to reach otherwise hard-to-assess, riskier customers (like small and midsize businesses or unbanked individuals) where new growth opportunities emerge. Banking-as-a-Service (BaaS), for example, creates higher standards for personalization and purpose, particularly as new entrants to the finance sector are seeking to offer over-the-top digital services that are ever more segmented.

Control of access to data and data routing are critical to ensure that financial sanctions and reputational damage are avoided. Intelligent network solutions can provide the controls to ensure that data is not accessed from where it should not be. Finance companies should also be aware that networks and security technology are converging and should seek for network solutions that have security at their core.

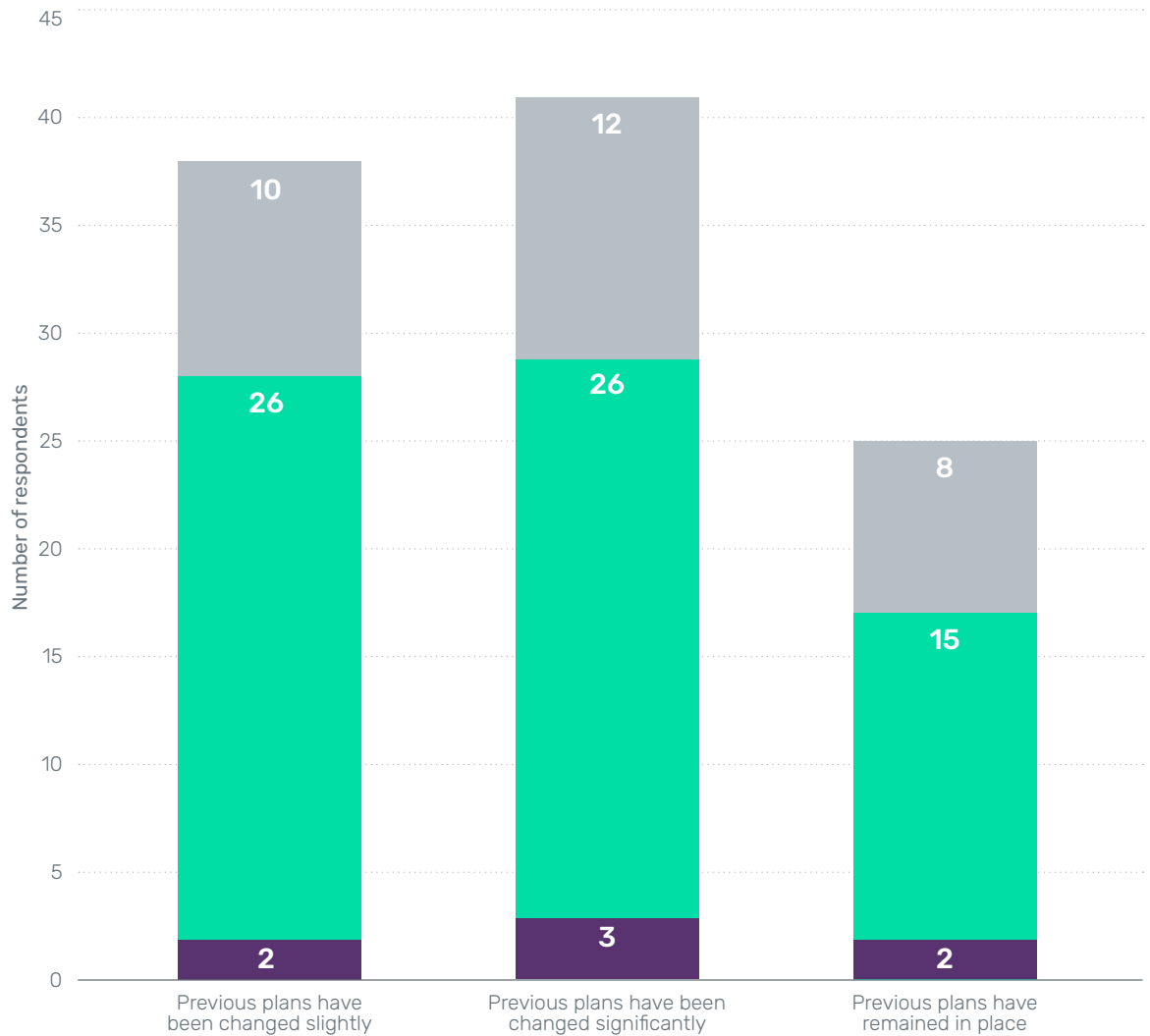
A man in a dark suit and light blue shirt is looking down at a tablet computer he is holding. He is standing in a server room, with rows of server racks visible in the background, illuminated by blue light. The text "Data compliance and security should always take precedence." is overlaid in a light blue font on the right side of the image.

“Data compliance and security should always take precedence.”

02

Networks are empowering change

How has your network transformation strategy changed during the last two years?



Source:
GlobalData

● C-level executive (e.g., CEO, CMO)
 ● Director (manage a team of managers and high-level contributors)
 ● Vice president (in charge of one/several large departments)

Of the financial service companies spoken to, 75% stated that they have changed their network plans in the last two years with 40% stating that their plans have changed significantly. The need to support changing and

increasingly complex IT estates is part of the cause. But this new thinking also reflects the wider range of network technologies available, and the growing expectations enterprises have for their networks.

SD-WAN is leading the way

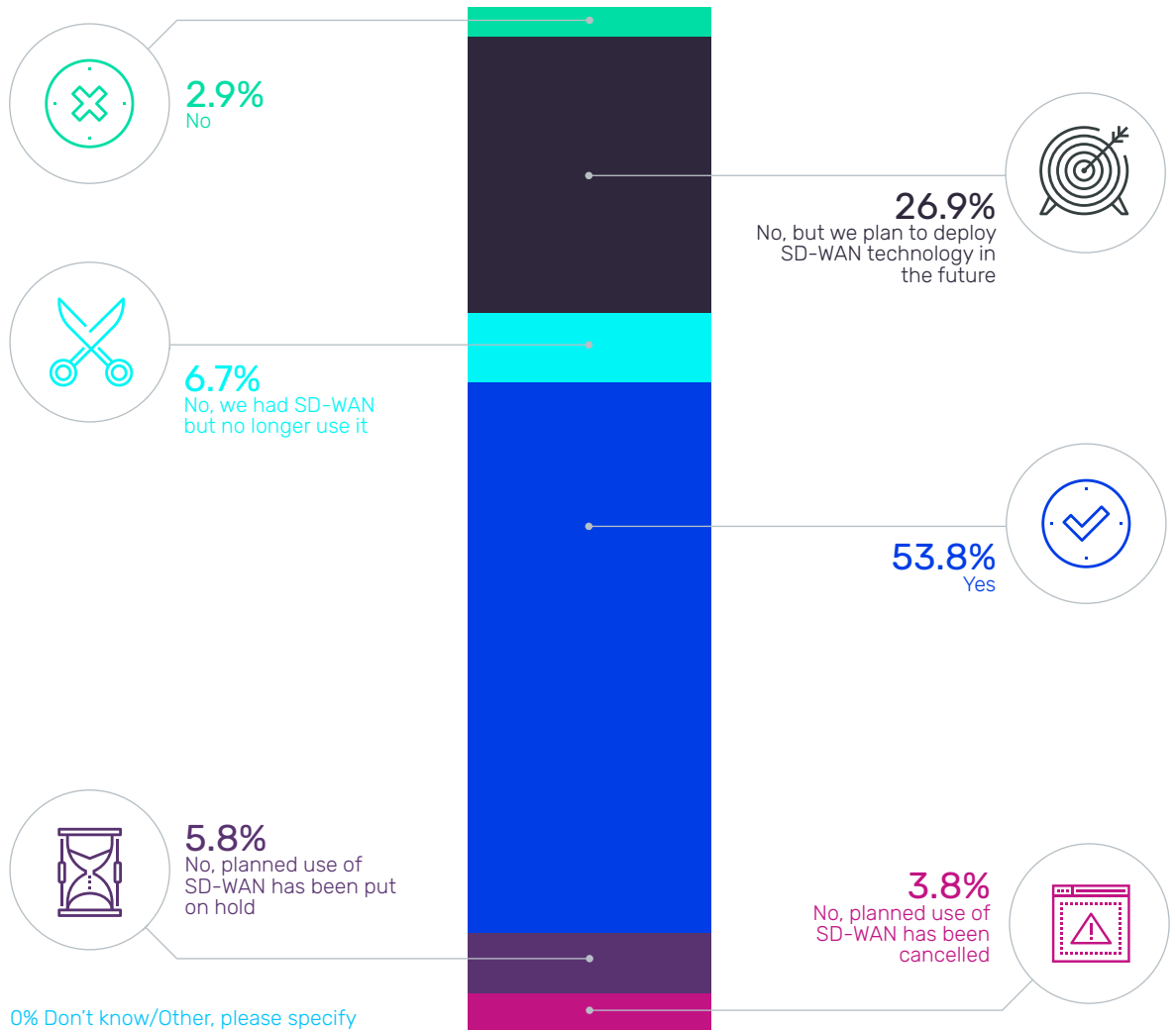
Software-defined wide area network (SD-WAN) remains the most important technology to financial services companies with 81% feeling that the technology is relevant to their needs. Approximately 54% of those surveyed are already using the technology with a further 27% planning to deploy it.

There are many reasons for SD-WAN's popularity. The overlay nature of the technology gives it a high degree of flexibility. In particular, it is agnostic to the underlay technology it is running over, meaning that it can help to unify networks built up in a piecemeal way. However, enterprises should be

aware that even though SD-WAN is agnostic, poor underlays can still cause problems.

It also means that as new acquisitions are made, new sites can be brought into the corporate network environment more quickly and at an earlier stage of the integration process. Similarly, new greenfield sites can be brought online with zero-touch provisioning of customer premises appliances. Zero-touch only applies to the SD-WAN appliance configuration. Enterprises should bear in mind, though, that truck rolls with physical installations still need to happen, and using a common supplier helps to simplify installation complexity.

Does your company currently use an SD-WAN network service?



Source:
GlobalData

Hybrid networks: combining new and old

Multi-protocol label switching (MPLS) and Ethernet remain stalwarts of many networks as they are trusted as reliable and secure. Many of the enterprises spoken to plan to retain some form of MPLS connection with their network estates. SD-WAN can run over existing and new MPLS and Ethernet connections and act as a bridge between those connections and services running over public or private internet.

However, companies in the finance sector are also increasingly seeking to increase their use of internet connectivity – both between corporate sites and in the cloud. SD-WAN plays an important part in securing traffic over internet connections and enhancing the performance of those services. Finance companies are also beginning to explore wireless options such as 4G and 5G, with more than a third of companies surveyed saying that support for wireless access is a primary driver for adopting SD-WAN. The ability to manage service across multiple access services is also one of its primary attractions.

Application and service performance

Whether it is high frequency trading or enabling customers to access services reliably 24x7, application and platform uptime and performance are mission critical in the finance sector. SD-WAN's quality-of-service (QoS) and dynamic routing capabilities were rated as the technology's most important feature by the finance companies surveyed. This is no surprise when this feature can enhance the performance of pure internet connections and optimize networks by routing traffic between MPLS and private or public, and fixed or wireless internet connections. SD-WAN is able to prioritize mission-critical apps to ensure that key systems are more protected from network incidents.



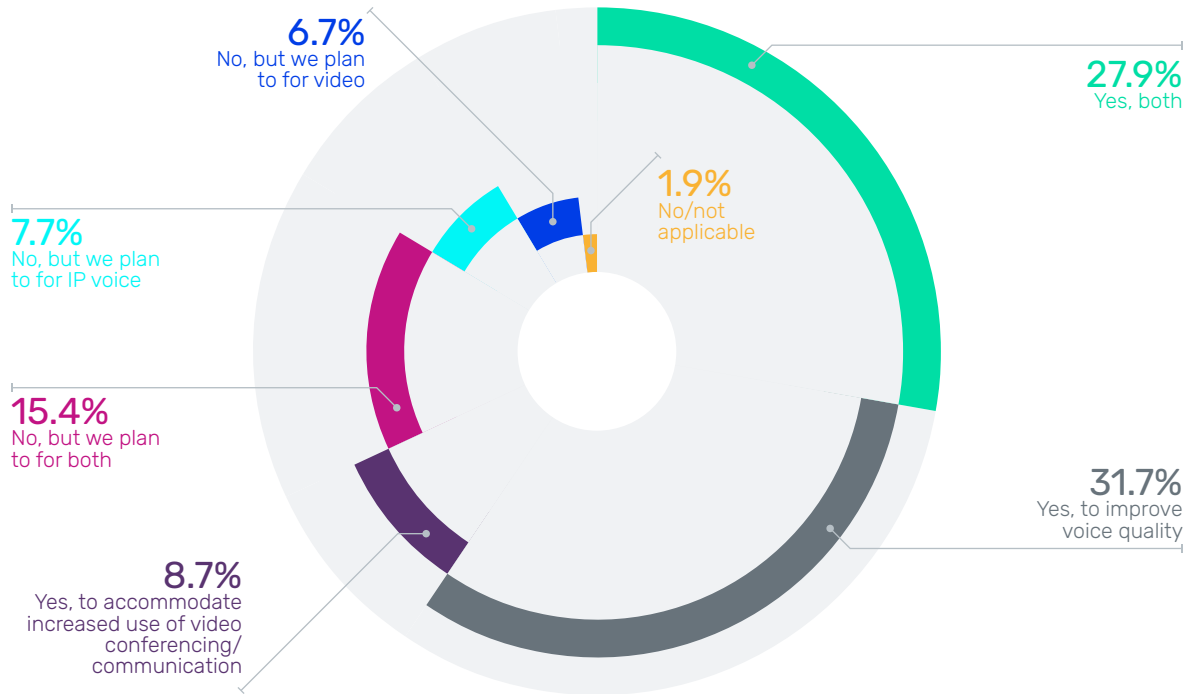
“Adopt services that can be improved.”

Collaboration and the employee and customer experience

Organizations' ability to offer a consistently positive user experience for their employees is vital in the war for talent in the era that LinkedIn has dubbed "The Great Reshuffle." As well as guaranteeing that corporate apps work, SD-WAN

can play a lead role in ensuring that voice and video communications are consistently high quality. Approximately 67% of finance companies have already made changes to their network to cope with the increase in IP voice and video traffic caused by new ways of collaborative working. Of the remaining companies who have not yet made a change, 94% are planning to do so.

Have you had to adapt your network to cope with increased IP voice and/or video traffic?



Source: GlobalData

However, enterprises should not assume that the initial changes made are delivering a consistently high standard. Many of those changes were made to reach a 'minimum viable' level of performance. The increasing quality of video services and feature depth of collaboration platforms is extending the need to modify the network to support voice and video solutions. Similarly, as businesses seek to reduce their carbon footprint, video solutions

offer an ideal route for reducing corporate travel – both for employee and customer engagements. Within the finance sector globally, video has become a more acceptable way for people to buy financial services and receive financial advice. For example, many banks in the U.K. and Poland can now sell complex financial services such as mortgages via video. Ensuring HD-video ready networks is a commercial imperative and a potential differentiator.

03

Secure networking and the future of network technology

SD-WAN HAS QUICKLY ESTABLISHED ITSELF AS A 'GO-TO' NETWORK TECHNOLOGY, BUT IT IS ALSO EVOLVING.

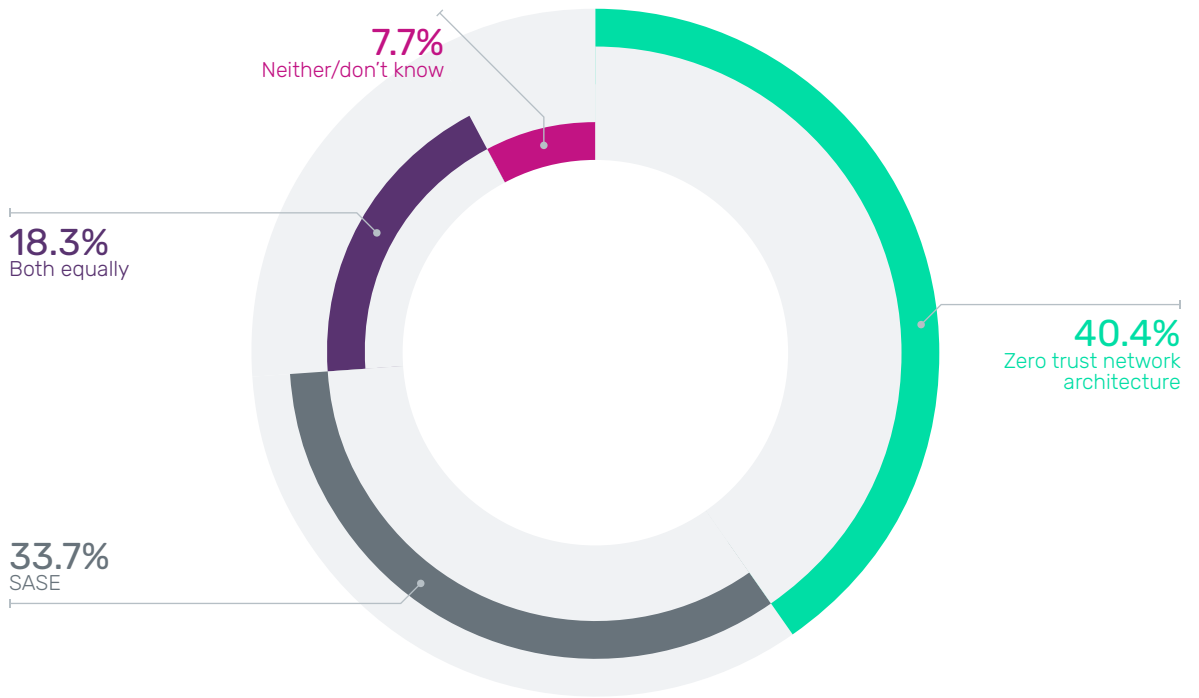
From SD-WAN to SASE

Financial institutions have seen attempted cyber-attacks increase by several hundred percent during 2022 making security the number one factor in all IT decision making processes – and networking is no different. The ultimate ambition of most enterprises is to achieve convergence of their network and security policies and functions. WAN technology is evolving to meet this challenge in the form of Secure Access Service Edge, or SASE, technology. The SASE framework involves many of the same principles as SD-WAN,

but with a reduced emphasis on on-premises deployments of boxes, with more capabilities running in the cloud, and one box achieving the function that would separately have been achieved by an SD-WAN instance and a firewall instance – whether physical or virtual.

The security requirements of the finance industry are such that in some instances a physical security capability will be required at specific locations. However, 50% of the organizations felt that cloud-hosted firewalls are already sufficiently advanced to support their needs. A true SASE network methodology will be able to accommodate all approaches. But enterprises should be aware that a cloud deployment may be the best way to ensure that security policies are always up to date and that all routers/firewalls have received that latest security patches.

Which of these terms is more relevant to your network strategy?



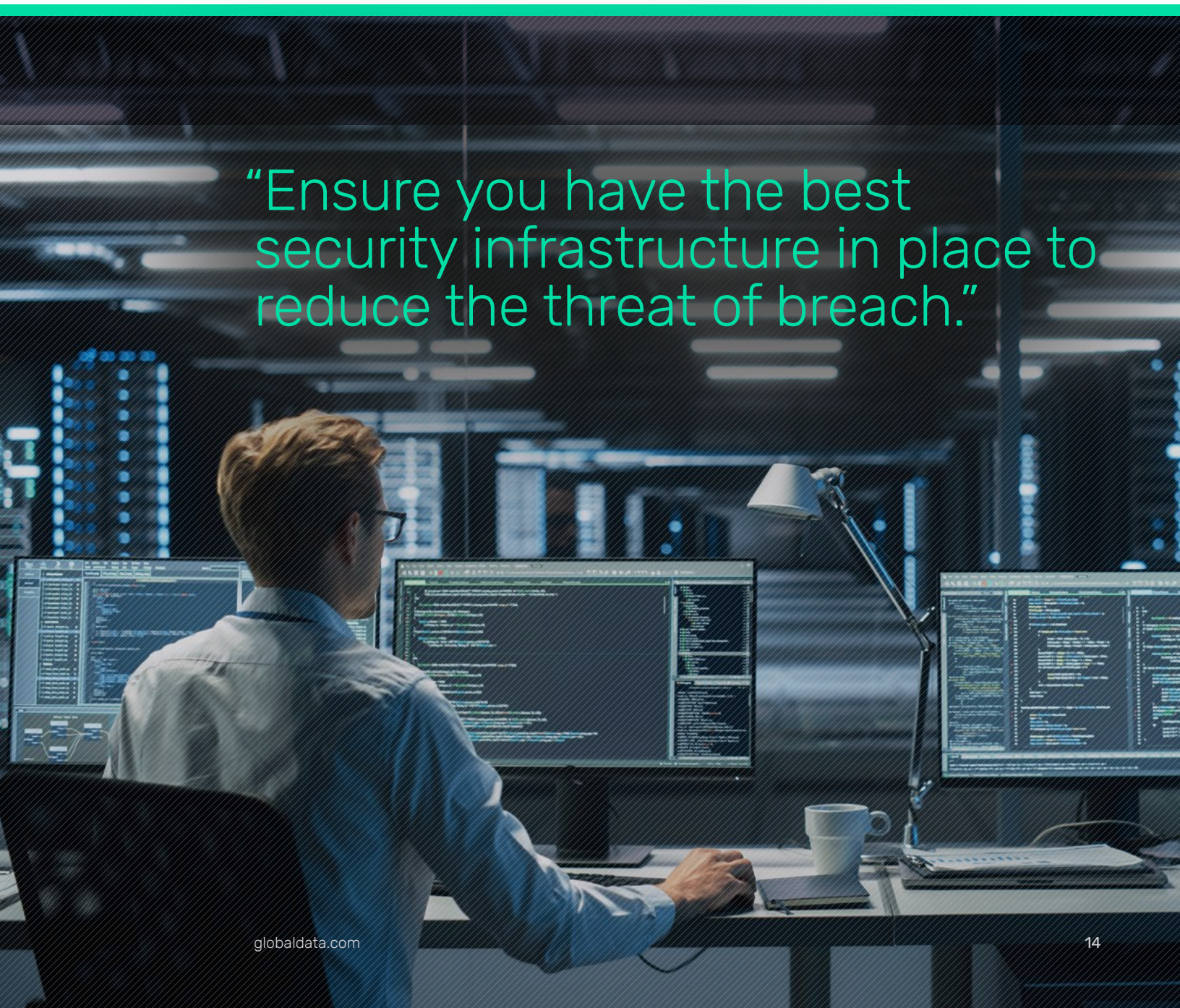
Source: GlobalData

Zero trust networks and controlling data

SD-WAN and SASE cannot work in every environment. For example, it may not be economic to invest in SD-WAN/SASE for home workers or workers on the move. Zero trust network architecture (ZTNA) can provide a powerful solution in these circumstances. For remote workers and sites using internet only connectivity, ZTNA networking uses slim software clients and internet protocol security (IP Sec) tunnelling features to encrypt data. These thin clients work like a more advanced form of virtual private network (VPN) solutions and do

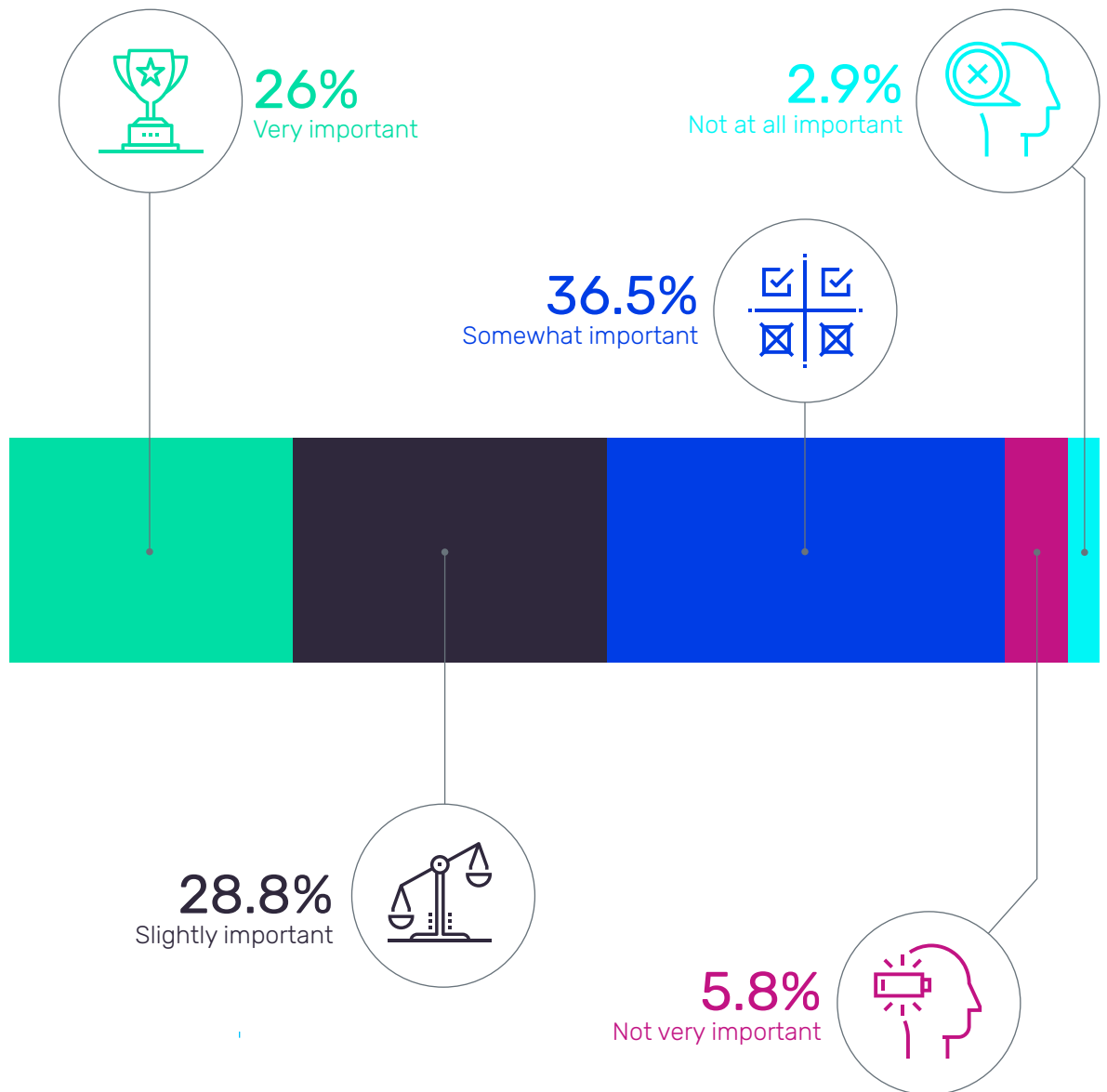
not have a significant impact on the performance of the device (e.g., mobile, laptop, and tablet) on which they are running.

A zero trust approach treats all devices accessing the corporate network as unsafe until they can prove they have the right to access corporate data sets. This right to access can be determined both by who the person is, but also by where they are located. This approach can help to ensure that employees do not accidentally break data privacy/sovereignty laws. ZTNA is also relevant to technology solutions that rely on the use of remote sensors and Internet of Things (IoT) – e.g., smart buildings or sensors for monitoring emissions.

A person with short brown hair and glasses, wearing a light blue button-down shirt, is seen from the back, sitting at a desk in a server room. They are looking at three computer monitors displaying code or data. A desk lamp is on the right, and a white mug is on the desk. The background shows rows of server racks with blue lights.

“Ensure you have the best security infrastructure in place to reduce the threat of breach.”

How important is on-demand networking to you (e.g., the ability to flex bandwidth or turn connections on or off)?



Source:
GlobalData

Network-as-a-Service (NaaS)

With concepts such as embedded finance now permeating the financial sector, banks and other financial institutions are seeking ways to limit the fixed cost of infrastructure and to disaggregate component pieces in a way that supports new revenue. Networks can play a leading role in this process which is why 91% of the finance companies surveyed stated that on-demand network functions (such as flexible bandwidth) are important to them, with 26% highlighting it as one of their most important network priorities.

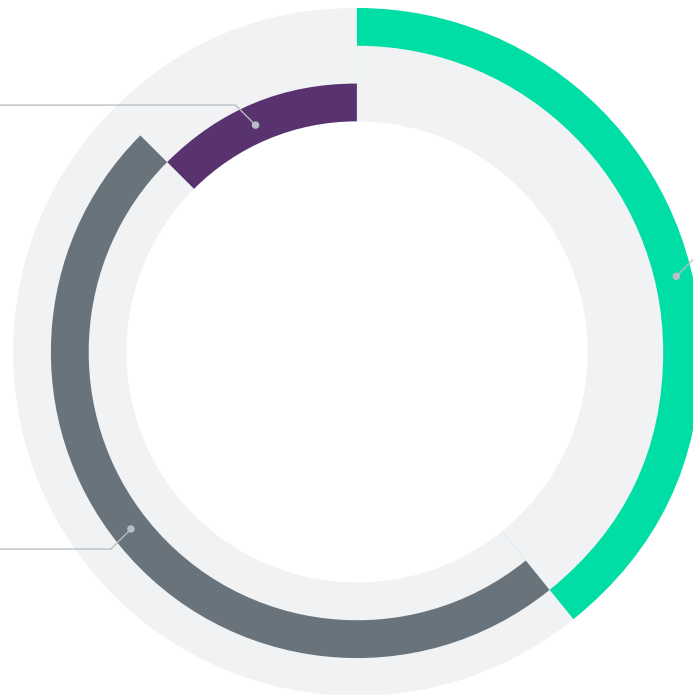
A true NaaS experience will allow organizations to move to more of a usage based financial model. It can also deliver an on-demand experience such as spinning up a new connection for a short period of time and then disconnecting it when it is no longer needed – e.g., to support the large transfers of data on a one-off or periodic basis. The right network partner will already be well advanced in the automation of its network processes and platforms in a way that reduces provisioning times and enables it to deliver true agility.

Are open APIs important to your network strategy?

12.5%
Not important at all

48.1%
Somewhat important

39.4%
Yes, very



Source:
GlobalData

APIs and networking

Application programming interfaces (APIs) have become a key battle ground in the finance sector supporting trends such as open banking, bank-as-a-service, and embedded finance. APIs have also been at the heart of the emergence of new challengers such as 'super fintechs.' In addition, 'super apps' that aggregate information using APIs from multiple financial services providers are challenging assumptions on the relationship between finance companies and their customers. APIs provide the link between applications and platforms and this is increasingly true in networking.

In order to deliver maximum agility to support a dynamic IT environment, the right network services provider will have the ability to offer APIs to enterprise clients that will enable organizations to make changes and additions or removals to their network. This is particularly important to those organizations looking for a greater degree of real-time control over their networks. APIs will also allow enterprises to take data feeds from network monitoring platforms and plug them into their own management solutions (e.g., Service Now).

Choosing the right 'internet'

'The internet' is one of the most commonly used phrases in the telecom world, and often one of the most abused. There are different types of internet and internet connections with critically important differences. The choice will determine what infrastructure data is carried on with implications for data security and network/application/cloud performance.

Not all fiber is equal

New fiber internet connectivity offers gigabit speeds that can potentially support a wide range of services. However, not all 'fiber' access technologies can offer services with high bandwidth rates with simultaneous upload and download speeds – a key factor in delivering cloud and video services. Most coax-based fiber services, for example, cannot offer simultaneous bandwidth which makes them less suitable as enablers of digital transformation.

Public internet vs. private internet

One of the most important choices for businesses to make is whether to utilize public internet broadband services or a dedicated, 'private' internet connection. Public internet connections are standard broadband connections and services are delivered on a best-effort basis. Advertised headline speeds may not be achieved. Private or dedicated internet are free from contention (i.e., competition from other broadband users in the area) so they offer stronger SLAs and better performance guarantees. They also offer a greater degree of data traffic separation, which can be vital for achieving security policy or regulatory requirements.

roughly even split across the three main options: public internet, dedicated internet access, and service provider peered access.

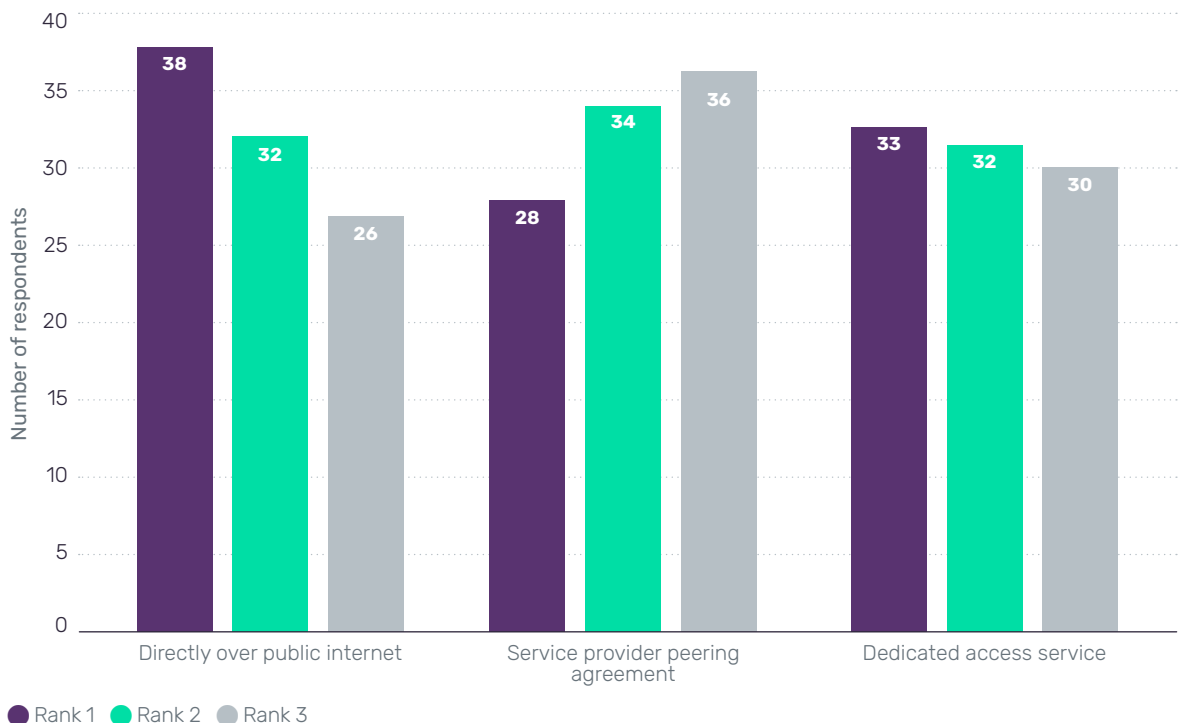
The popularity of public internet is not surprising. It is the cheapest option and the most applicable to home workers. Furthermore, some cloud service providers state that internet access is the 'best' way to access their services. For this reason, working with a provider with extensive broadband coverage offers clear advantages.

However, for more mission critical or latency sensitive cloud use cases, there are better options. As noted above, dedicated internet services offer performance guarantees and simultaneous bandwidth. The next step is utilizing the interconnects that service providers have with the major cloud and colocation providers. Taking advantage of these peered connections guarantees that sensitive traffic will travel only over the service provider's infrastructure before it gets to the cloud provider making it easier to monitor. Finance companies should also bear in mind that although the headline cost for these services may be slightly higher, the savings on data egress charges may lead to an overall reduction in cost.

Cloud access: internet vs. service provider peered access

The choice of access service becomes even more important and complicated when it comes to cloud access services. The survey of finance companies revealed a mixed picture with a

What are the most important cloud-access services for your organization at present?



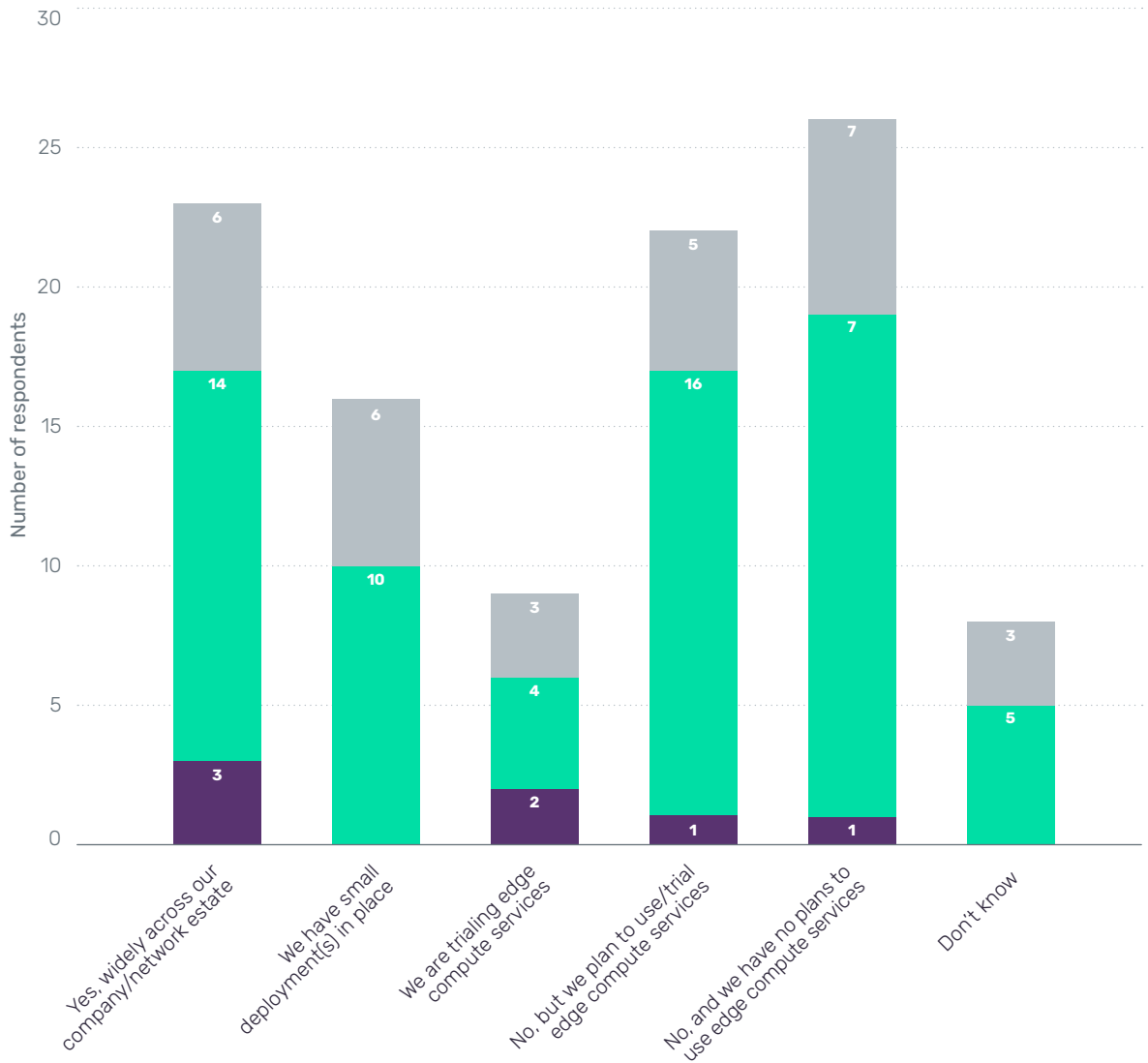
Source:
GlobalData

Edge as a differentiator

Cloud-native applications are becoming commonplace in the finance sector, but it is not always possible or desirable to deploy all systems and applications in a public cloud environment. Edge technology is network (wireline or wireless) and compute infrastructure that sits either on the customer premises or with the service provider network at a location close to the customer premises. This proximity means that latency can be significantly reduced – often under six milliseconds.

The benefits of proximity are already familiar to parts of the finance industry, particularly traders, to reduce latency between banking systems and exchanges. This familiarity in part explains why GlobalData's survey has highlighted that the finance vertical is looking to the edge to solve some of its more unique challenges with 67% either already using the technology or planning to use it in the near future.

Does your company use edge compute services?



Source:
GlobalData

● C-level executive (e.g., CEO, CMO)
 ● Director (manage a team of managers and high-level contributors)
 ● Vice president (in charge of one/several large departments)

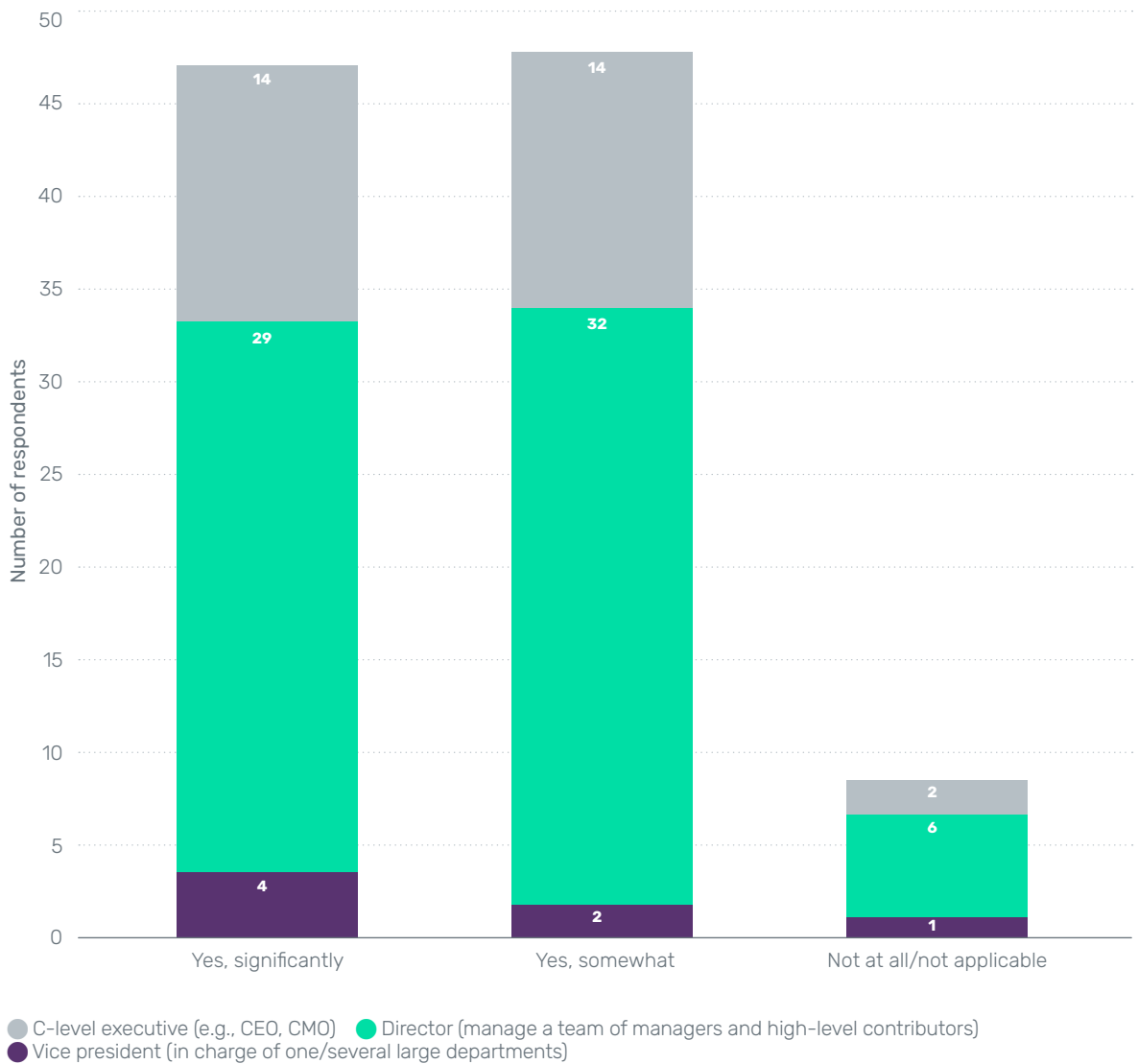
Real-time edge

As more financial systems become geared towards the need for real-time compute services, edge network, and edge compute resources offer the best way to achieve the level of low-latency responsiveness required. Similarly, as AI is increasingly involved in decision-making processes, keeping AI systems hosted in proximity to the systems they are interacting with offers clear benefits.

Legacy applications and the edge

The low latency nature of edge networking also offers a pathway for migrating legacy applications to the cloud. Many older apps are designed to run in LAN environments where latency is not an issue. The right partner can help move these apps to an edge environment that closely mirrors a LAN setup – including the security and control that is demanded. Edge environments also make the most of the latest in green technology meaning a switch can reduce energy costs and carbon footprints.

Are real-time data compute requirements changing or impacting your network strategy?



Source:
GlobalData

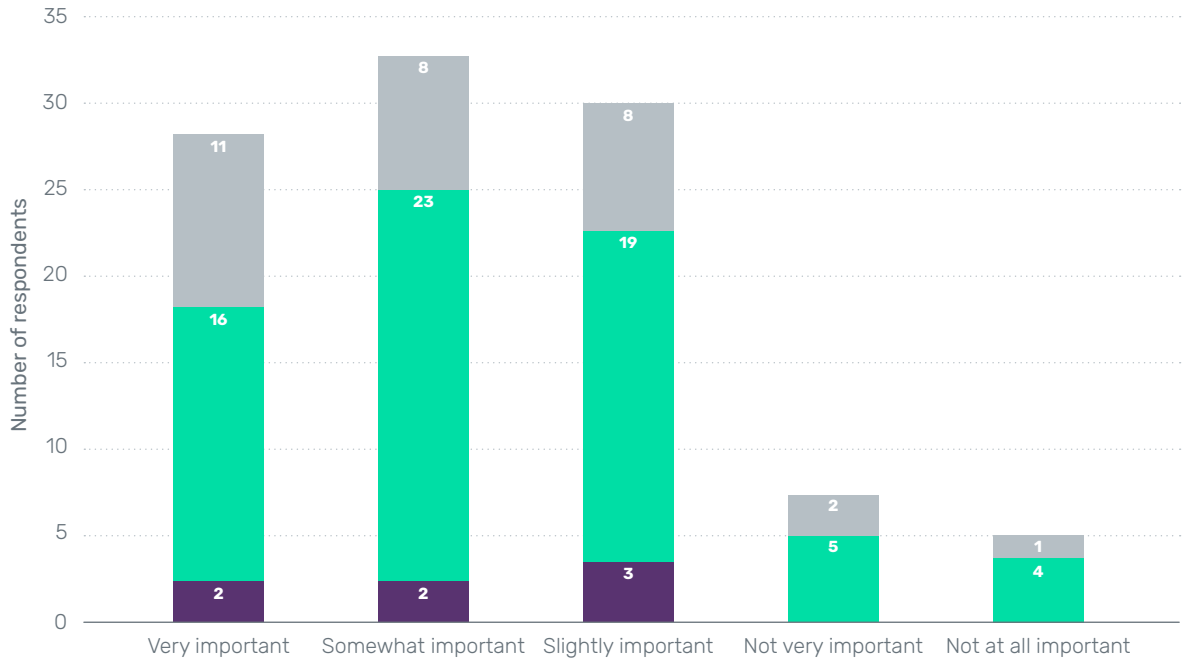
● C-level executive (e.g., CEO, CMO) ● Director (manage a team of managers and high-level contributors)
● Vice president (in charge of one/several large departments)

04 Visibility and control

As IT estates become more distributed, monitoring and managing networks has become increasingly vital. Enterprises in the finance industry are particularly aware of the need to ensure maximum uptime and to

meet regulatory and auditing requirements. In the past, portals have sometimes promised more than they can deliver, but significant advancements mean that customer expectations are now being met.

How important is the network management portal to you?



Source: GlobalData

Legend: C-level executive (e.g., CEO, CMO) Director (manage a team of managers and high-level contributors) Vice president (in charge of one/several large departments)

Even for organizations opting for a fully managed solution there is a requirement to be able to monitor activity on their network. For customers opting for self- or co-managed network services, the portal is even more necessary. Businesses should look for a provider who can offer a single log-in portal with functionality including network/circuit/application performance monitoring, network

policy management, capacity threshold setting, event management, device health monitoring, and user experience monitoring.

Greater visibility into network performance can be combined with AI technology to offer automated auditing and deeper route-cause analysis alongside suggestions for remediation. AI technology is also beginning to enable automated generation of trouble tickets.

Conclusion and recommendations

The finance vertical is experiencing digitalization across the stack, and the network is the key enabler to accessing the best that technologies such as cloud and AI have to offer. The network is central to delivering the agility that finance

companies need to adapt to changeable market conditions and shifting customer expectations. The right network will also open up new routes to market and offer differentiation from competitors.

TO MAKE SURE YOUR NETWORK IS WORKING FOR YOU, FINANCE COMPANIES SHOULD:



Work with a provider that can offer a best-in-class range of SD-WAN and SASE solutions from multiple vendors. Enterprises should also be aware that the framework could be put together with a best-of-breed approach, utilizing infrastructure from multiple providers.



Find a partner who can offer hybrid network solutions including MPLS and Ethernet technology alongside SD-WAN, and supporting multiple access services including public and private internet and wireless.



Demand a single-log-in network management portal with a rich set of monitoring and management features and APIs to allow data to be fed into other systems and platforms as required.



Look for a provider with an established edge networking and edge compute proposition and the ability to move legacy apps to the edge.



Remember that 'the internet' can mean different things – working with a provider with compelling internet infrastructure both in the U.S. and globally will mitigate against most potential problems.



Examine which route to the cloud offers the right balance between cost, performance, and security – don't assume that the cheapest headline price offers best value.



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