



The bridge to possible



2022 Global Networking Trends Report

# The Rise of Network as a Service (NaaS)

Report





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# Welcome

## Welcome to the *2022 Global Networking Trends Report: The Rise of Network as a Service (NaaS)*.

What a remarkable time we are experiencing, both as humans and as network professionals. Over the past year, IT leaders and network professionals have been tasked with enabling remote workers, protecting data across a more distributed computing landscape, and delivering new services for users, customers, and partners. Many businesses accelerated their digital transformation efforts to meet these new requirements, leveraging the cloud and software as a service (SaaS) for increased flexibility, agility, and speed.

In our [2021 Global Networking Trends Report](#), we highlighted the ways network technologies are being used to improve business resilience—regardless of circumstance.

In this year's report, we focus on an emerging trend that has big implications for the future: network as a service.

On the heels of increasingly popular as-a-service (aaS) models such as SaaS and infrastructure as a service (IaaS), NaaS will invariably change how many companies acquire, deliver, and manage their networking capabilities. To learn more, we spoke with 20 IT leaders and surveyed 1534 IT professionals in 13 countries about how they perceive NaaS, its strengths and limitations, and whether they plan to adopt the emerging network consumption model.

We hope the data, perspectives, and guidance in this report help you better understand the benefits and implications of NaaS as you evolve your networking strategies.

— James Mobley, SVP Network Services, Cisco



## Key findings

It's no trivial proposition to completely transform the way you consume and operate your network. You need some good business and technology reasons to make this transition to an as-a-service model. And you also need trusted partners you can rely on to keep your organization humming. Still, many organizations are highly motivated to make the move. Here are some key findings from our 2022 NaaS research:

### Key finding 1: Challenges

If resilience and agility are the question, for many, NaaS is the answer.



- Responding to disruptions (45%) and accommodating new business needs (40%) are cited as the top network challenges for 2021.
- At the same time, IT teams recognize the top NaaS benefit as freeing up IT teams to deliver innovation and business value (46%). Another 40% recognize NaaS as improving response to disruptions and 34% as improving network agility.

### Key finding 2: Benefits

Big expectations—fast access to the latest technologies is the big prize.



- Technology continues to evolve faster than organizations can adopt it. Thirty-five percent of respondents recognize the requirement to continually deploy the latest networking technologies such as Wi-Fi 6, software-defined WAN (SD-WAN), secure access service edge (SASE), 5G, AI, and others as their top driver for NaaS.

### Key finding 3: Operations

NaaS is great, but only if it helps the networking team meet service-level agreements (SLAs).



- The top services required from NaaS providers are network lifecycle management (48%), network resiliency (42%), and monitoring and troubleshooting to meet SLAs (38%).

### Key finding 4: Concerns

But it's not all smooth sailing; there are some concerns about giving up control and cost.



- Concerns range from whether NaaS can support unseen emerging demands (30%) to loss of security control (26%).
- The cost and disruption of transitioning also ranks high (28%).

### Key finding 5: Roles

NaaS opens up new horizons for IT professionals, but they will need to up their game.



- More than 75% of organizations agree or strongly agree that NaaS will give IT teams opportunities to advance their skill sets.
- However, today only 1 in 4 organizations are likely to trust their own IT staff over a systems integrator, managed service provider, or NaaS vendor to translate their business needs to technical policies.

### Key finding 6: Adoption

There are multiple ways to get started with NaaS, and one of them is SASE.



- SASE is a likely entry point to NaaS, since 40% of organizations cited multicloud access and 34% cited security as good fits for NaaS.
- Forty-nine percent of organizations plan to get started with NaaS during a refresh or upgrade cycle, and 34% said they would start by adapting an existing site.

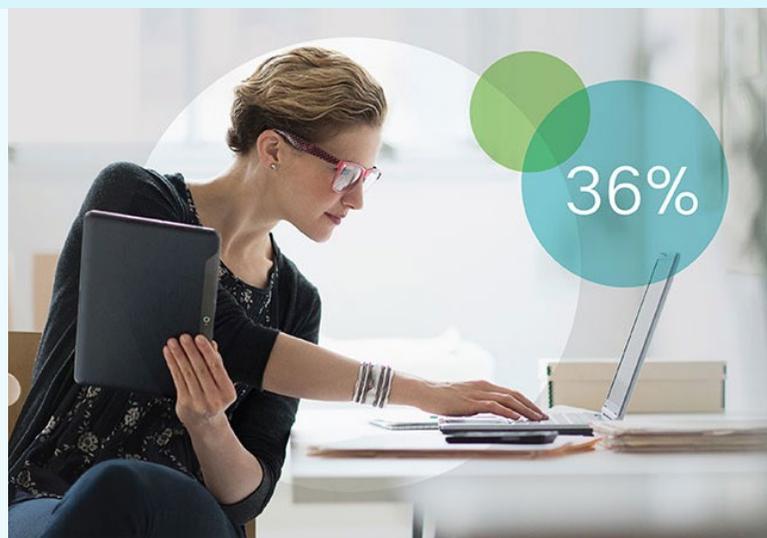
## A different networking model

After more than 18 months of disruption and adaptation, the role that network technologies play in business survival and success has never been clearer—or more essential. Already a key enabler of remote work, networks are now being asked to support safer workplaces, hybrid work models, and evolving business

operations. To do so, they need to work seamlessly across on-premises, multicloud, and edge environments. They need to provide a secure and consistent experience for all users, regardless of location, device, or method of connectivity. And they need to support both traditional and modern microservice-driven applications.

Because resources and bandwidth are often limited, many IT and networking leaders are investigating NaaS as an alternative way to address these challenges. But what exactly is it?

When we asked IT leaders for their definition of NaaS, it was quickly apparent that it means different things to different people. In fact, in our survey, a surprising 36% of respondents claimed they already have NaaS. While this may seem high for a nascent technology, from our interviews we realized that many consider themselves as having NaaS if any portion of their network is managed by a third-party provider. We believe this definition is far too broad and needs to be more specific.



**NaaS is a cloud-enabled, usage-based consumption model that allows users to acquire and orchestrate network capabilities without owning, building, or maintaining their own infrastructure.**

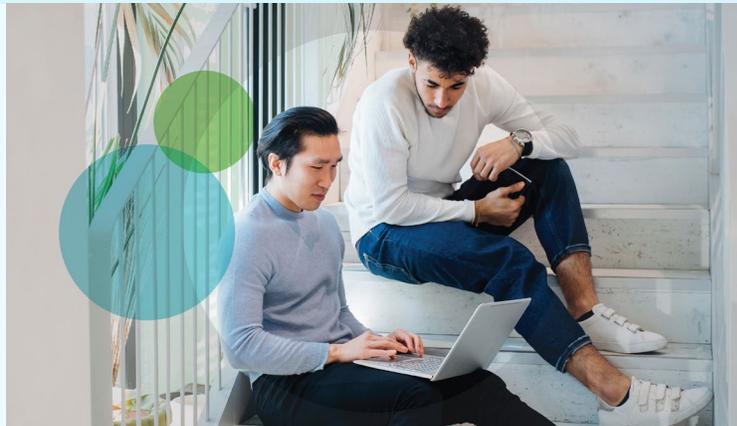
“Organizations are trying to determine the right mix of internal and partner-provided resources. Many are choosing to invest in their people, analytics, observability, and automation, and they’re thinking hard about how to leverage strategic vendors to offload infrastructure management and maintenance.”

– Mary Turner, Research Vice President, IDC

NaaS can provide an alternative consumption model for a broad range of network elements, including wired and wireless LANs, WANs, and VPNs, as well as branch, data center, edge, multicloud, and hybrid cloud environments. It can be used to deliver new network models such as SASE. It can enable shifts in organizational models, such as the move to hybrid work. And as an on-demand service, NaaS can allow IT teams to more easily scale up or down, rapidly deploy new services, and optimize the balance between CapEx and OpEx.

For some IT leaders with whom we spoke, NaaS represents a new and better form of networking that is greatly needed.

They recognize that they are falling behind and losing the confidence of their users. And they believe NaaS can help them attain the latest technologies, meet a growing set of requirements, and match the accelerating pace of business.



“With the level of networking complexity being so high, the speed at which businesses need to respond to market changes, and the extensive reach of modern networks, there are a lot of people realizing, ‘We just can’t do this anymore, and we need help.’”

– Mark Leary, Research Director, Network Analytics, IDC



### Bottom line:

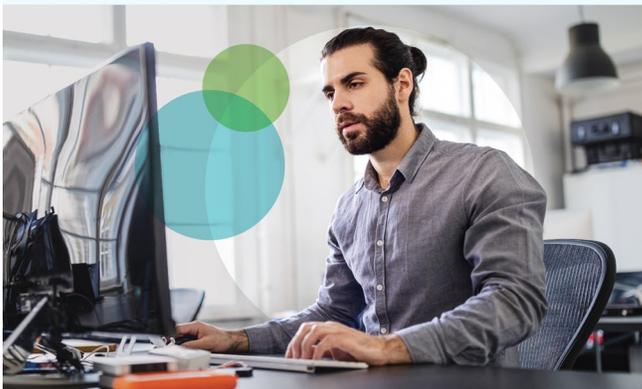
NaaS adoption is expected to grow at a compound annual growth rate of 40.7% from 2021 through 2027.

# Addressing challenges, delivering benefits

Choosing whether to adopt a NaaS model ultimately comes down to the business and technology challenges it addresses, as well as the benefits it delivers.

For the organizations we polled, agility remains top of mind. When asked about the biggest business challenges their network must address, nearly 50% of IT pros said responding to disruptions and 40% said accommodating new business applications and business projects. More than one-third of respondents identified the need for network agility as a major driver for NaaS, and half of the respondents said they anticipate NaaS allowing them to deliver increased innovation and business value.

As part of their push to be more agile, many IT organizations are shifting their applications and services to the cloud, which can introduce new security, governance, and compliance challenges.

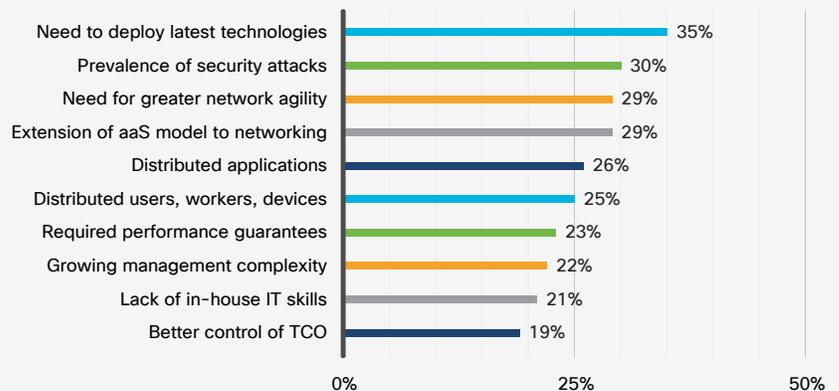


According to the IT pros we polled, the biggest technology challenges they are facing in managing their networks today are connecting to multiple clouds (36%); securing their network, users, and applications (34%); and identifying root causes and quickly remediating security or performance issues (31%).

At the same time, one-third of respondents identified the need to continually deploy the latest networking technologies (such as Wi-Fi 6, SD-WAN, SASE, 5G, AI, etc.) as a key motivation for moving to NaaS, and a third cited the ability to defend against security threats, which are becoming more frequent and sophisticated.



What would most likely cause your organization to move to a NaaS model?





“Our executives see no value in my staff configuring devices or operating infrastructure. They want IT thinking in terms of business objectives. Using outside services for basic operations allows my staff to get closer to business outcomes.”

– Director of IT infrastructure, global consumer products company

When we asked about the main benefits that IT pros expect from NaaS, primary decision makers cited the ability to focus on delivering business value instead of day-to-day infrastructure management.

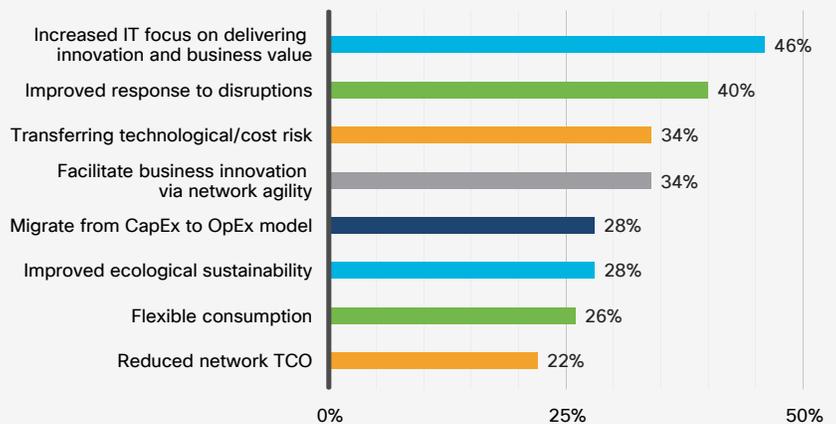
Improving the response to network and security disruptions was another highly rated benefit of NaaS, as cited by 45% of network practitioners and 40% of primary decision makers. While the prioritization of security improvements came as no surprise, we were interested to learn that more than 25% of network practitioners and 33% of primary decision makers identified improved ecological sustainability as a big benefit of NaaS.

### Even more surprising was the low ranking of NaaS’s financial benefits.

With a flexible consumption model and subscription-based pricing, NaaS enables IT teams to shift from CapEx to OpEx spending and avoid large, recurrent investments in network infrastructure. Instead, spending becomes more consistent and predictable, and companies pay only for the resources they use. And yet these fiscal benefits were ranked much lower by IT leaders and network professionals compared to the agility, innovation, and management-offloading benefits of NaaS.



In your opinion, what are the top 3 business benefits that could be derived from using a NaaS model?



#### Bottom line:

TCO is low on the priority list when it comes to NaaS, because companies are far more concerned with delivering business value and quickly responding to disruptions. Sixty-eight percent of IT leaders agree or strongly agree that NaaS will free their teams from day-to-day network management, allowing more time to focus on delivering innovation and business value.

## How NaaS changes network operations (NetOps)

A common concern we heard about NaaS is that it requires a complete handoff of network operations, giving all responsibilities to the NaaS provider and leaving nothing left for the organization's NetOps team to do. But the reality is, NaaS is not an all-or-nothing game when it comes to operational responsibility.

In a NaaS model, the provider takes responsibility for all aspects of network lifecycle management. That includes deploying, integrating, controlling, updating, monitoring,

and repairing all elements of network infrastructure—including any of their customer's on-premises equipment—required to deliver the contractual outcomes. Outcomes can include the number of connected users, sites, cloud providers, and applications, as well as the agreed-upon service levels, bandwidth, application performance, security provisions, compliance, and other requirements.

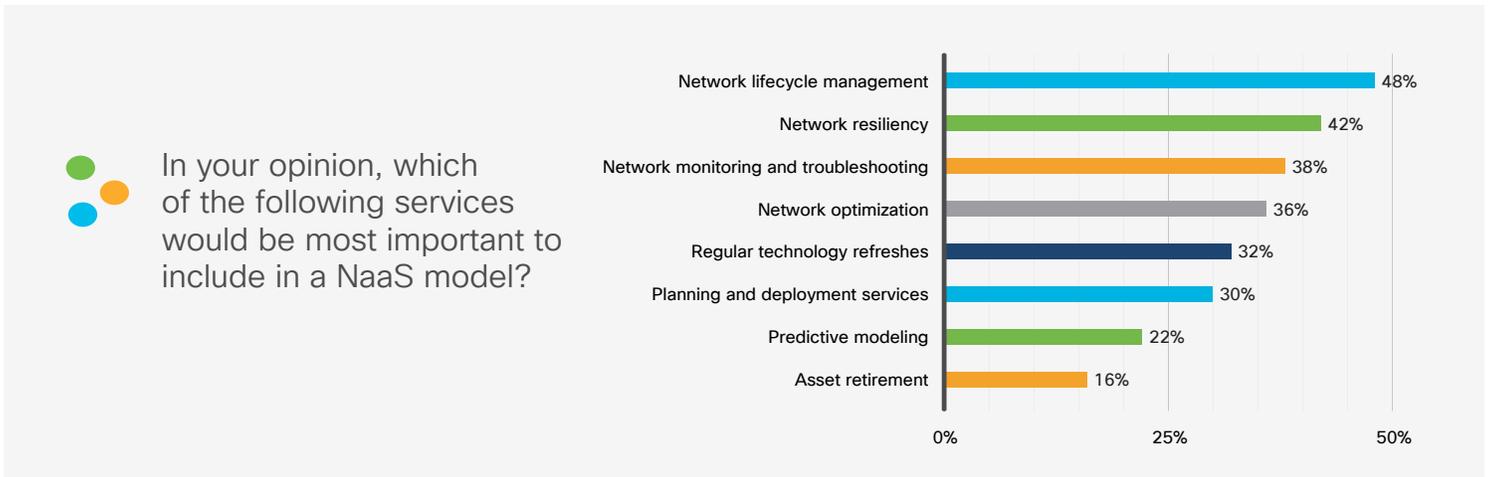
So what's left to manage? The NaaS customer's NetOps team will be able to focus more of their time on core or value-added activities.

That might include, for example, defining and monitoring the desired network outcomes, such as user and application access policies and application performance levels. By monitoring network performance and insights, the customer's NetOps team can continually adapt and optimize network policies and behaviors across domains.



Using APIs, the customer's NetOps team can also manage the integrations between NaaS and their existing systems to streamline IT workflows and processes. And they'll likely want to work closely with the NaaS provider to ensure that SLAs and service-level objectives (SLOs) are being met. Regardless of operational responsibilities and handoffs, it's clear that IT professionals are keen to reduce the burdens of infrastructure management.

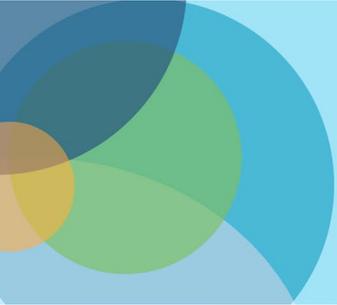
Forty-eight percent of the IT pros we polled said network lifecycle management is the most important service to include in a NaaS model. Network resiliency (42%) and network monitoring and troubleshooting (38%) rounded out the top three. This reinforces the notion that managing an increasingly distributed and complex mix of locations, users, devices, applications, and cloud resources leaves too little time for value-added activities and innovation.



“The provider handles the day-to-day minutiae. The internal team can then focus on adding more value through the network by addressing new requirements coming alive. Our engineers and technicians don’t need to stop to solve problems. They can focus on new projects.”

– Senior network engineer, global consulting firm

**Bottom line:**  
Operational responsibilities are shared in a NaaS model. The burden of network lifecycle management moves to the provider, allowing the customer’s IT team to focus more on operational activities that contribute business value.

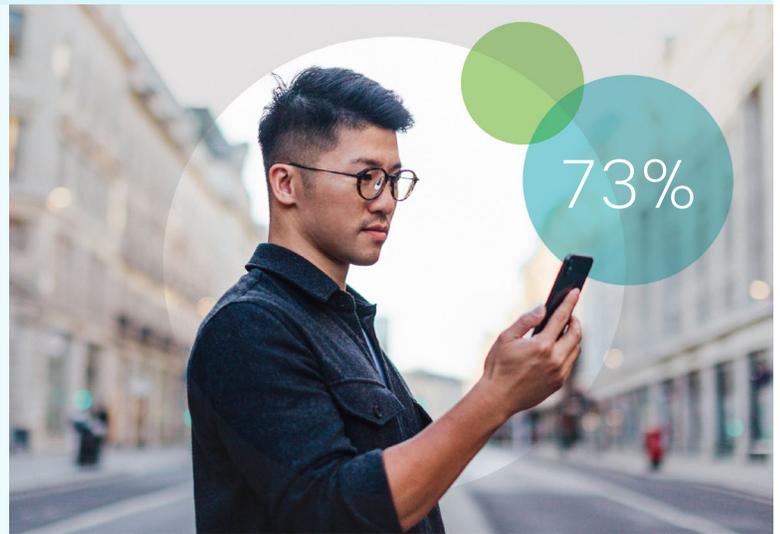


## Roles, responsibilities, and skill sets

In shifting infrastructure maintenance and lifecycle management responsibilities to the provider, NaaS frees up a considerable amount of time. And it enables the customer's NetOps team to focus on desired network outcomes rather than the technological and operational aspects of maintaining the infrastructure.

In other words, network engineers shift from “flying the plane” to “calling the shots in the control tower.” But what types of shots do they anticipate calling?

According to our respondents, 27% believe their IT staff would leverage their technical expertise—and a NaaS dashboard—to translate business needs into network policies. A surprising 73% of respondents said they would prefer third-party providers to carry out this business-critical role, possibly indicating a perceived shortage or lack of confidence in internal skill sets.

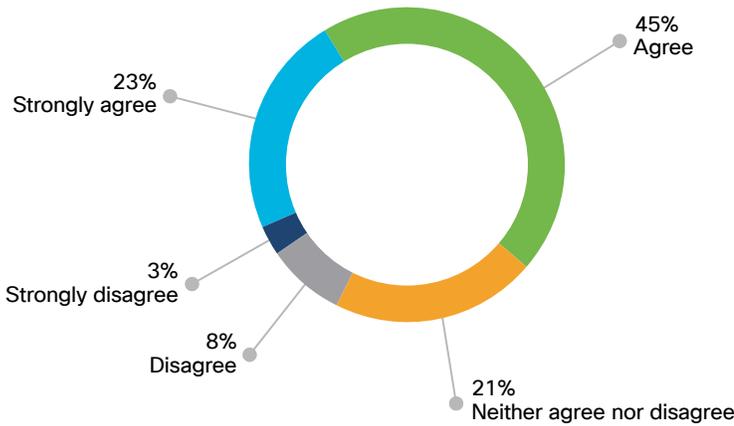
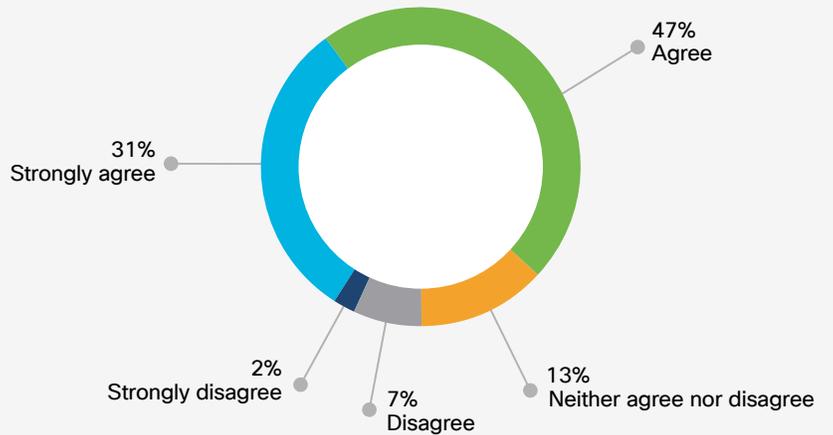


“With the lion’s share of the day-to-day work shifting to the NaaS provider, the customer’s NetOps team will likely gravitate toward general networking and network security skills, as well as design skills that translate business intent into high-level networking concepts. They will need to work closely with the NaaS provider to optimize network designs, policies, performance, and SLAs. And strong data science skills will be needed to identify and orchestrate these changes.”

– Joe Clarke, Distinguished Engineer, Cisco



Adopting a NaaS model would provide our network team members with opportunities to upskill and deliver greater value to the organization.



NaaS will free up my networking team to focus on tasks that deliver IT innovation and business value rather than day-to-day network management.



**Bottom line:**

More than 75% of organizations agree or strongly agree that NaaS models will give their teams an opportunity to advance their skill sets and deliver more value.

## Concerns and hesitations

NaaS impacts many areas of an IT organization, requiring new operating models, new integrations with existing processes and technologies, changing roles and skill sets, and a financial shift from CapEx to OpEx. With these wide-ranging implications in mind, the IT professionals we spoke with had mixed reactions to NaaS. And most were on opposite ends of the spectrum, being either hot or cold when it comes to NaaS adoption.

IT leaders' perspectives on NaaS seemed to reflect their overarching networking philosophy. And those philosophies were primarily divided into two camps: "control IT" and

"lean IT." The ones with the former philosophy have not only a highly skilled staff, but also a strong belief that their teams should own and fully control the networking stack. Conversely, the latter group is seeking to consolidate their IT, reassess routine versus value-added tasks, and find ways to offload infrastructure maintenance. Not surprisingly, the organizations with a "lean IT" mind-set that have already shifted some of their IT resources to the cloud are very open to NaaS solutions.

“We’re dragging our heels with NaaS because we feel the network wouldn’t get the care and prioritization it deserves, and it wouldn’t be a perfect match for our environment.”

– IT manager, networking, U.S. military agency

Some IT leaders with whom we spoke indicated that their networks and processes are highly unique, and they didn’t believe NaaS could address their one-of-a-kind complexities and challenges.

Others voiced a real concern that NaaS would cause upheaval within their IT organization.

While IT leaders share a broad set of concerns, a perceived loss of control is chief among them. Thirty percent of respondents questioned whether they will be able to meet future demands if they adopt NaaS. Other respondents were concerned about the loss of control for security (26%) and performance (20%). In actuality, NaaS is designed for greater on-demand scalability and faster support for the latest technologies. And security, performance, and other important control decisions still lie with the IT team, not the NaaS vendor.

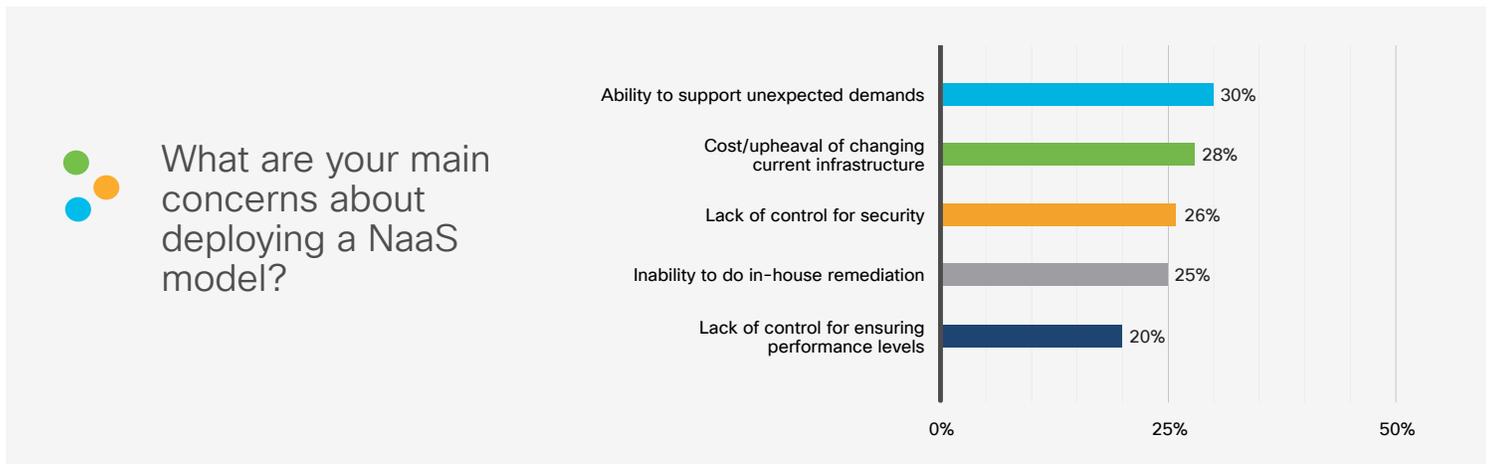




“A provider must adapt to our security guidelines and take directives from us. That’s a key differentiator for NaaS.”

– Lead architect, global technology firm

Twenty-eight percent of respondents said the cost and disruption associated with changing their existing infrastructure and operations were inhibitors. Understandably, organizations have a multitude of technologies and investments, many of which fall on different depreciation schedules. Other organizations have legacy technologies and applications that may not be a good fit for NaaS. And some simply don’t want to offload the day-to-day management of their infrastructure.



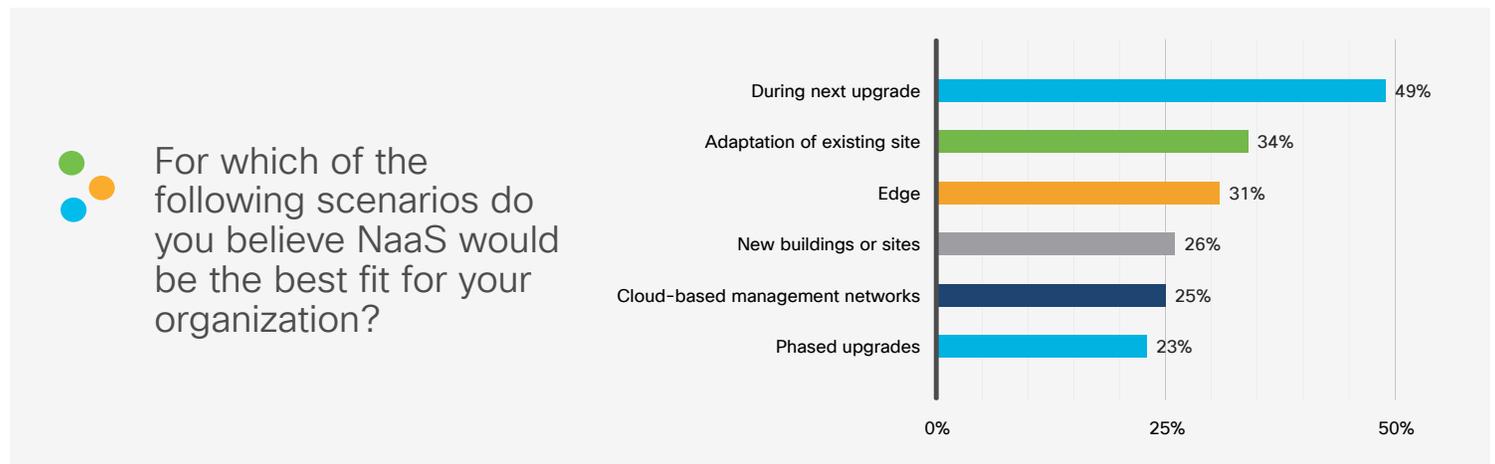
To address these concerns and hesitations, organizations can start small with one domain to test out the NaaS model. This would allow them to better understand NaaS capabilities and control points without significantly altering their network infrastructure or operations. They’d be able to experience and optimize the division of responsibility between the provider and their internal team, and learn how to work together to achieve the best outcomes. Once they have a full understanding of—and comfort with—the roles, responsibilities, and control points, they can scale and expand to other domains over time, leveraging the insights and best practices learned along the way.

**Bottom line:**  
 Concerns are to be expected with any transformational model. IT leaders can start small to evaluate the risks and rewards associated with NaaS to see if it’s right for their organization.

## Adoption trends

Because of its impact on network operations and the diversity of ways it can be leveraged, NaaS adoption will be different for every organization. A NaaS readiness assessment and deployment roadmap can minimize complications and maximize success.

According to our respondents, 49% of IT leaders and 57% of network practitioners believe the best timing and circumstance for NaaS adoption is during a network infrastructure upgrade or refresh, when they are seeking to access new technology (automation, 100 Gigabit Ethernet, Wi-Fi 6, 5G, SD-WAN, SASE, etc.). Thirty-four percent of respondents said adapting an existing (brownfield) site where networking technology is already deployed is the ideal scenario for NaaS adoption. Interestingly, only 26% said a greenfield site would be the best fit for NaaS adoption. And only 23% said a phased approach, where domains are upgraded one by one with NaaS, would be the best scenario for their organization.



**Bottom line:**  
How, when, and why NaaS is deployed will be different for every organization.

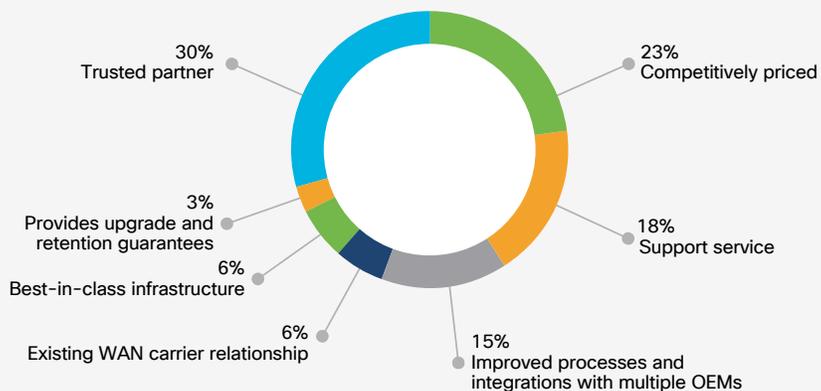
## Choosing a NaaS provider

With the network being a critical enabler of employee productivity, customer engagement, and business operations, choosing the right NaaS provider is no trivial task. Some of the IT leaders with whom we spoke have a real fear of losing control. And yet they are willing to give up a measure of control if—and only if—it is placed in the hands of a trusted partner. Whether that means working with a systems integrator, managed services provider, or value-added reseller, they're most comfortable with established partners that already have a deep understanding of their network environment, business goals, and support needs.

For NaaS deployments, nearly a third of IT professionals in our survey viewed systems integrators as more trustworthy and competitively priced compared to network vendors. They also told us “trusted expertise” was much more important than “best-in-class infrastructure.”



What is the main reason you would prefer to work with a partner vs. directly with a network vendor for your NaaS deployment?

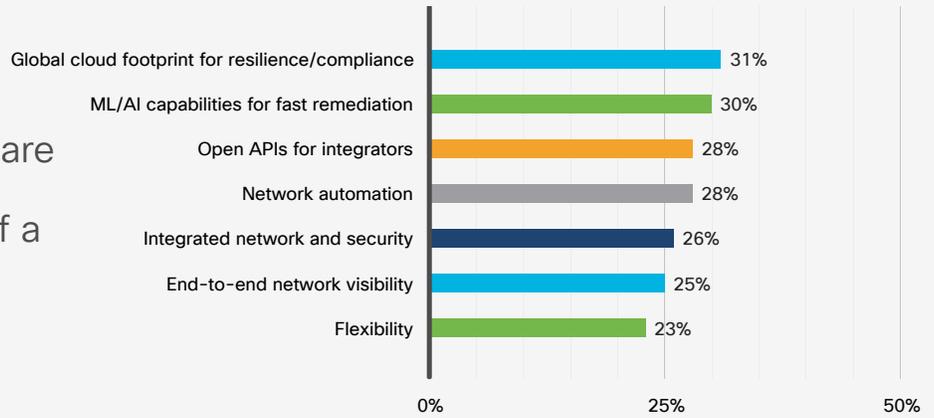


And when it comes to translating business needs into technical policies, IT professionals are two to three times more likely to trust a systems integrator or their internal IT staff than a NaaS vendor. This underscores the fact that organizations are looking not just for a solution when it comes to NaaS, but also for the guidance and assistance of a trusted advisor that knows them well.

When considering the technical attributes of NaaS providers and solutions, our respondents prioritized a global cloud footprint for reliability, performance, and regional compliance (31%), as well as machine learning (ML) and artificial intelligence capabilities that enable continuous optimization of the NaaS service (30%). APIs, automation, integrated security, network visibility, and network flexibility also rated highly.



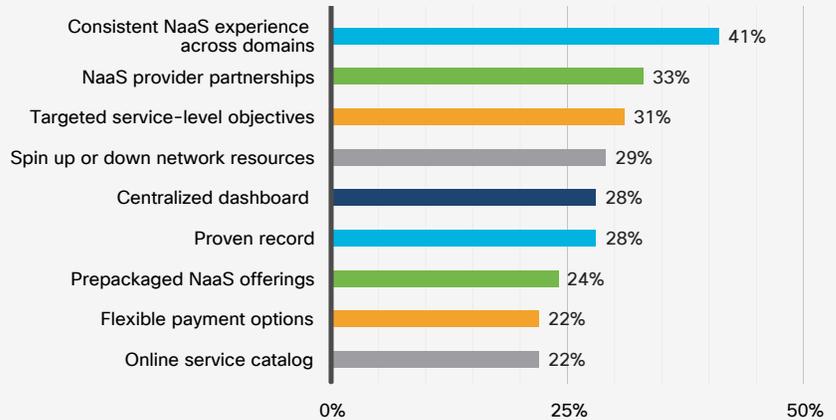
What do you believe are the 2 most important technical attributes of a NaaS offering?



Forty-one percent of respondents said it is important for a NaaS provider to offer a consistent NaaS platform across network domains (access, WAN, data center, cloud, etc.). With many IT teams struggling to manage multiple environments, tool sets, and operating models, NaaS provides an opportunity to consolidate network resources, policies, and operations.



Which of the following would be most important to have if you were to consider a NaaS provider's offering?



“What I’m really looking for is someone who can handle the routine management activities across our network and systems, like firmware updates, configurations, and changes. Then my team can focus on improvements, builds, and strategy implementations. And maybe it flexes. Maybe this month I’m doing some pretty heavy lifting on my own, and then I get some help for a couple months to expand that usage and assist with the work.”

– VP of technology and security, U.S. \$100 M nonprofit



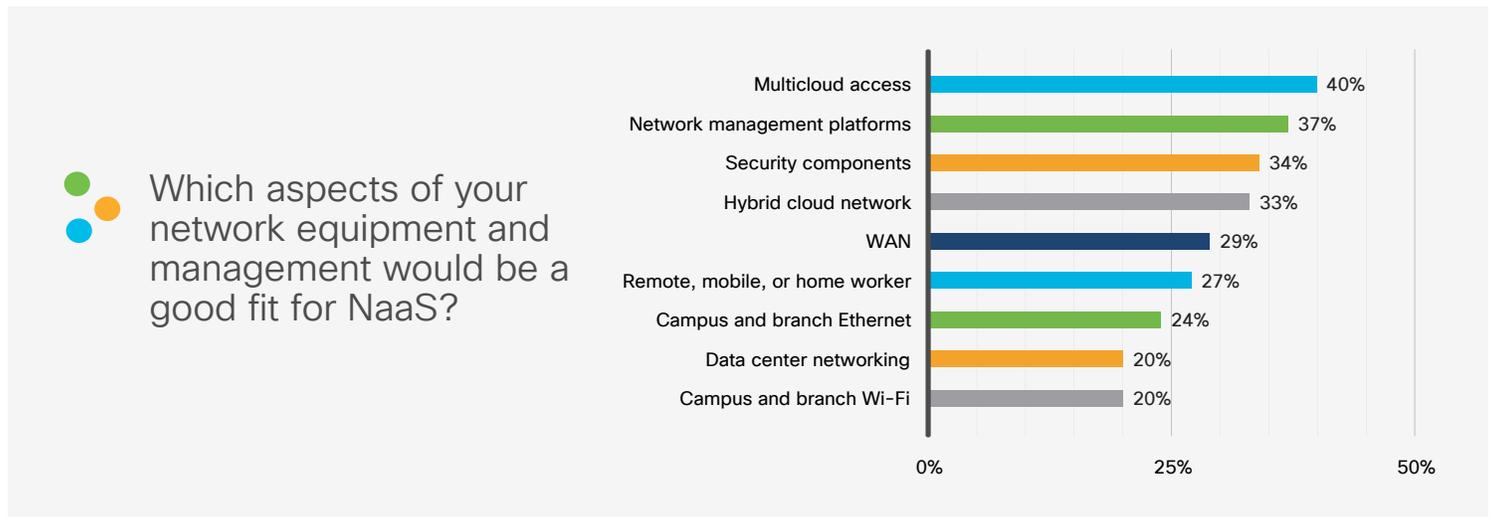
Bottom line:

Systems integrators are viewed as more trustworthy, competitively priced, and service oriented than NaaS vendors. Regardless of the provider, customers are looking for a service and operational experience that spans all network domains.

## SASE and the different flavors of NaaS

There are a growing number of NaaS offerings, including wired and wireless LANs, VPNs, WANs, network security, remote or work-from-home access, data center networks, and cloud networks. According to our research, NaaS models that include multicloud access and security are the most desirable. This means that SASE, which provides secure multicloud access from anywhere, would be an in-demand as-a-service offering among many IT organizations.

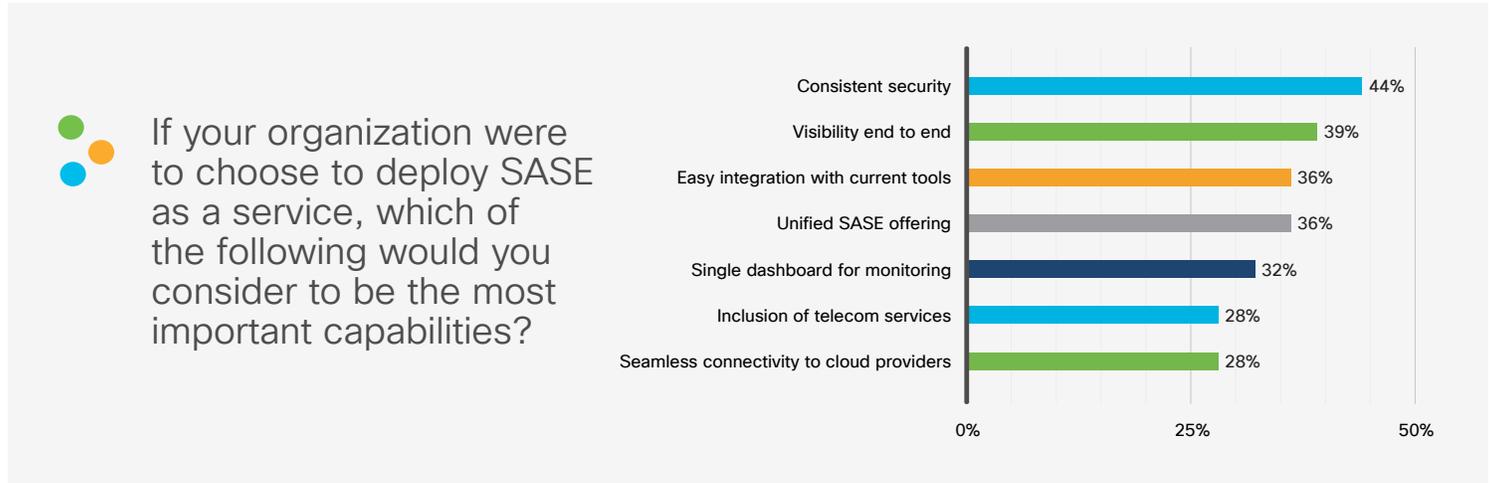
Considering the challenges of connecting to multiple disparate clouds, it's not surprising that multicloud access was identified as the top priority (40%) for NaaS. By offering SD-WAN services, NaaS vendors can provide a consistent and optimized way to connect to a wide variety of cloud-based (IaaS and SaaS) applications.



Thirty-four percent of respondents prioritized security-focused NaaS solutions, including VPN, security information and event management (SIEM), secure web gateway, firewalls, and intrusion prevention and detection services (IPS/IDS). These can help protect users, devices, and applications consistently across multiple clouds and computing environments.

NaaS vendors that offer a combination of multicloud access and security at the edge are well positioned to meet the growing demand for SASE solutions.

Nearly half (44%) of our respondents cited “consistent security, including threat detection and remediation, for all users and devices,” regardless of where they access from, as an important aspect of SASE. With increasing reliance on the internet for access to cloud-based applications, more than one in three (39%) are seeking “visibility and insights about network traffic across internet and cloud infrastructures.” And 36% are looking for SASE solutions that easily integrate with their current tools.



**Bottom line:** Multicloud access and security are top priorities for NaaS. Vendors that weave a SASE option into their NaaS portfolio can meet the growing demand to align and secure on-premises and cloud resources.



## Conclusion

Countless IT organizations are struggling to manage network complexity, respond to disruptions, protect users and data, and keep up with the accelerating pace of business. To confront these challenges, many are investigating new networking models such as NaaS.

NaaS provides continuous access to the latest networking technologies through an on-demand or subscription-based model. It shifts the burden of day-to-day network management to a third-party provider. And in doing so, it allows IT teams to focus on value-added activities that deliver greater agility, resiliency, and innovation.

As with any transformational model, there are concerns and hesitations surrounding NaaS. But it is not an all-or-nothing proposition. IT teams can work with trusted partners to try NaaS on a small scale, evaluate the risks and rewards, and see whether it aligns with their overarching business and technology strategies.



### Additional resources and assistance

[What Is Network as a Service \(NaaS\)? >](#)

[Cisco+ Solutions >](#)

[Find a Cisco Partner >](#)

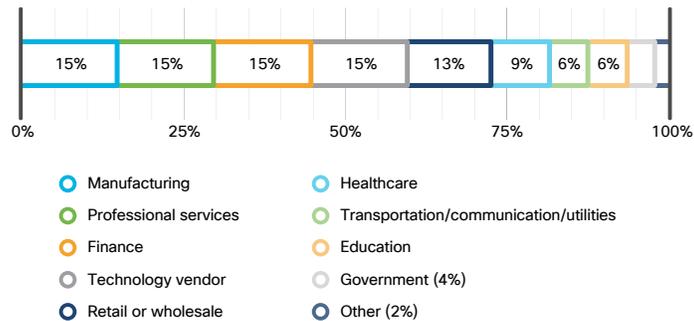
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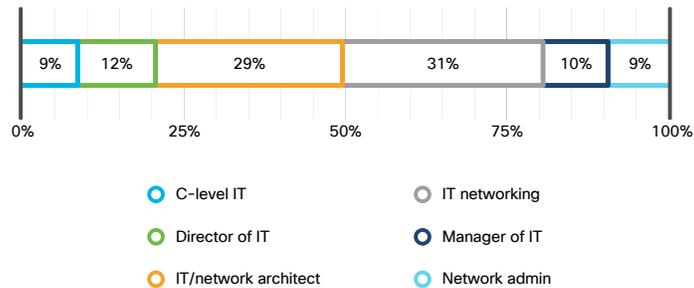
First published in 2019, the [Global Networking Trends Report](#) highlights the latest strategies and technologies within the enterprise networking and cloud industry. The report leverages industry research and provides perspectives, insights, and guidance to help IT organizations understand current technology trends, evolve their networking models, and support dynamic business needs.

For the 2022 report, we conducted interviews with 20 IT leaders and received input from 1534 IT professionals in 13 countries about their views on NaaS and how they see it aligning with or augmenting their networking strategies over the next two years. Respondents were allowed to select up to three answers per question.

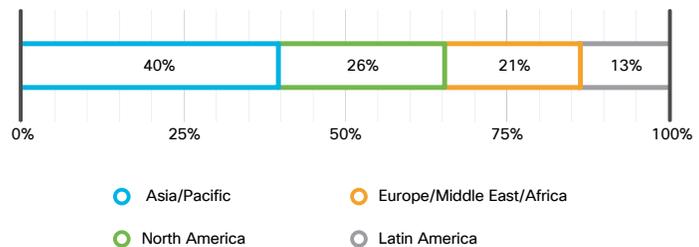
## Respondent industry



## Respondent role



## Respondent location





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