

US Enterprise Network Survey: SD-WAN and SASE Adoption by Business Size, 2023

**SD-WAN and SASE are
Essential part of
Businesses' Technology
Strategy**

**Global Information &
Communications Technologies
Research Team at Frost &
Sullivan**

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Key Findings

Key Findings



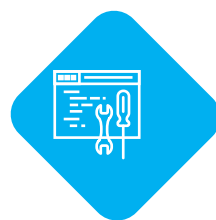
US businesses are embracing SD-WAN and SASE solutions as part of their digital transformation.

Businesses are increasingly adopting newer technologies, including the Internet of Things (IoT), AI, machine learning (ML), and Big Data analytics, to enhance their business operations and performance. To support these technologies, they are embracing SD-WAN and SASE services, which allow them to manage their network infrastructure efficiently.



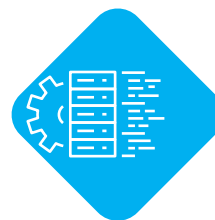
SD-WAN continues to gain traction among US businesses.

SD-WAN adoption has accelerated among US businesses in the last 2 years, as is evident when comparing Frost & Sullivan's 2021 and 2023 enterprise network surveys. In 2021, 15% of US businesses reported expanding SD-WAN to more locations, while in 2023 the percentage increased to 20%.



A fully managed model is the most preferred model for buying and deploying an SD-WAN solution.

Roughly 50% of mid-size and 59% of large businesses prefer a fully managed model for buying and managing SD-WAN, allowing them to manage network services jointly. Some small businesses (49%) prefer a co-managed model, which allows them to leverage the experience and resources of a managed service provider (MSP) but keep control of certain aspects of the network.



The adoption of SASE is growing among US businesses. SASE is in the early stages of the product lifecycle.

Small businesses are the most aggressive in deploying a SASE solution, with 28% undergoing their 1st deployment. About 37% of mid-size and 32% of large businesses are still learning and assessing the benefits of deploying a SASE solution before making any changes to their networks.



An MSP is the most preferred partner for SASE implementation.

Because of its management capabilities and expertise, an MSP is the most preferred partner for SASE implementation among all business sizes. Single vendors and separate vendors for network and security are US businesses' 2nd and 3rd choices for SASE implementation.



Research Objectives and Methodology

Research Objectives and Methodology

- Frost & Sullivan conducted a global survey of network decision-makers in May and June 2023 to understand businesses' perceptions, decisions, and purchases regarding SD-WAN and SASE. This report examines responses from different sizes of US businesses: small (10–99 employees), mid-size (100–499 employees), and large (500+ employees).
- Frost & Sullivan's goal was to understand respondents' evolving organizational priorities and how SD-WAN and SASE technologies help them achieve their business objectives.
- The results provide a glimpse of enterprise decision processes, including:
 - SD-WAN deployment trends among US businesses
 - Benefits businesses achieved from deploying an SD-WAN solution and challenges while deploying it
 - SD-WAN buying preference and SASE adoption trends
 - Reasons for SASE deployment, SASE adoption challenges, and preferred partner for SASE deployment
 - Most preferred partner for all sizes of businesses' network services needs



Respondent Profile and Methodology

Fieldwork: May and June 2023

Respondents: IT and business decision-makers responsible for selecting or purchasing network and IT services

Total sample: n=516

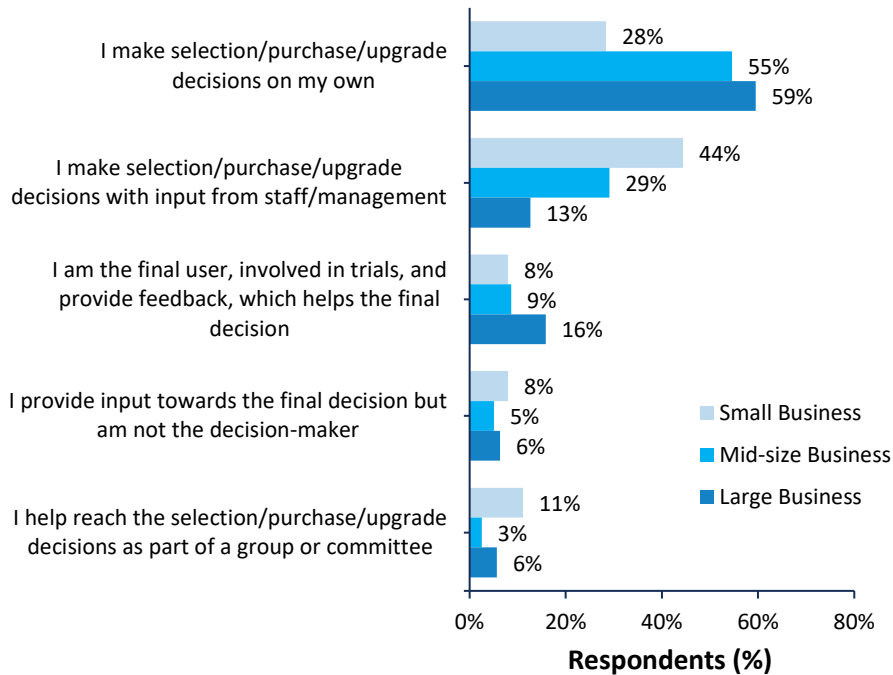
Respondents represented a range of industries and business sizes that Frost & Sullivan categorized using the number of employees.

Study period: 2023

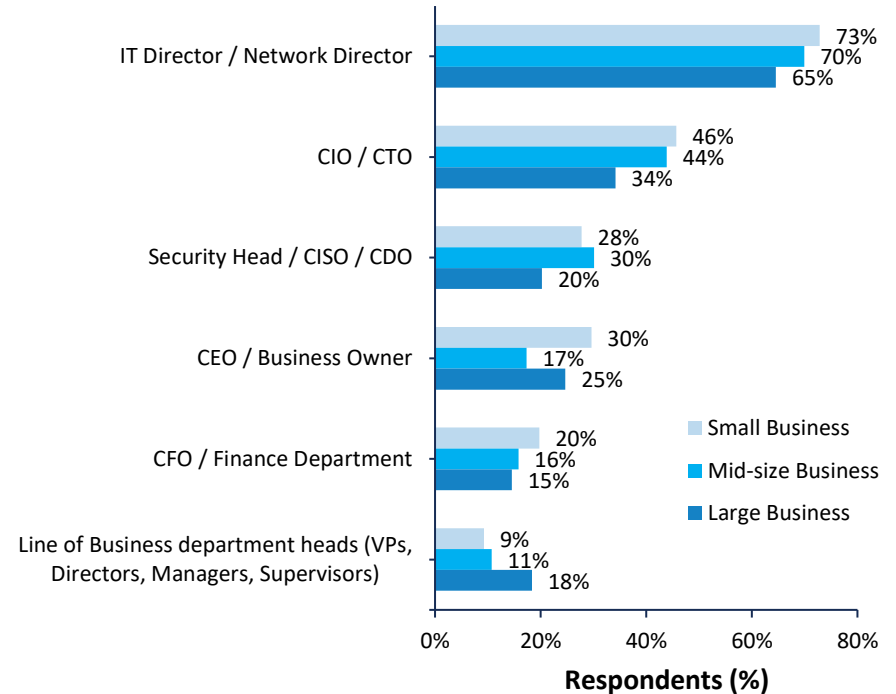
Source: Frost & Sullivan

Respondent Profile

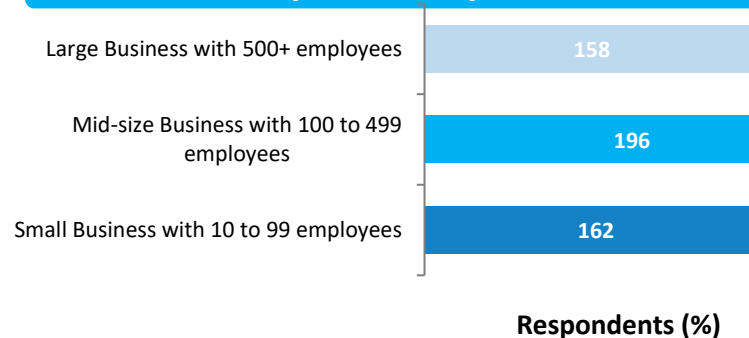
Respondents Role in IT/Network Decision Making



Respondent Titles Driving Network Service Investments



Respondents by Business Size



Base: All respondents (n=516)

QS27. Which best describes your involvement in the selection of cybersecurity solutions and technologies at your organization?

QS23. What is the size of your organization? Q6. Who drives the investments in network services in your organization?

Source: Frost & Sullivan

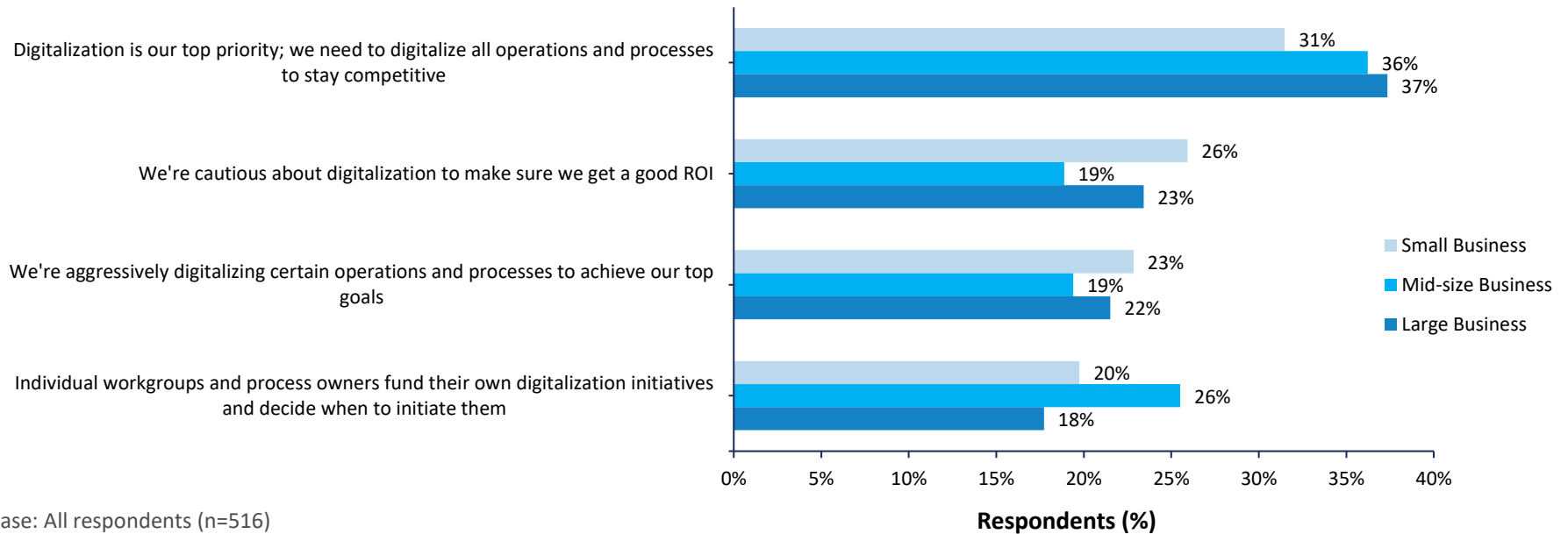


Digital Transformation Perspective by Business Size

Digital Transformation Perspective by Business Size

- Businesses of all sizes have prioritized digitalization of business operations and processes, as its benefits include optimizing IT resources, increased employee productivity and operational efficiency, cost savings, data-driven decision-making, ease of managing distributed locations, staying competitive, and enhanced customer experience.
- While investing in digitalization, small businesses are most likely to be cautious about their return on investment (ROI). Because of limited IT budgets, any erroneous investment could affect their finances. Some small businesses only invest in specific business processes and operations that directly impact their business performance; for instance, a small retail store might use additional point-of-sale devices in peak hours to process more customers and increase their sales.
- Mid-size businesses will likely assign digitalization responsibilities to specific workgroups rather than have a centralized corporate strategy. Large and mid-size businesses are more likely than small businesses to cite digitalization as a top priority.

Digital Transformation Perspective by Business Size, US, 2023



Base: All respondents (n=516)

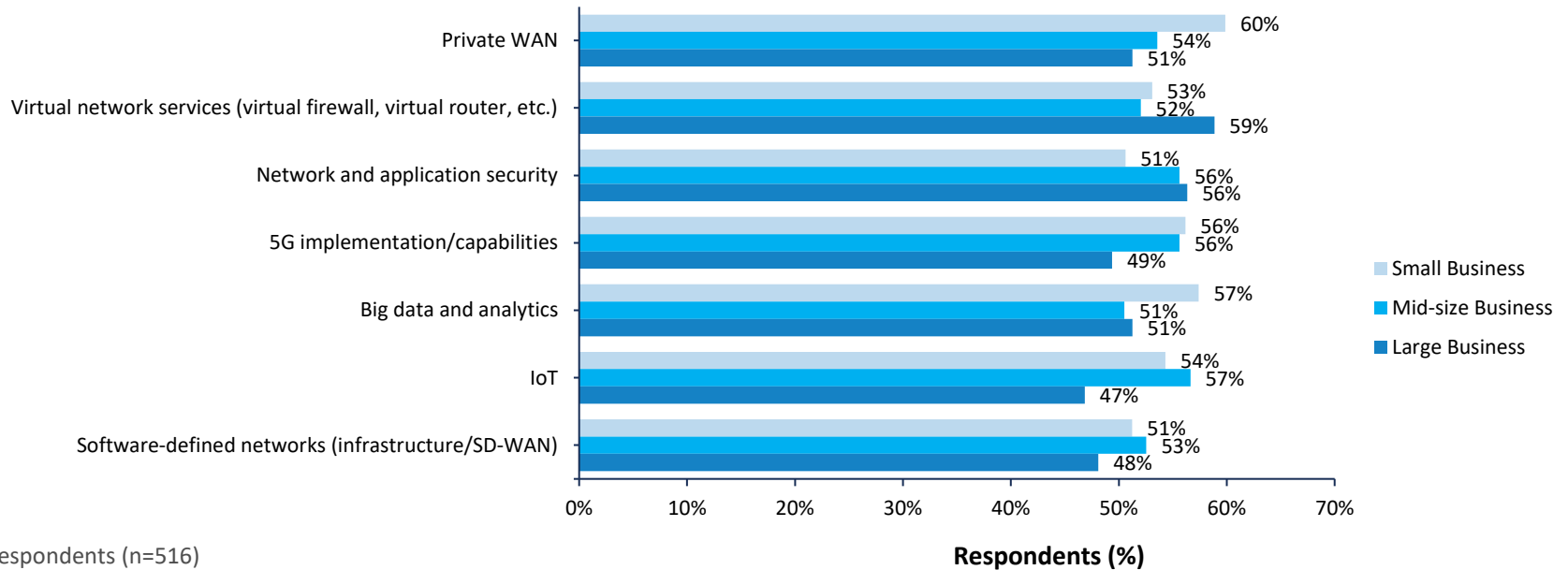
Q3. How does your organization view digitalization?

Source: Frost & Sullivan

Importance of Technologies in Achieving Digitalization Goals

- All sizes of businesses use many technologies for achieving digital transformation goals per their business needs. With the benefits of a secure private network, low latency, improved network performance, and cost-effectiveness, small businesses prefer a private wide-area network (WAN) and have less interest in security than their counterparts.
- Virtual network services are the top investment priority for large businesses. Virtual network services bring immense operational and cost efficiencies by consolidating multiple functions on a single device and allowing network administrators to manage and orchestrate the WAN centrally. Large businesses can benefit from the easy management of the distributed network, whereas cost savings, improved network performance, enhanced security, and the flexibility and agility to adapt to changing business needs attract small and mid-size businesses.
- For mid-size businesses, investing in IoT technologies, 5G capabilities, and network and application security is the top investment priority, probably because they want to improve business operations and become more productive. Some large businesses approach SD-WAN as a hybrid solution rather than completely replacing the WAN infrastructure, which is why investing in SD-WAN is not their top priority for digital transformation.

Importance of Technologies in Achieving Digitalization Goals by Business Size, US, 2023



Base: All respondents (n=516)

Q5. Please rate the importance of the following technologies for achieving your digitalization goals?

Source: Frost & Sullivan

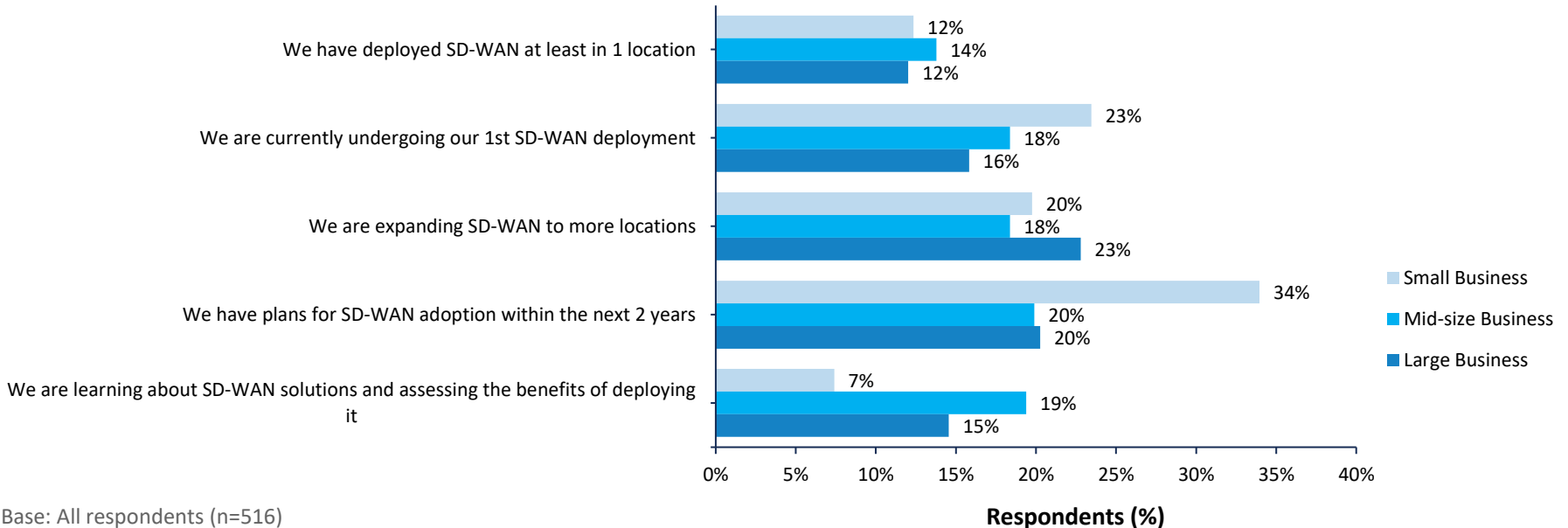


SD-WAN Adoption Trends by Business Size

SD-WAN Deployment Trends among US Businesses

- Most businesses consider SD-WAN to be vital to driving their digital transformation initiatives. Most businesses are adopting SD-WAN as per their network strategy, budget, and business requirements.
- SD-WAN adoption has accelerated in the last 2 years. In Frost & Sullivan's 2021 enterprise SD-WAN survey, 15% of US businesses reported expanding SD-WAN to more locations. That percentage increased to 20% in this year's survey.
- Realizing the benefits of SD-WAN deployment, 23% of small businesses are undergoing their 1st deployment, while 34% of small businesses plan to deploy SD-WAN in the next 2 years.
- Mid-size businesses usually struggle with branch expansion depending on varied technologies and cloud applications. So, they assess the benefits before investing in any new technology. In the next 2 years, 20% of mid-size businesses said they plan to deploy SD-WAN, whereas 19% are learning and analyzing the benefits of the SD-WAN solution.
- Managing distributed global locations, central management and monitoring, and simplified network security are some vital benefits that are pushing large businesses to expand SD-WAN deployment to more branch locations.

SD-WAN Deployment Trends by Business Size, US, 2023



Base: All respondents (n=516)

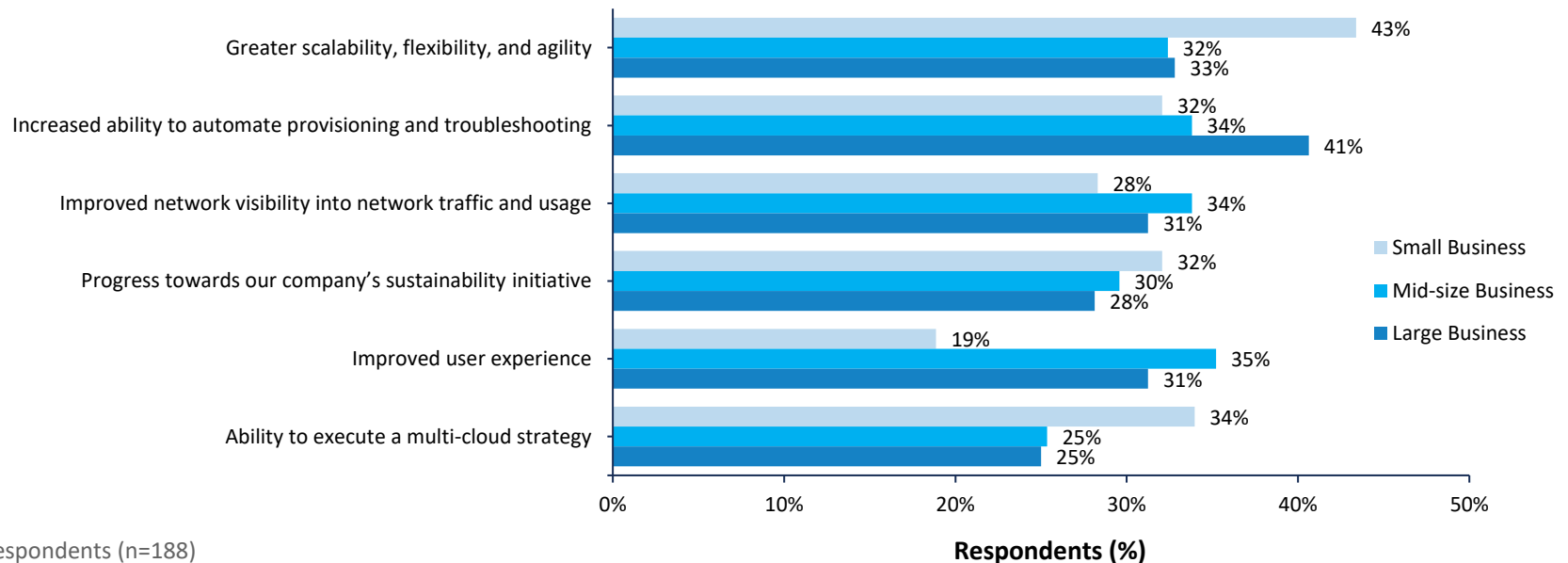
Q29. Currently, where is your organization in its SD-WAN adoption journey?

Source: Frost & Sullivan

Benefits Businesses Achieved from SD-WAN Deployment

- Small businesses indicated greater scalability, flexibility, and agility as the top SD-WAN benefit. With limited IT budgets, small businesses typically invest in technologies that align with their future IT roadmap. SD-WAN provides better flexibility to scale up/down quickly to match changing business needs than network infrastructures that rely entirely on physical hardware and on-premises infrastructure.
- For mid-size businesses, improved user experience is the primary SD-WAN benefit. Mid-size businesses may have branch offices that can benefit from SD-WAN's application-aware routing, which enhances the user experience of remote/branch employees with seamless and secure access to cloud applications.
- SD-WAN's zero-touch provisioning capability allows IT personnel to remotely access the network to provision a new router across the entire WAN or troubleshoot the network in a few minutes. This capability is especially appealing to large businesses operating in a globally distributed environment. Remote provisioning and troubleshooting make network management easier for the IT teams, and automated provisioning and troubleshooting is a top SD-WAN benefit for large businesses.

Benefits Achieved from SD-WAN Deployment by Business Size, US, 2023



Base: All respondents (n=188)

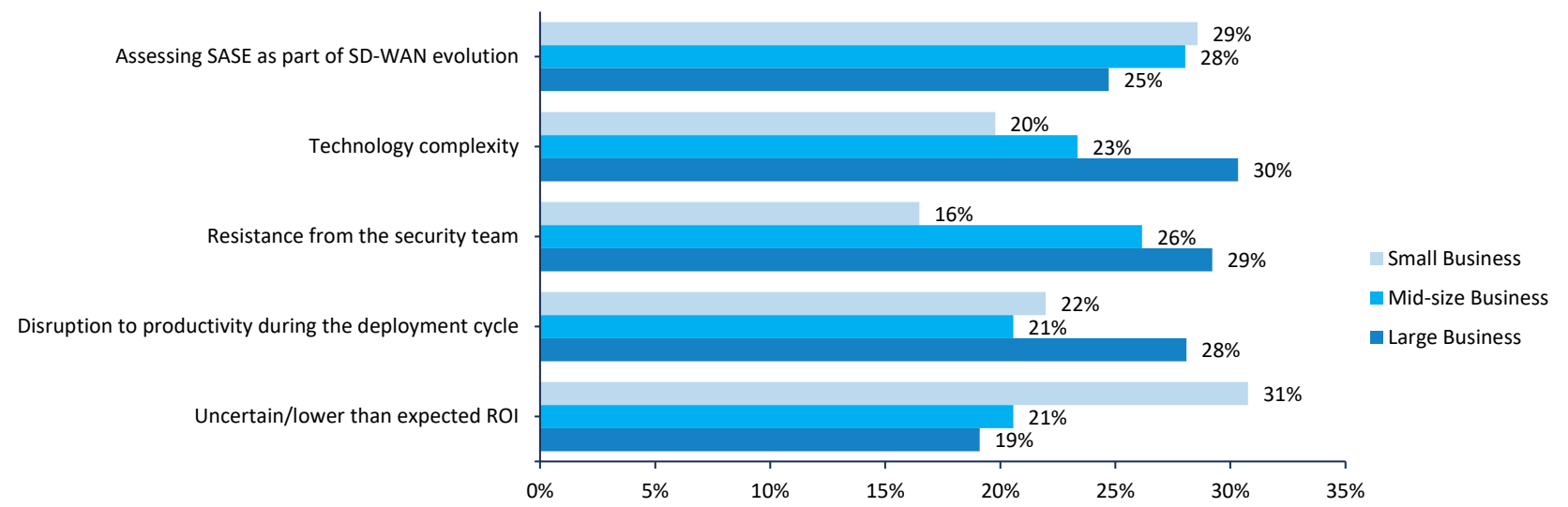
Q31. Which benefits has your organization achieved from the SD-WAN deployment?

Source: Frost & Sullivan

Challenges Businesses Face while Deploying SD-WAN

- There are certain challenges in deploying the SD-WAN solution, which varies among different business sizes.
- For mid-size businesses, assessing SASE as part of SD-WAN evolution is the top challenge in deploying an SD-WAN. SASE is a cloud-based solution that offers network and security services to protect users, applications, and data, regardless of location. SD-WAN is a component of SASE, and many businesses are uncertain whether to deploy SD-WAN or the full SASE solution.
- Technology complexity is the main challenge for large businesses, whose globally distributed locations may make it difficult to manage SD-WAN deployments. Mid and large businesses also cite resistance from security teams, which may reflect discord between network and security teams that usually function separately.
- For 31% of small businesses, uncertain/lower ROI is the top challenge because it is difficult to assess the outcome of technology investment quickly. For instance, it is difficult to measure improvement in application performance from an ROI perspective.

Challenges Faced While Deploying SD-WAN by Business Size, US, 2023



Base: All respondents (n=287)

Q33. What are the key challenges you experienced while implementing SD-WAN in your organization?

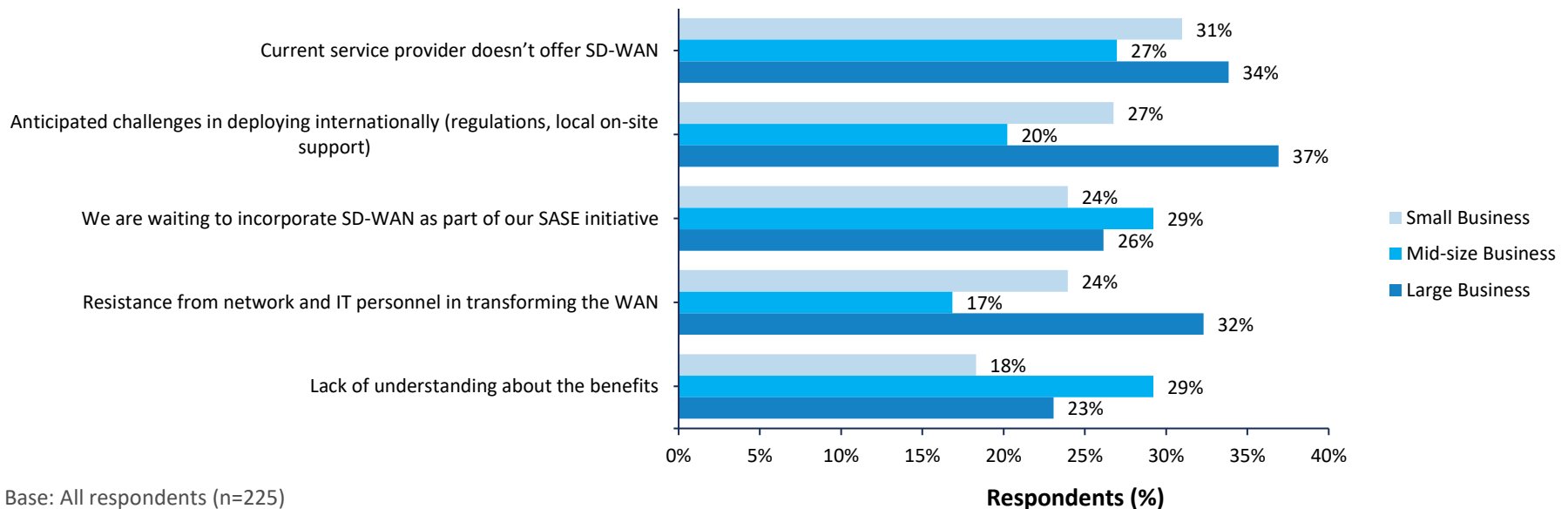
Respondents (%)

Source: Frost & Sullivan

Reasons for Not Adopting SD-WAN

- Among the minority of businesses that have not adopted SD-WAN, a preponderance indicated that their current service provider does not offer SD-WAN as the main reason for not adopting SD-WAN. Businesses usually engage with service providers on a long-term contractual basis, and, if the service provider does not offer an SD-WAN solution, they must wait till the end of the contract to engage with another service provider that offers an SD-WAN solution.
- Businesses with international operations must abide by local regulations on data policies and local on-site support, which could be a factor for the 37% of large businesses who cited “anticipated challenges in deploying internationally” as their main reason for not adopting the technology.
- Incorporating SD-WAN as part of SASE, resistance from IT and security teams, and lack of understanding about SD-WAN benefits are the other reasons for not adopting SD-WAN.

Reasons for Not Adopting SD-WAN by Business Size, US, 2023



Base: All respondents (n=225)

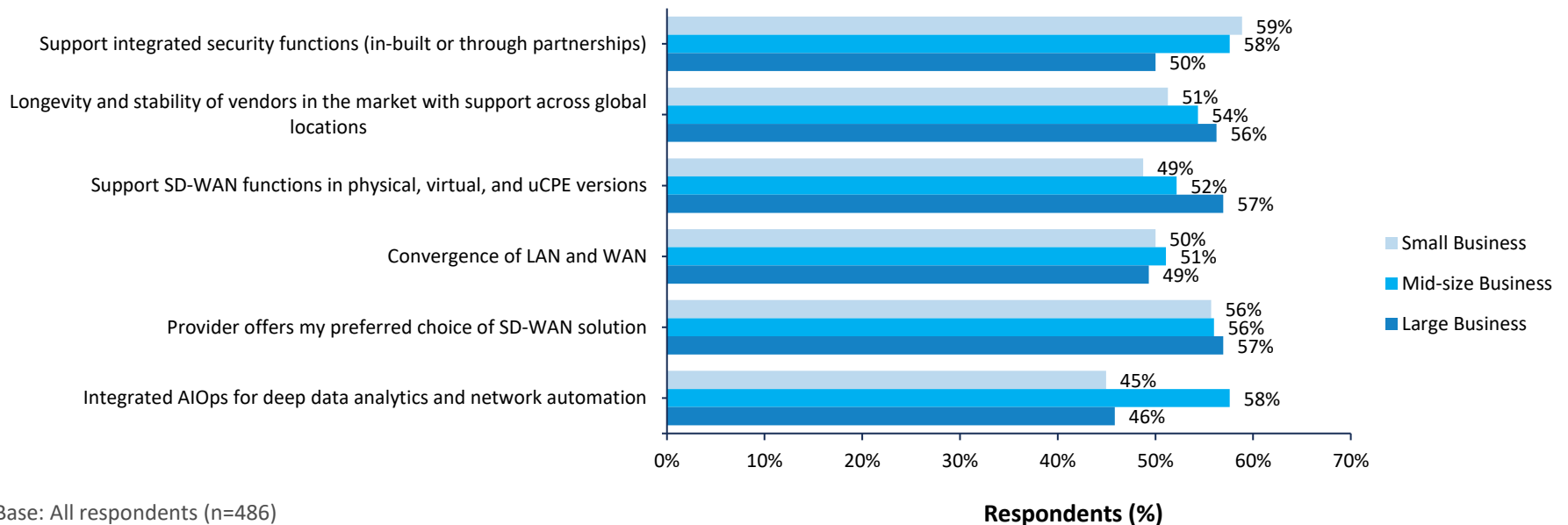
Q34. Which are the key reasons for not adopting SD-WAN in your organization?

Source: Frost & Sullivan

Criteria Important in Selecting an SD-WAN Solution

- Businesses prefer SD-WAN solutions that can combine enhanced security and advanced routing features to secure the highly distributed WAN. Small businesses are highly vulnerable to security threats, as they might not have a dedicated IT team to monitor and identify probable security threats. An overlooked security breach can halt business operations.
- Provider longevity and stability in the market and support across global locations is another important criterion.
- Responses such as convergence of LAN and WAN, provider offers my choice of SD-WAN, support SD-WAN function in physical, virtual, and uCPE versions, and integrated AIOps for deep data analytics, are parameters that are more focused on the transformation of network infrastructure using an SD-WAN solution.

Important Criteria in Selecting an SD-WAN Solution by Business Size, US, 2023



Base: All respondents (n=486)

Q37. How important are each of the following criteria for your organization when selecting an SD-WAN solution?

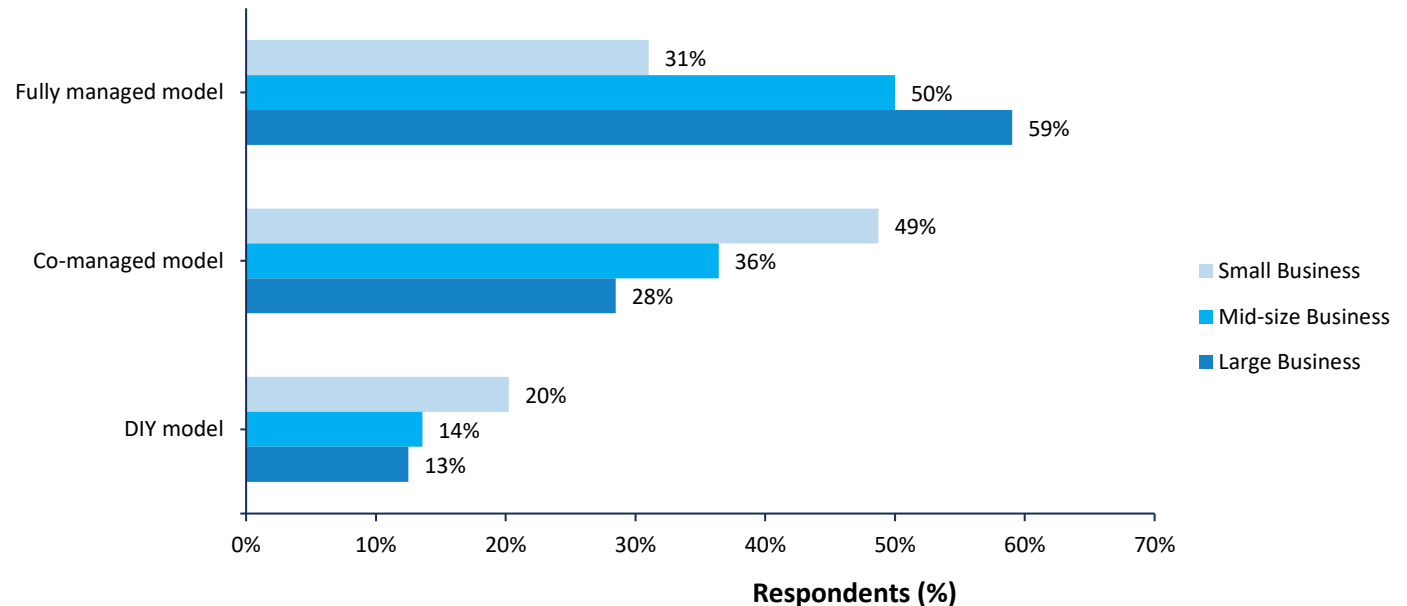
uCPE = universal customer premise equipment; LAN = Local Area Network

Source: Frost & Sullivan

Preference for Buying and Managing SD-WAN

- Mid-size and large businesses prefer a fully managed model for buying and managing SD-WAN. A fully managed SD-WAN vendor installs and manages the edge devices, procures and manages access links from multiple network service providers, and manages the solution's day-to-day network management aspects. The main reasons for adopting a fully managed model include unified management of all network services, vendor management, consolidated billing and portal capabilities, flexibility to buy/pay for service through a subscription-based model, and MSP providing service-level agreements (SLAs) for SD-WAN service.
- Businesses that like to leverage the experience and resources of managed services providers but hold direct control over certain aspects of the network prefer the co-managed model. Forty-nine percent of small businesses prefer a co-managed model for SD-WAN deployment, likely because they want the learning associated with it.
- The do-it-yourself (DIY) approach is the least preferred option among all business sizes, although 20% of small businesses prefer DIY because they are attracted to the plug-and-play installation and prefer to avoid third-party management costs.

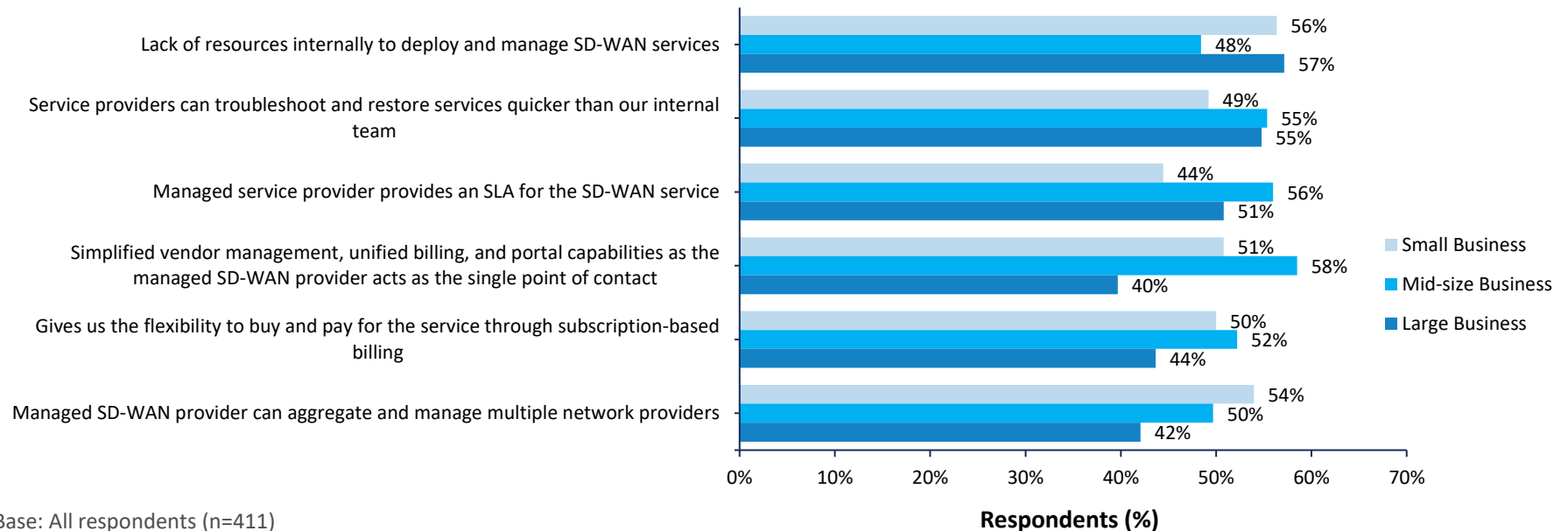
Preference for Buying and Managing SD-WAN by Business Size, US, 2023



Importance of Criteria while Selecting a Fully Managed/Co-Managed SD-WAN Solution

- The MSP deploys and manages both SD-WAN and network services components of the solution end to end. The fully managed SD-WAN solution best fits businesses that lack IT resources to deploy and manage the SD-WAN solution.
- Small and large businesses cite a lack of dedicated IT resources as a primary reason for selecting a managed SD-WAN solution.
- Mid-size businesses value the managed services provider as a single point of contact for vendor management, unified billing, and portal capabilities.
- While the ability to software-define the WAN is a revolutionary approach to WAN deployments, deploying and managing the underlying WAN infrastructure can be challenging for enterprise IT departments. An MSP simplifies WAN management, as it has the resources and expertise to manage complex network scenarios.

Important Criteria while Selecting a Fully Managed/Co-managed SD-WAN Solution by Business Size, US, 2023



Base: All respondents (n=411)

Q39. How important is each of the following reasons in your preference to go for a fully managed/co-managed SD-WAN?

Source: Frost & Sullivan

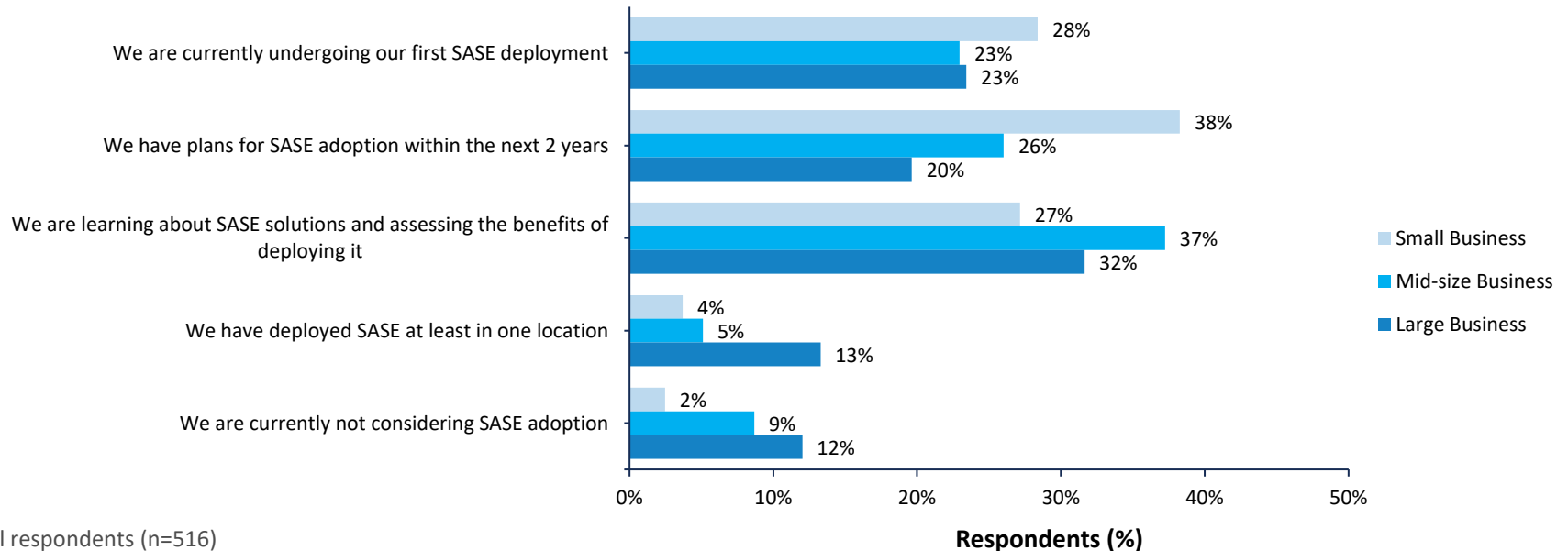


SASE Adoption Trends by Business Size

SASE Adoption Trends among US Businesses

- SASE is a cloud-native architecture that integrates all networking and security functions into a cloud-delivered security platform. The platform is highly secure, available, and scalable. SD-WAN is a component of most SASE offerings, so many firms are considering the 2 technologies in tandem. As a less mature technology than SD-WAN, SASE is still in the exploration phase for many businesses.
- Small businesses are the most aggressive in deploying and planning to deploy a SASE solution, probably because of its cost-effectiveness and flexibility. Twenty-eight percent of small businesses stated they are undergoing their 1st SASE deployment, while 38% plan to deploy SASE in the next 2 years.
- SASE is still in its early stages. Mid-size and large businesses are learning and assessing the benefits of deploying a SASE solution before making any changes to their network infrastructure.

SASE Adoption Trend by Business Size, US, 2023



Base: All respondents (n=516)

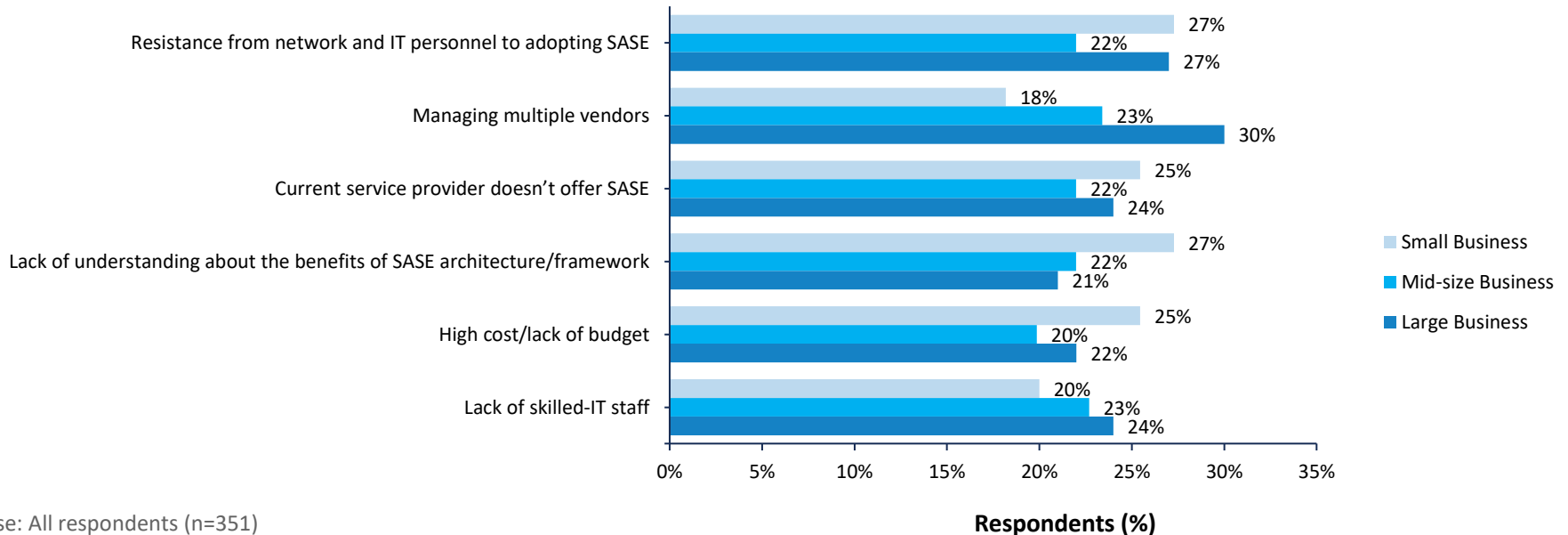
Q42. Currently, where is your organization in its SASE adoption journey?

Source: Frost & Sullivan

Top Challenges Businesses Faced in the Adoption of SASE

- Resistance from network and IT teams is the main challenge in adopting a SASE solution. SASE framework requires changes in an existing network security architecture that leaves behind significant investments in hardware and software solutions and disrupts the roles within the existing IT team because enterprises will have to retrain or reassign roles to their staff. This disruption in day-to-day IT operations is a major reason for resistance.
- Managing multiple vendors for SD-WAN and SASE complicates the management, making it difficult to gain visibility across various modules from a single unified console. In addition, the incompleteness and inconsistencies in different vendors' SASE offerings across the market have led to confusion among end users and potential buyers when identifying the appropriate solutions for their businesses. Thirty percent of large businesses indicated managing multiple vendors as the top reason for not adopting SASE.
- The immature SASE market means that not all vendors offer a complete and comprehensive SASE solution. On the other hand, businesses interested in SASE need a prolonged decision-making process to determine the right approach and vendor for their SASE implementation. The lack of understanding about SASE benefits, high costs, and lack of an IT budget are the other reasons for not adopting the technology.

Top Challenges Faced in the Adoption of SASE by Business Size, US, 2023



Base: All respondents (n=351)

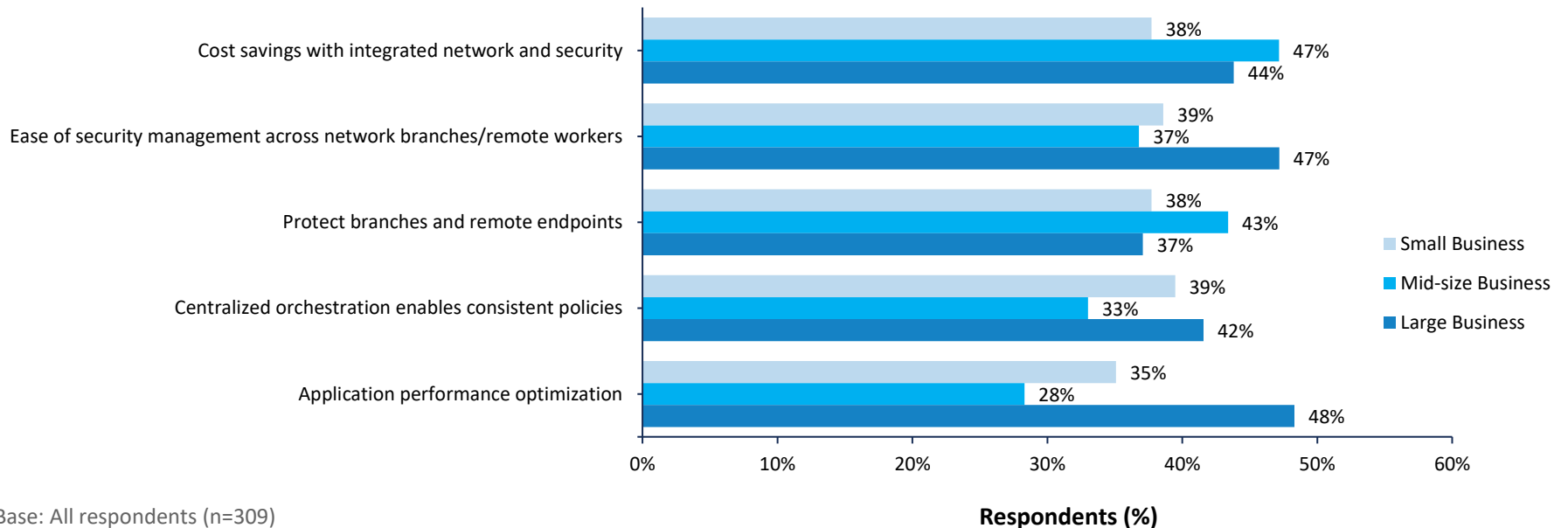
Q45. Which are the key challenges for adoption of SASE in your organization?

Source: Frost & Sullivan

Top Reasons for Deploying a SASE Solution

- All sizes of businesses indicated that cost savings with integrated network and security are the top reason for SASE adoption. SASE enables organizations to integrate or converge networking and security functions into a single unified platform, reducing IT staff costs and operational overhead with a single cloud-delivered platform.
- Ease of security management across branches was frequently cited as a reason for SASE deployment.
- Large businesses are way more interested in application performance optimization through SASE deployment. As business applications are distributed among branch locations, private data centers, public clouds, private hosted clouds, and hybrid clouds, latency and optimizing application performance become more important. SASE ensures optimal bandwidth and high performance through latency-optimized routing.

Top Reasons for Deploying a SASE Solution by Business Size, US, 2023

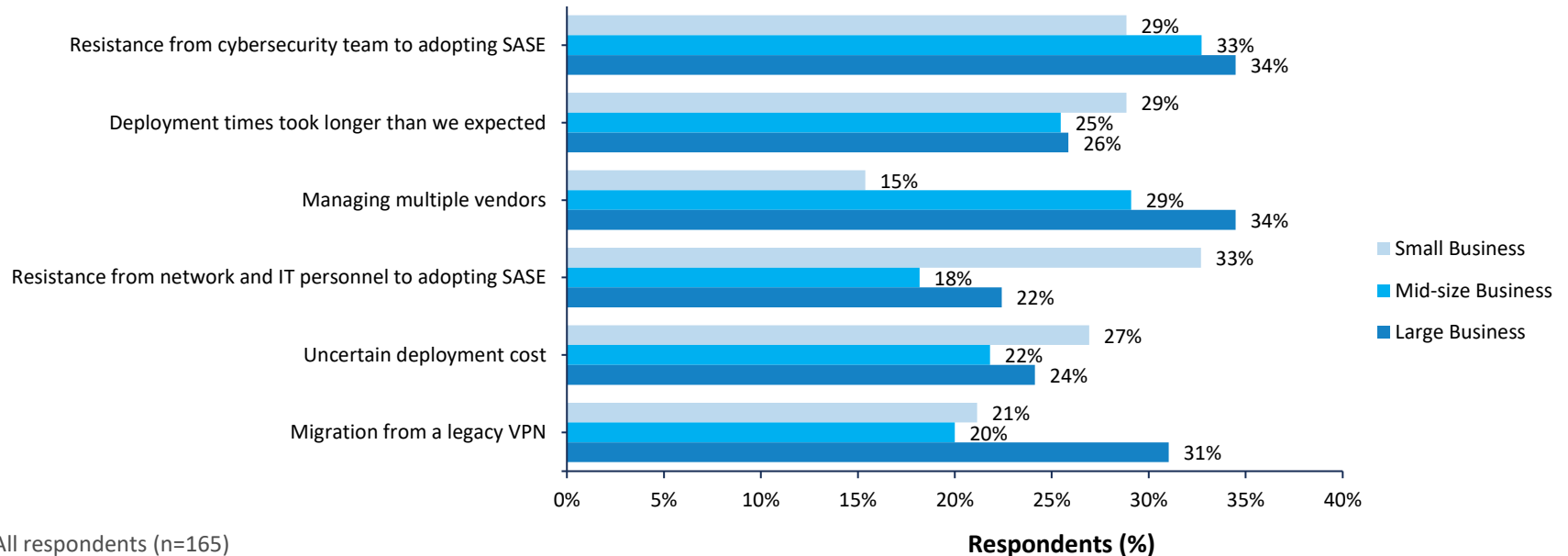


Source: Frost & Sullivan

Top Challenges Businesses Faced while Implementing SASE

- Despite the technology’s integrated nature, organizations still struggle with SASE implementations. Some challenges are because of corporate culture, as the SASE model requires organizations to replace the entire legacy networking and security architecture, which involves different stakeholders in the organization, including networking, security, and the operation teams.
- Usually, different departments within the IT teams are responsible for managing the implementation of different vendors’ solutions. The process is time-consuming and increases the operational overhead and complexity. Integrating vendors’ solutions causes security and business risks when integration issues create cybersecurity gaps, especially as most organizations lack in-depth technical skills and experience. Large businesses indicated resistance from cybersecurity teams and managing multiple vendors as their top SASE implementation challenges.
- Uncertain costs and migration from legacy virtual private networks are the other challenges businesses faced while implementing a SASE solution.

Top Challenges Faced while Implementing SASE by Business Size, US, 2023



Base: All respondents (n=165)

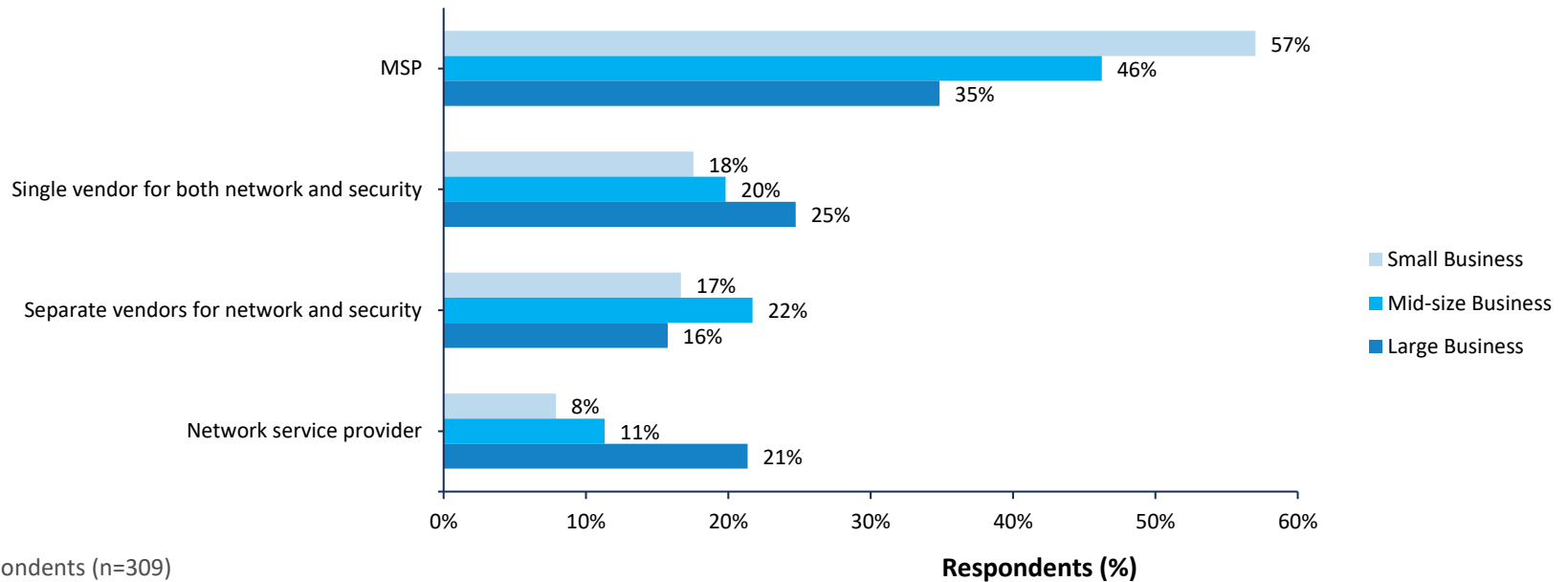
Q44. Which were the key challenges faced while implementing SASE in your organization?

Source: Frost & Sullivan

Preferred Partner for Implementation of SASE

- An MSP is the most preferred partner to implement SASE solutions among all sizes of businesses. An MSP generally has a large team of IT and security professionals with expertise in delivering complex projects.
- 57% of small businesses indicated they rely on an MSP for their SASE deployment. Small businesses typically do not have an IT team or personnel to manage their network and security needs, and they rely heavily on a partner who can understand their business requirements to deploy and manage the SASE solution end-to-end.
- A single vendor for both network and security is the 2nd-most preferred partnering arrangement. With a single-vendor approach, businesses could get better pricing, clear SLAs, and enhanced productivity as single-vendor components integrate tightly and simplify management.
- Some businesses prefer engaging with “separate vendors for network and security” and “network service providers,” probably because they want to avoid lock-in, and they want the choice of best in breed instead of only depending on the vendors that the network provider offers.

Preferred Partner for Implementation of SASE by Business Size, US, 2023



Base: All respondents (n=309)

Q46. What is the preferred partner for SASE implementation in your organization?

Source: Frost & Sullivan

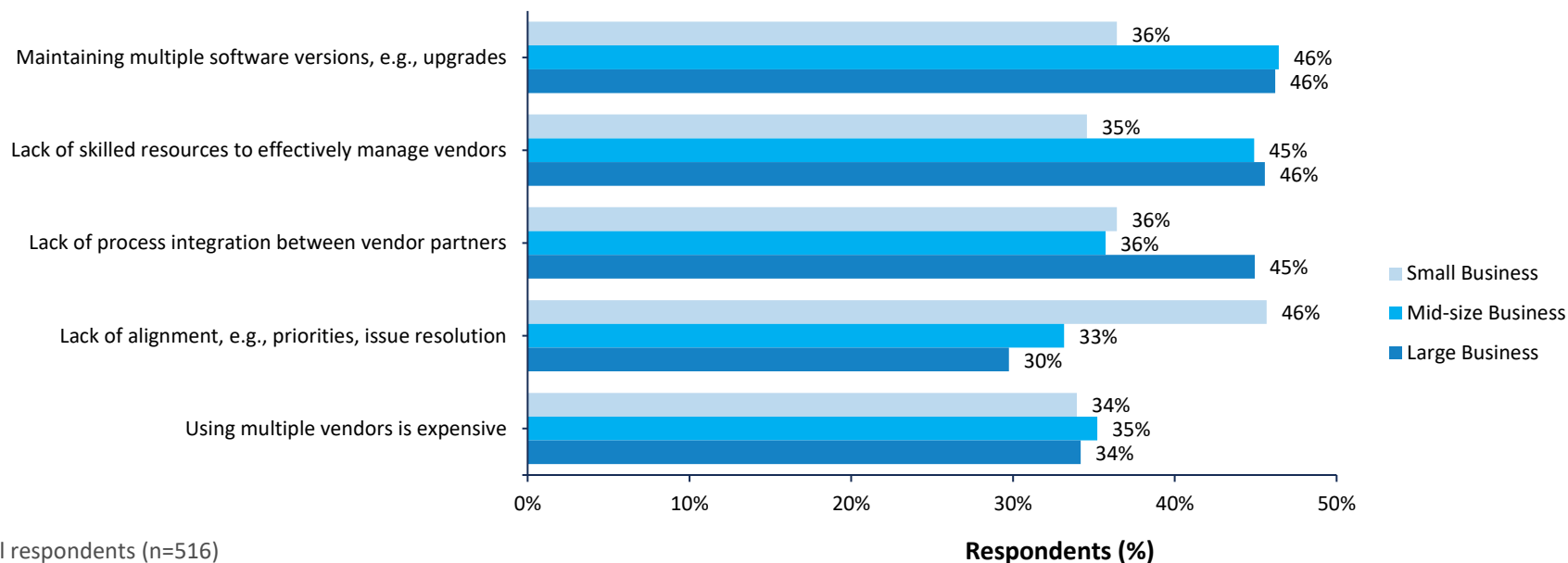


Preferred Network Services Partner

Top Challenges in Managing Multiple Technology or Network Vendors to Deliver IT Solutions

- Partnering with multiple technology vendors/network vendors brings complexity to managing the network. For mid-size and large businesses, managing multiple software versions/upgrades is the main challenge because of their sheer size and distributed nature.
- Managing multiple vendors with the existing IT team is the next top challenge for mid-size and large businesses, as they do not have the experience or time to effectively manage vendors while performing their routine tasks.
- For 46% of small businesses, lack of alignment in priorities and issue resolution is the main challenge. Managing multiple technology/network vendors creates hurdles for small businesses because of a lack of cooperation between vendors to determine priority. For instance, security vendors prioritize resolving security issues first, and software/hardware vendors prioritize their products, which could increase downtime in the event of a technical fault.

Top Challenges in Managing Multiple Technology or Network Vendors by Business Size, US, 2023



Base: All respondents (n=516)

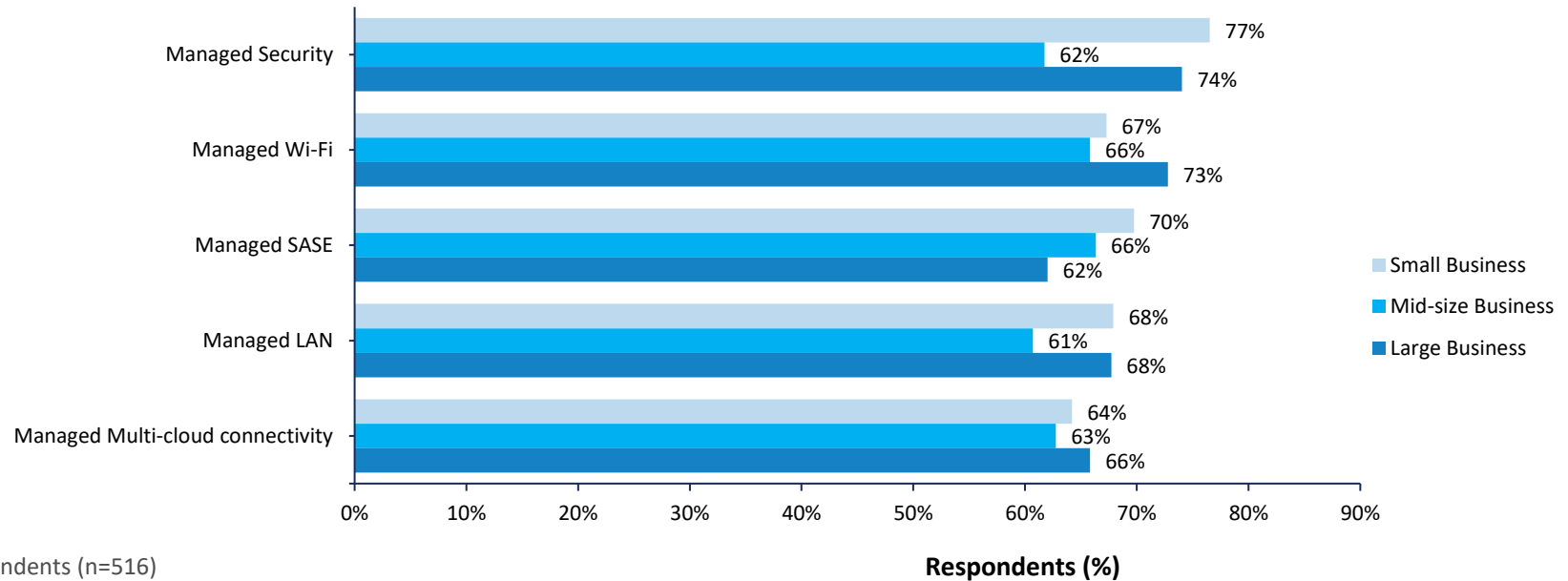
Q47. What are the key challenges in managing multiple technology or network vendors to deliver IT solutions for your organization?

Source: Frost & Sullivan

Businesses Engage with Third-party Providers for Managed Network Services

- Businesses engage with third-party providers for their specific business needs to improve operational performance. Businesses find it easier to outsource a particular service to a service provider than to manage it in-house without the necessary skill and expertise.
- With growing security threats, small (77%) and large (74%) businesses prefer outsourcing security. Small businesses have limited resources and depend on an expert to manage their network security. In contrast, large businesses prefer managed security because of its distributed branch locations where employees and users access business applications from numerous endpoints, making them vulnerable to security threats.
- Mid-size businesses prefer to engage with third-party providers for managed Wi-Fi and SASE services, probably because of cost benefits and lack of resources. Hiring, training, and retaining a cybersecurity professional is costly, and the high costs of managing Wi-Fi hardware, software, upgrades, and troubleshooting drive mid-size businesses to third-party providers.

Businesses Engage with Third-Party Providers for Managed Network Services by Business Size, US, 2023



Base: All respondents (n=516)

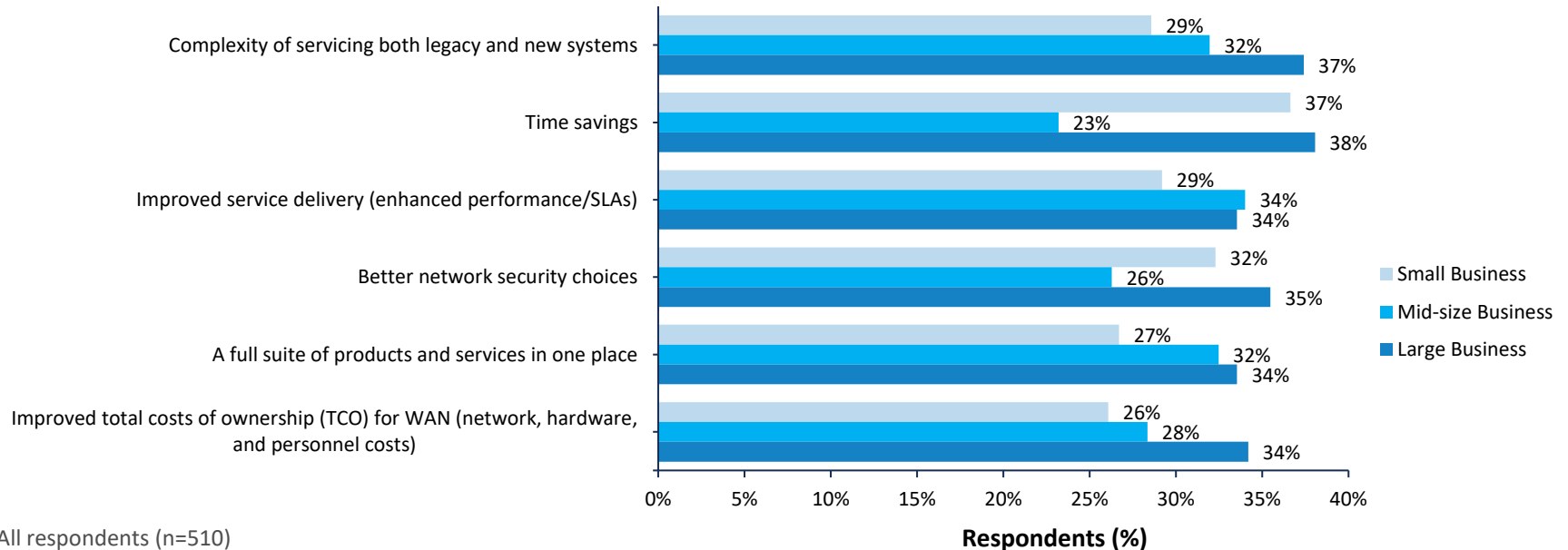
Q48. Does your organization engage with a third-party provider for any of these managed network services?

Source: Frost & Sullivan

Choosing the Right MSP by Business Size

- Businesses are adopting advanced technologies to enhance their business performance as part of digital transformation. While adopting these technologies, businesses engage with different vendors for different services, which increases the complexity of managing them. Several businesses use legacy network systems and prioritize transitioning to a cloud-based platform that allows flexibility, scalability, and enhanced network service performance.
- All sizes of businesses prefer to engage with an MSP that has the expertise to manage both legacy and advanced network systems, help them manage their network services, and assist them in transitioning to advanced network platforms such as SD-WAN and SASE.
- The right MSP has an experienced and dedicated IT team, a global presence, and the expertise to deliver complex network projects. The MSP typically partners with all the major hardware, software, and security vendors to offer a full suite of products and services and various choices that fit individual client requirements. The benefits of engaging with an MSP include time savings, improved total cost of ownership for WAN, better network security choices, improved service delivery, and managing regulatory compliance.

Choosing the Right MSP by Business Size, US, 2023



Base: All respondents (n=510)

Q49. What are the main factors that influence the choice of a managed network services provider by your organization?

Source: Frost & Sullivan

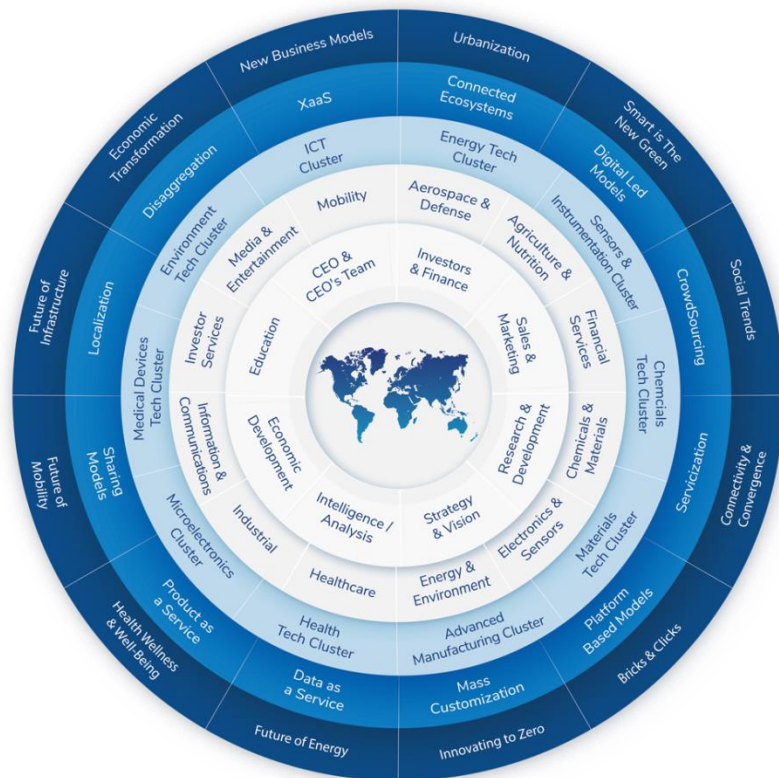


Appendix

Growth Opportunities Fuel the Growth Pipeline Engine™



The Innovation Generator™



Analytical Perspectives



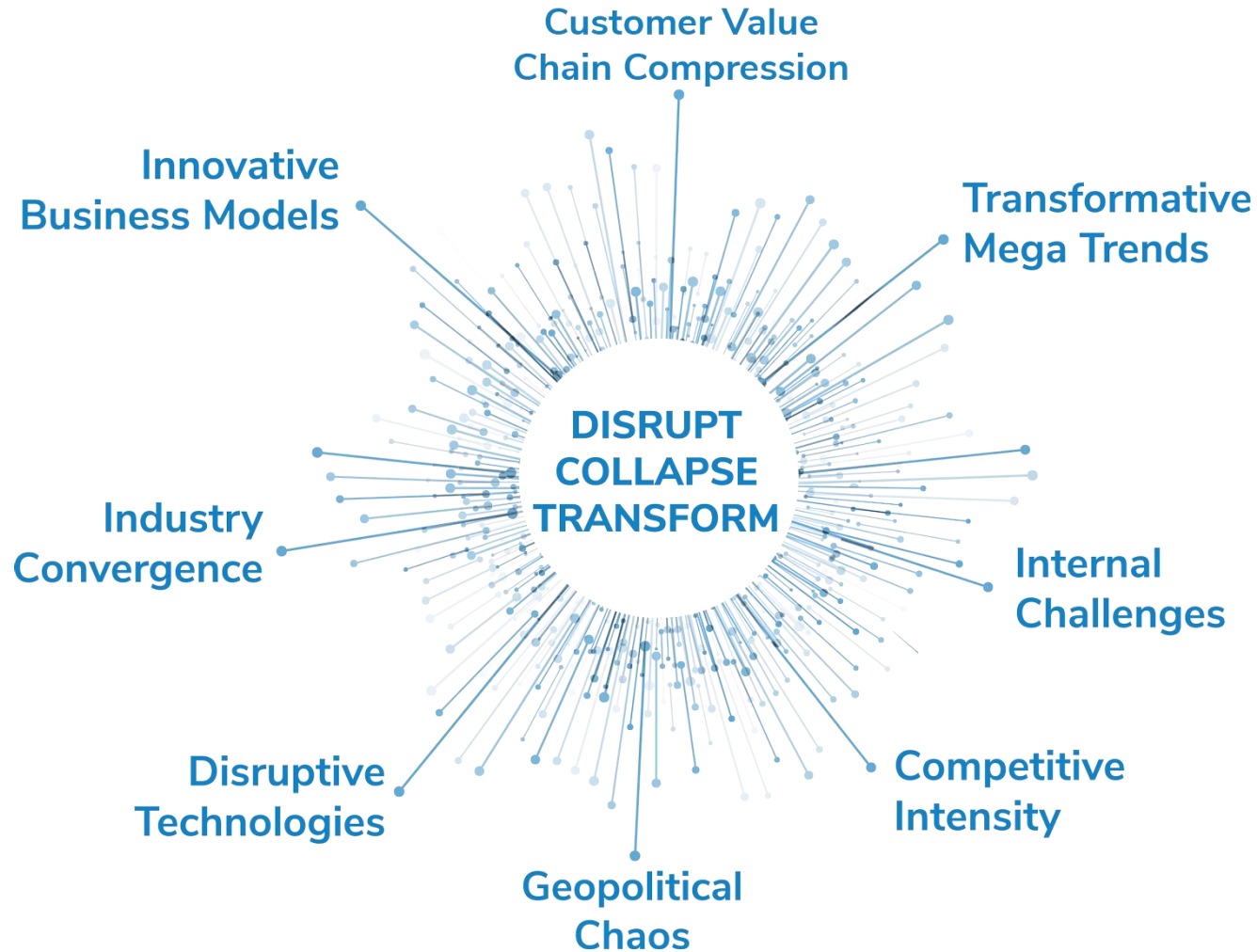
The Growth Pipeline Engine™



Source: Frost & Sullivan

Why Is It Increasingly Difficult to Grow?

The Strategic Imperative 8™: Factors Creating Pressure on Growth



Source: Frost & Sullivan

The Strategic Imperative 8™

Innovative Business Models

A new revenue model that defines how a company creates and capitalizes economic value, typically impacting its value proposition, product offering, operational strategies, and brand positioning

Customer Value Chain Compression

Customer value chain compression as a result of advanced technologies, internet platforms, and other direct-to-consumer models that enables reduction in friction and the number of steps in customer journeys

Transformative Mega Trends

Global forces that define the future world with their far-reaching impact on business, societies, economies, cultures, and personal lives

Internal Challenges

The internal organizational behaviors that prevent a company from making required changes

Competitive Intensity

A new wave of competition from start-ups and digital business models that challenge the standing conventions of the past, compelling established industries to re-think their competitive stance

Geopolitical Chaos

Chaos and disorder arising from political discord, natural calamities, pandemics, and social unrest that impact global trade, collaboration, and business security

Disruptive Technologies

New, disruptive technologies that are displacing the old, and significantly altering the way consumers, industries, or businesses operate

Industry Convergence

Collaboration between previously disparate industries to deliver on whitespace cross-industry growth opportunities

Source: Frost & Sullivan

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