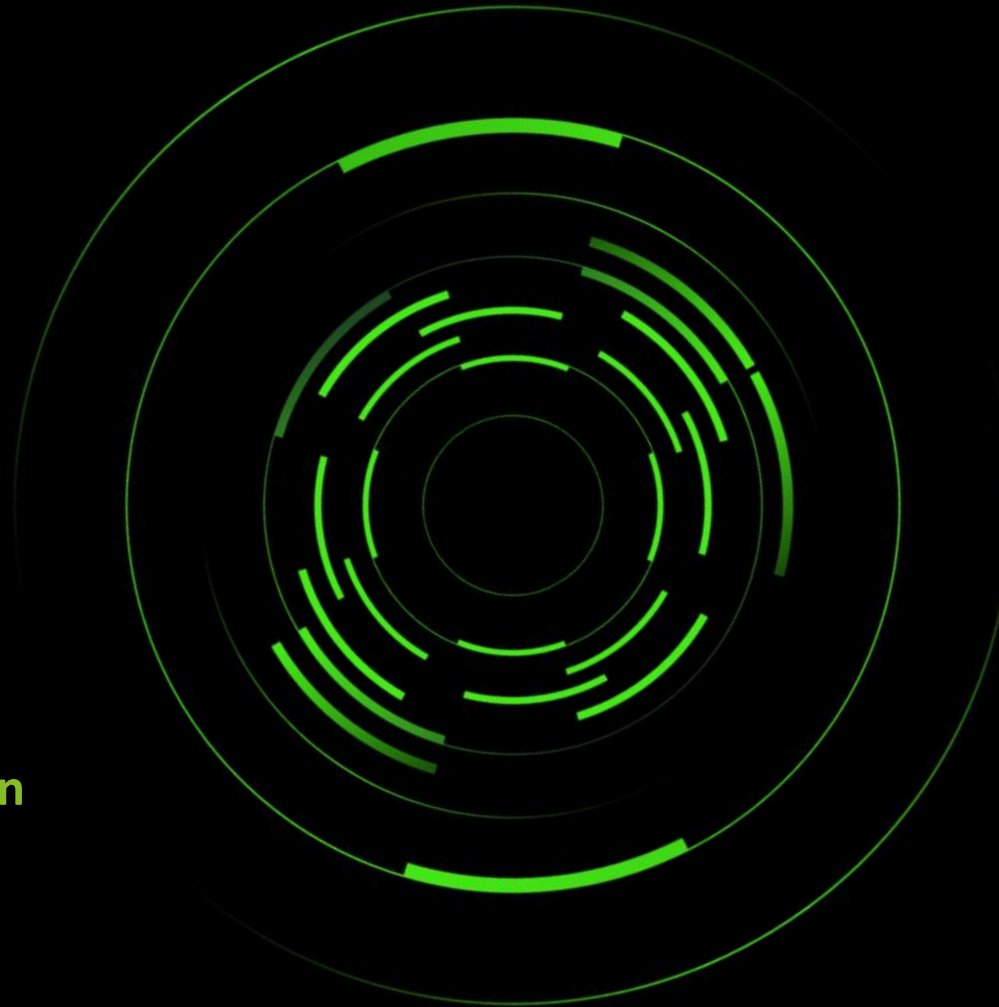


Accelerating enterprise innovation and transformation with 5G and Wi-Fi 6

Deloitte's Study of Advanced
Wireless Adoption Brazil Cut

August, 2021



About the study

Purpose

To understand how and why enterprises are adopting advanced wireless technologies, including motivations, challenges and preferences

Methodology

Surveyed 51 Brazilian IT and LOB executives responsible for networking at their company in October 2020. Other countries surveyed: Australia (N=51), China (N=50), Germany (N=50), India (N=51), Japan (N=51), Netherlands (N=50), Portugal (N=29), UK (N=54), US (N=415, surveyed Jan. 2020, pre-pandemic).

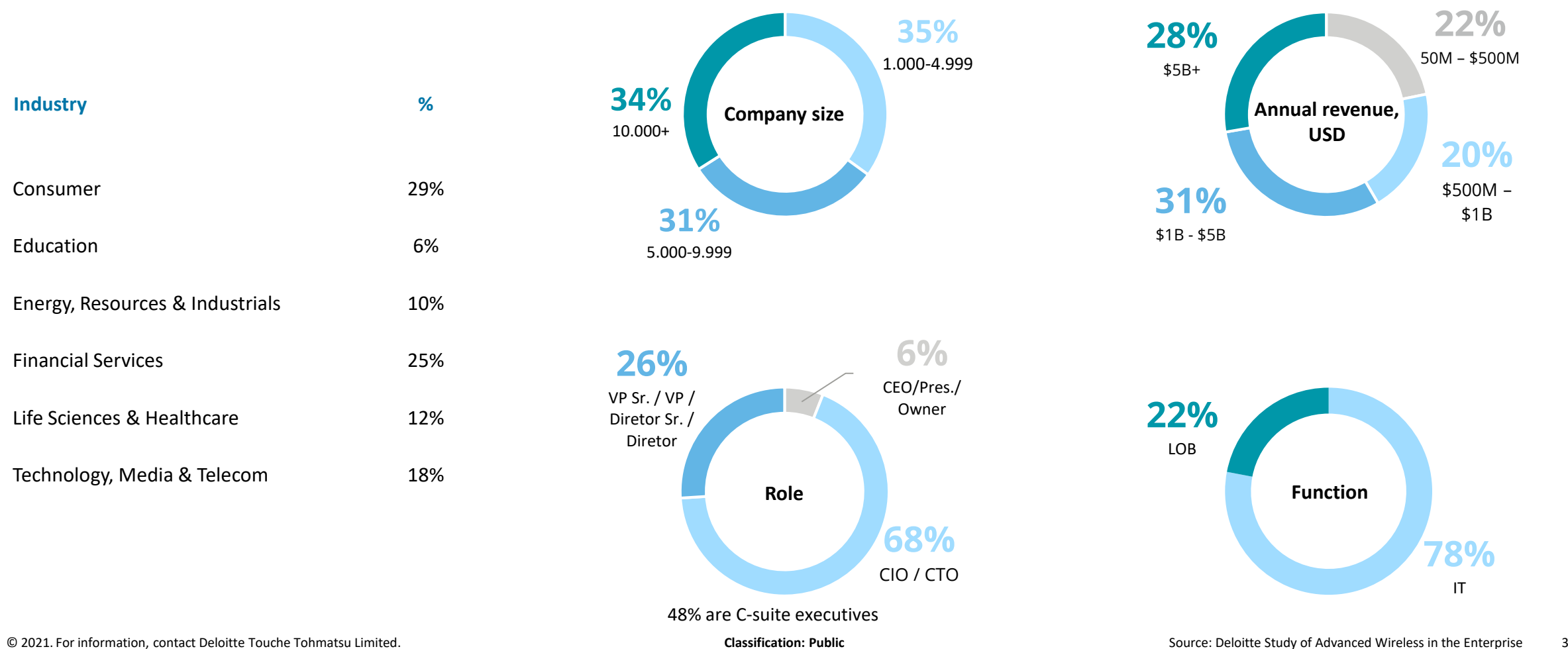
Requirements

- Solid understanding of 5G and Wi-Fi 6
- Responsibility for employee, machine, and/or customer connectivity
- Organizations were **required to be adopting 5G and/or Wi-Fi 6 now or within 3 years**

About the study

Respondent profile (Brazil) – 51 executives responsible for networking

To understand how enterprises are adopting advanced wireless technologies, Deloitte surveyed **51 business and IT executives in Brazil responsible for networking** at their organizations.



Executive summary

Brazilian networking executives' perspective on advanced wireless technology adoption in the enterprise (e.g., 5G and Wi-Fi 6)



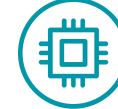
Focus has rapidly shifted to advanced wireless

- **Advanced wireless technologies are quickly gaining ground in strategic importance**
- 5G and Wi-Fi 6 are viewed as the **most critical wireless networking technologies** for businesses today
- Brazilian executives are particularly well informed on advanced technologies and preparing for the change – **high level of understanding ranging from 75% in LPWA to 92% in 5G**
- **9 in 10** believe advanced wireless technologies are **very/critically important** to their business success



Advanced wireless is foundational to innovation and transformation

- **Advanced wireless technologies allow organizations to take advantage of other emerging technologies**
- **More than 8 in 10** believe **advanced wireless connectivity is “very” or “extremely important”** to their organization’s ability to take full advantage of AI, edge computing, IoT, cloud, and big data analytics
- Reducing costs, Improving efficiency and **taking advantage of new technologies** are the main adoption goals
- **86% believe** their company can **create a significant competitive advantage** by leveraging advanced wireless



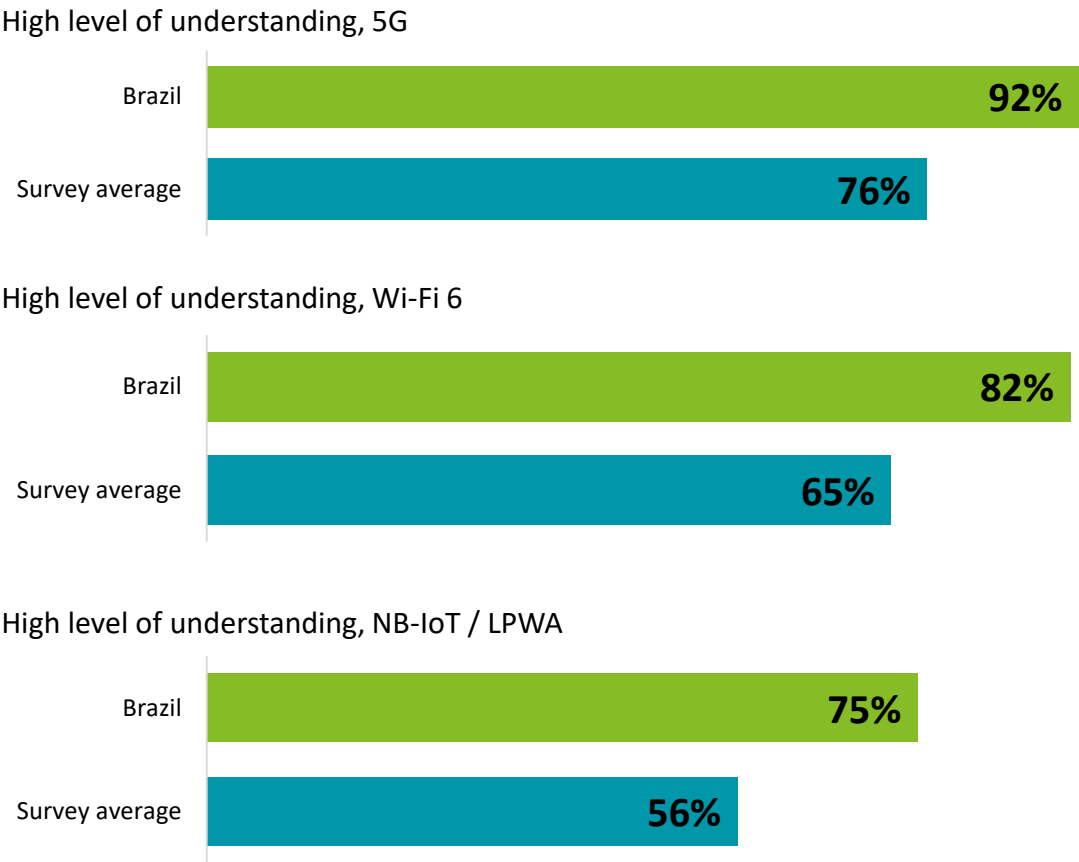
Ecosystem is complex and evolving

- **Organizations are approaching advanced wireless adoption as a strategic technology initiative**
- On average, advanced wireless adopters engage with **~8 types of vendors**—and often with multiple vendors of each type
- **At least 6 in 10** advanced wireless adopters say they’re willing to reconsider the providers they use
- **Three quarters** expect to **primarily deploy** wireless applications/services **on cloud** in 2-3 years

The shifting networking landscape

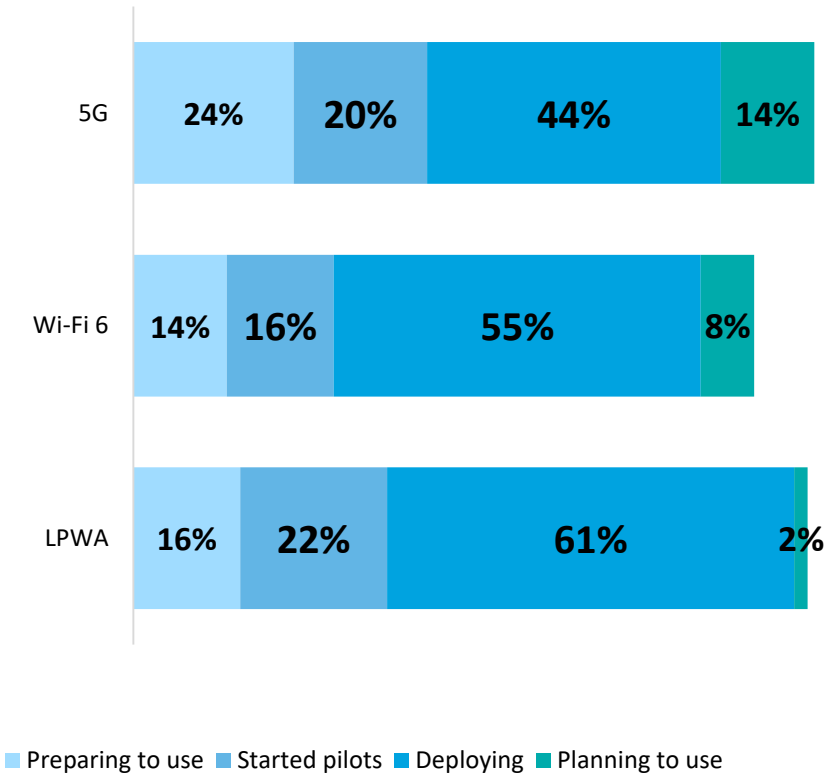
Brazil ranks above average in terms of understanding of technologies and adoption of Low Power wireless communication

Level of understanding of next generation technologies



N: ALL (51)

Level of adoption or consideration of technologies

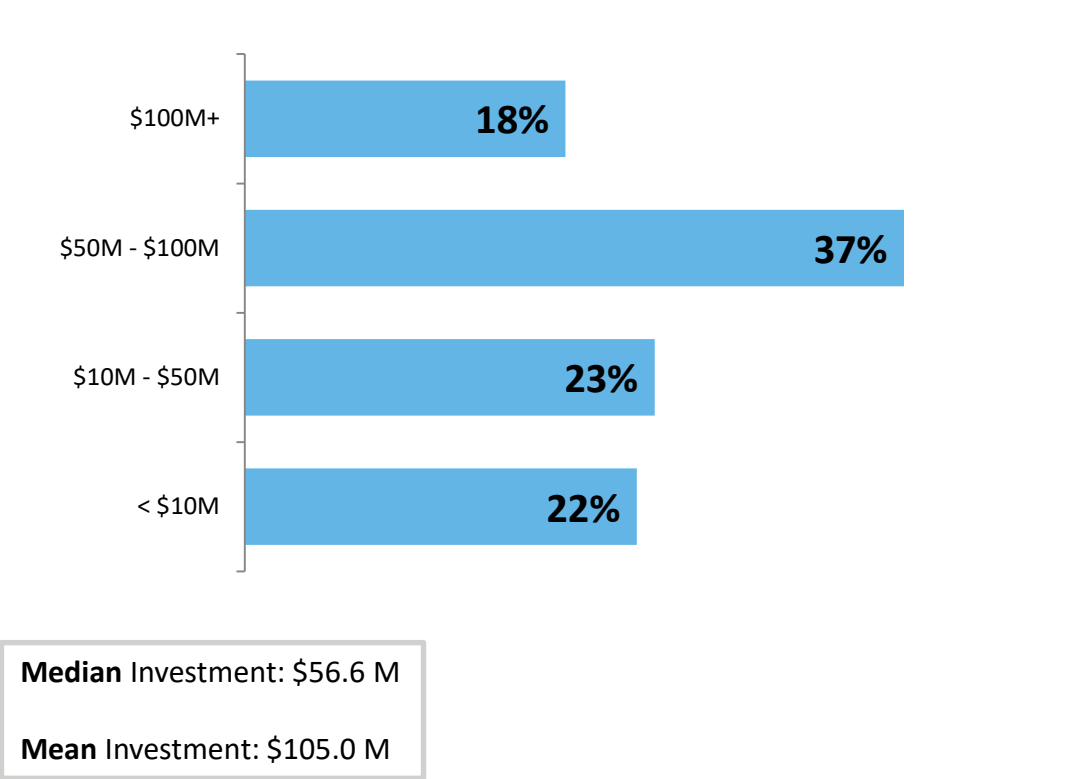


Note: Numbers may not add to 100%, due to a small number who said they have “no plans to use”

These organizations are planning significant investments in wireless technologies over the next three years

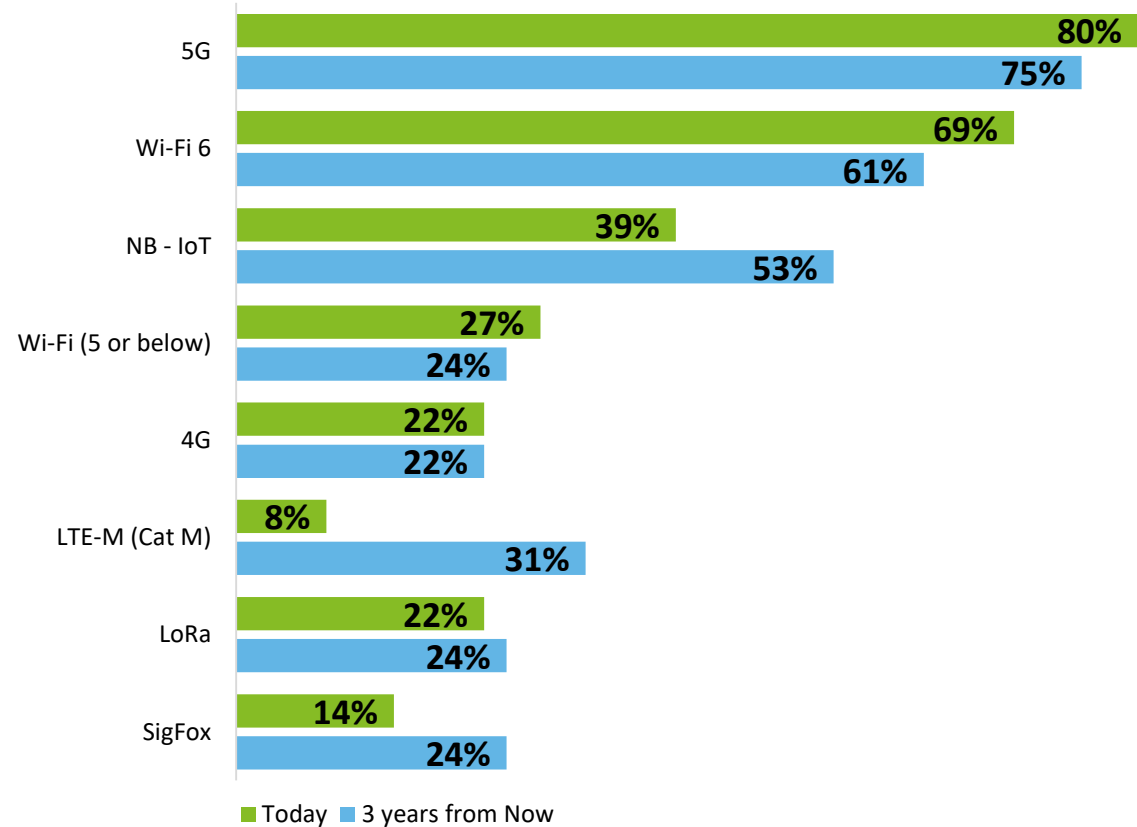
Investimento em redes sem fio ao longo dos próximos 3 anos

For current and advanced wireless, including spend for people, hardware, software, personnel, consulting



N: ALL (51)

Nível de adoção ou consideração de tecnologias

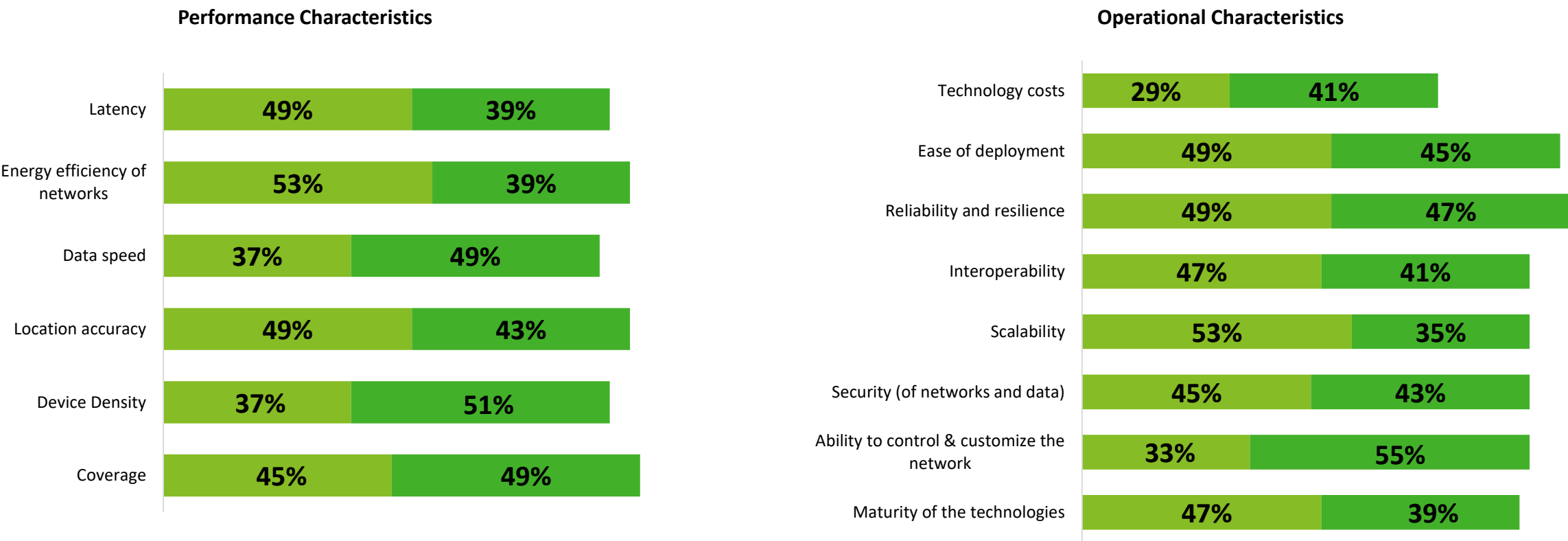


Transforming through advanced wireless connectivity

Dissatisfaction isn't driving adoption

Leaders are satisfied/extremely satisfied with a range of characteristics of their current wireless networks

Satisfaction with organization's current wireless networking landscape



N: ALL (51)
Note: Excluding public carrier networks
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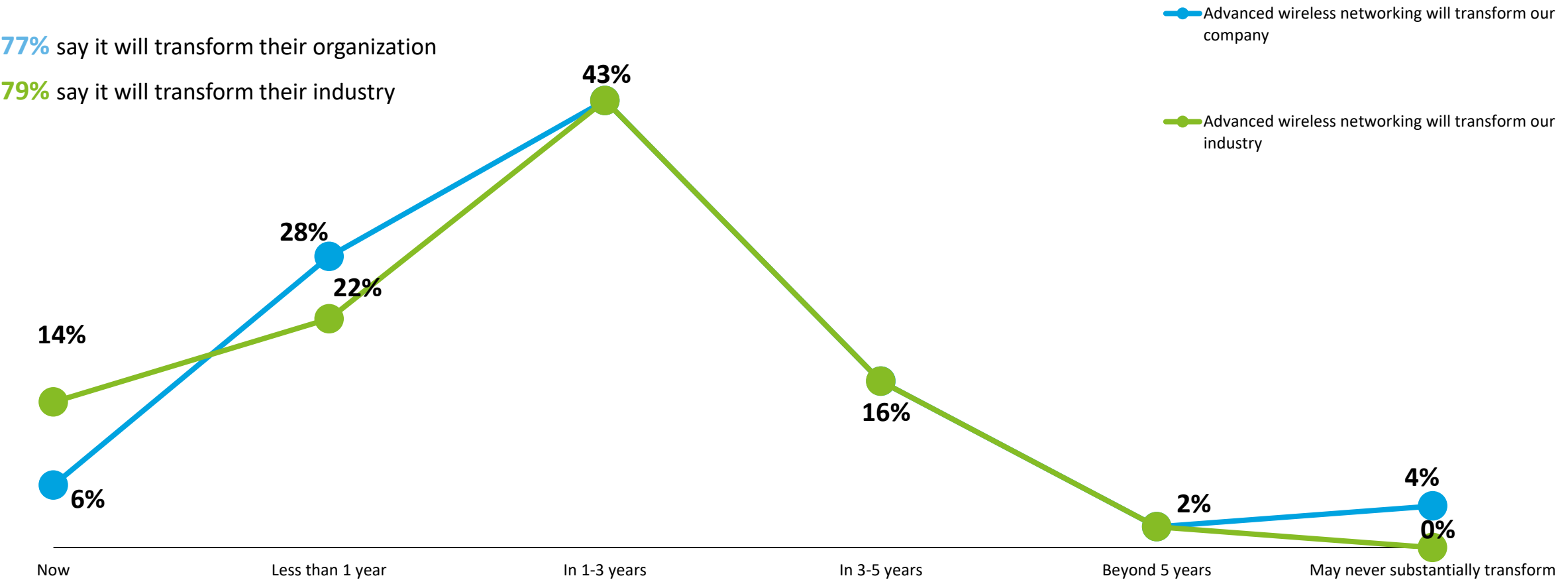
Satisfied Extremely Satisfied

Networking executives overwhelmingly believe advanced wireless will transform their organizations and industries within three years

Effect of advanced wireless within 3 years:

77% say it will transform their organization

79% say it will transform their industry

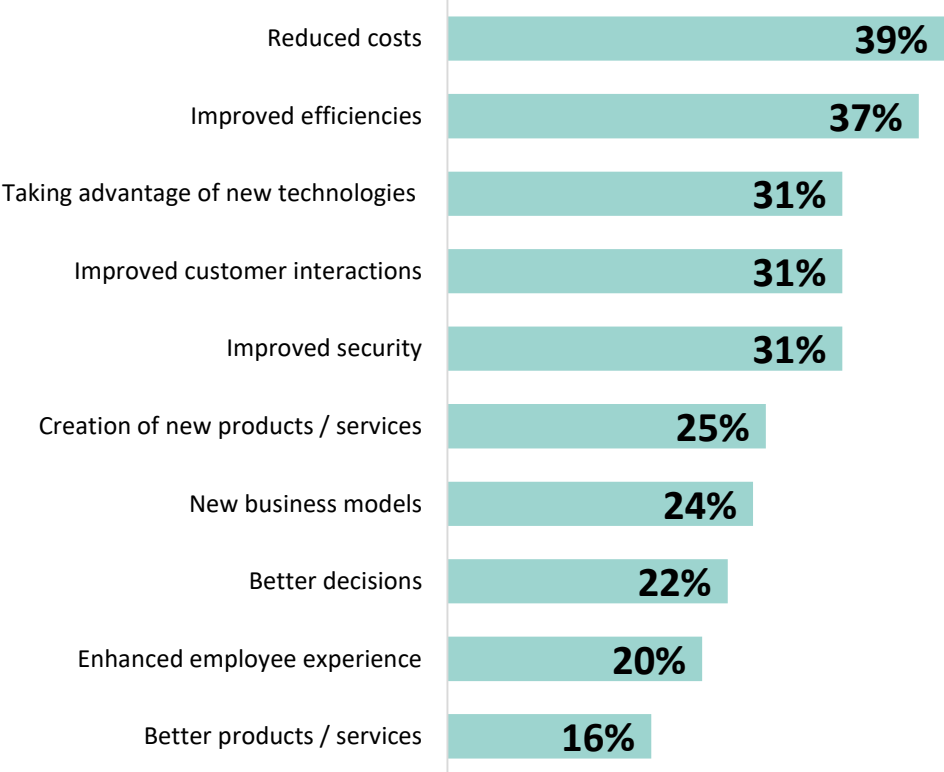


N=51

Note: Percentages may not add up to 100%, due to a small number who reported 'Don't know'

Objectives for adopting advanced wireless include reducing costs and improving efficiencies. It is also a main enabler for new technologies

Percent rating each a top benefits their organization is aiming to achieve with advanced wireless technologies



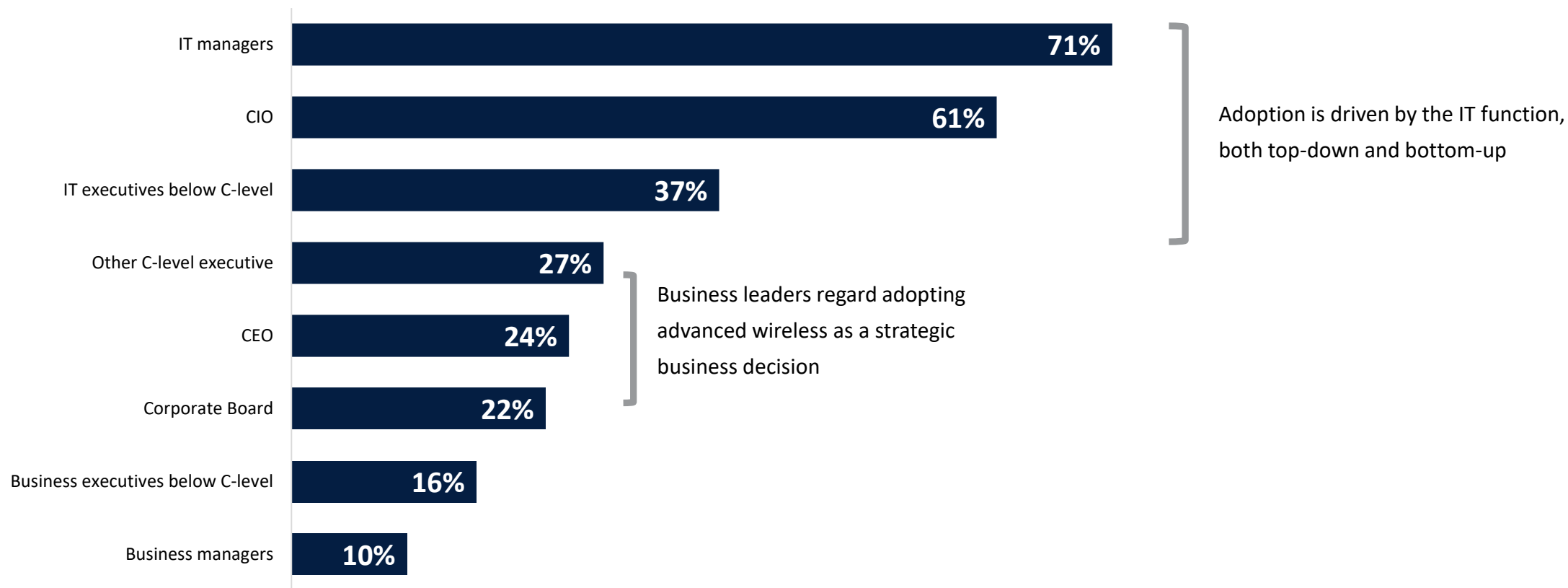
Importance of advanced wireless to company’s ability to implement each technology (percent reporting very/extremely important)



How adoption of advanced connectivity is unfolding

Advanced wireless is very tech-driven: Within the organization, IT executives and IT practitioners lead the charge to adopt

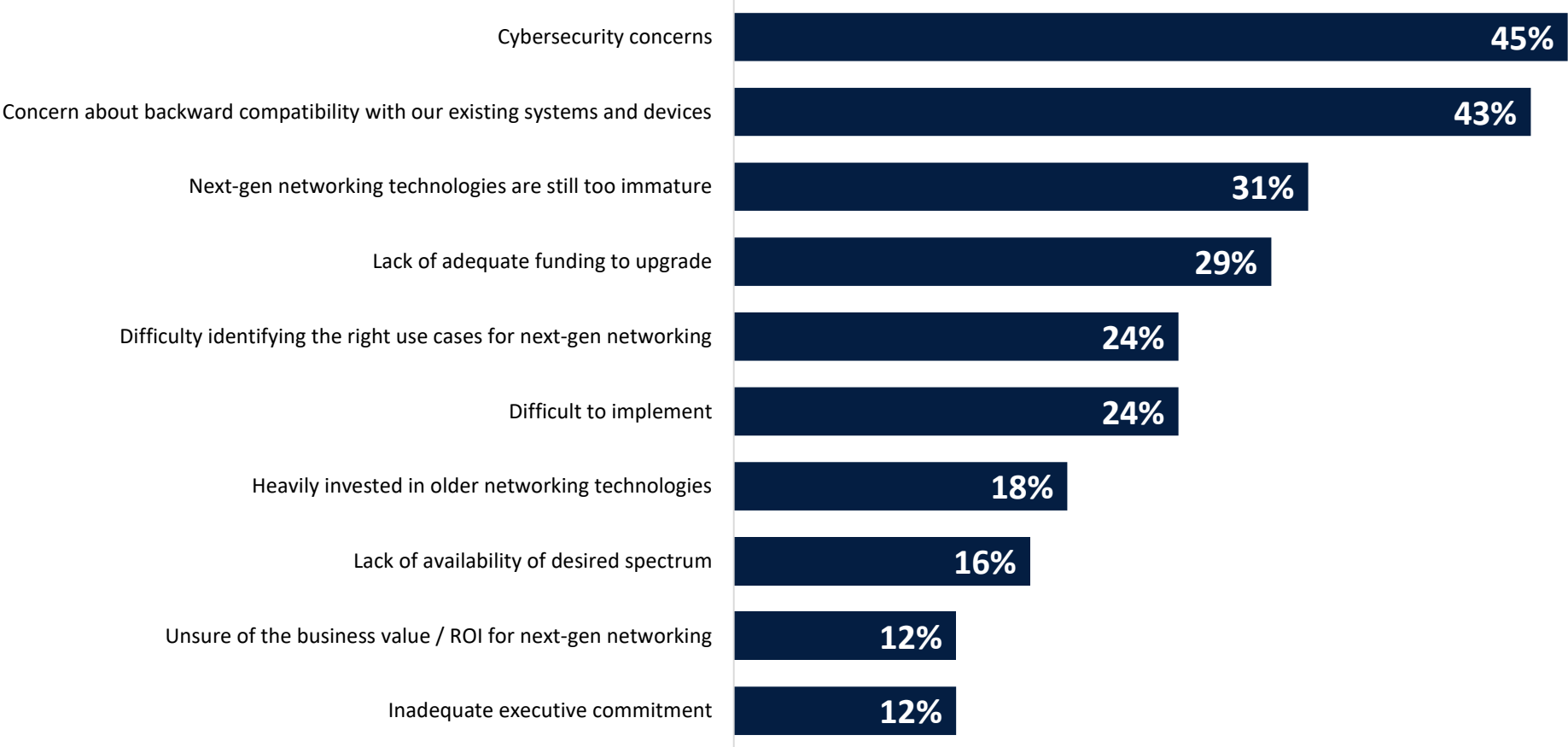
Percent rating the role leading the charge for adopting advanced wireless at their organization



N: ALL (51)

Concerns about security and backward compatibility with existing systems are the biggest challenges in adopting advanced wireless

Percent rating each a top-three challenge for organization’s adoption of advanced wireless

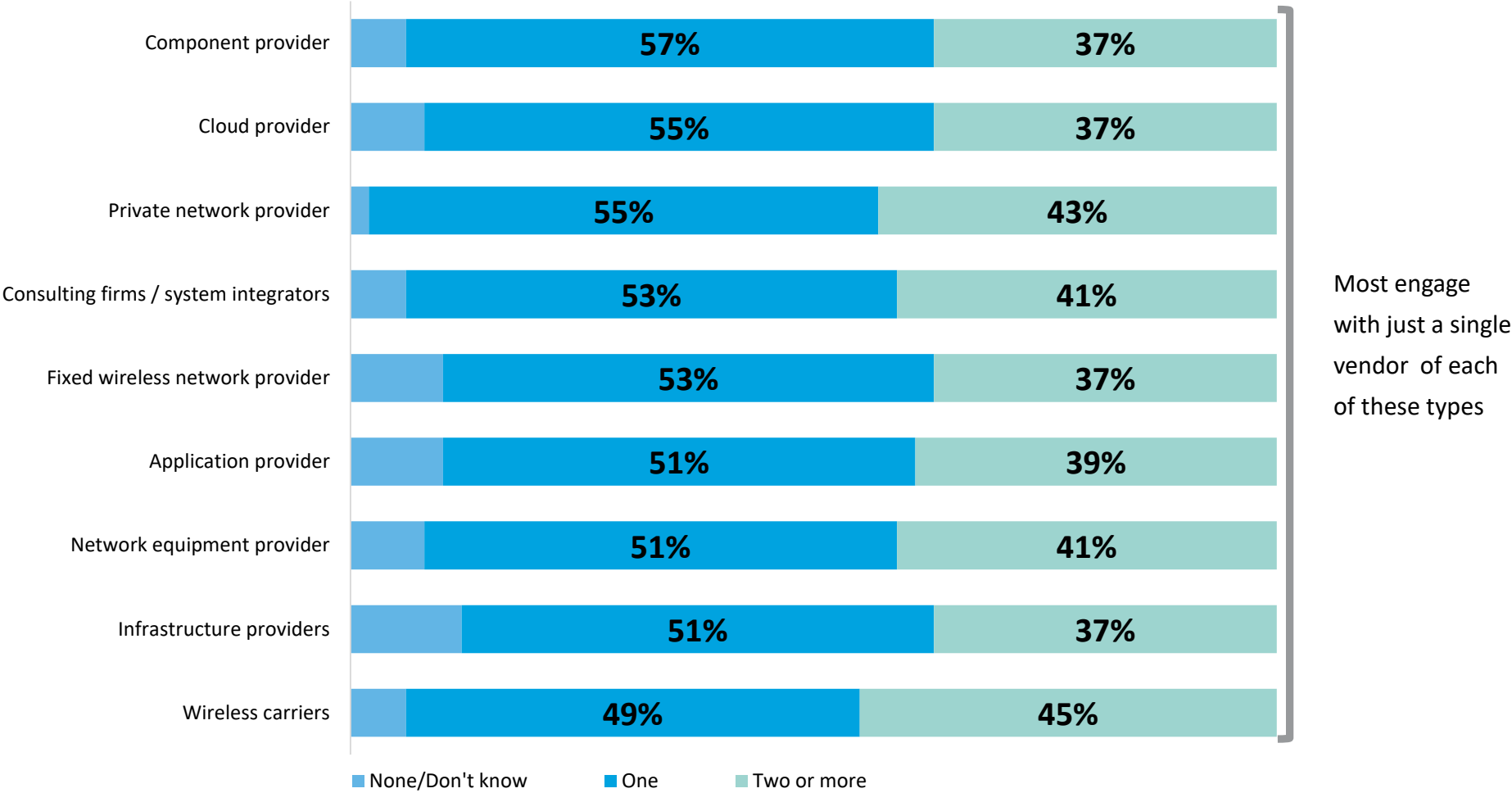


N: ALL (51)

Dynamics of the emerging wireless ecosystem

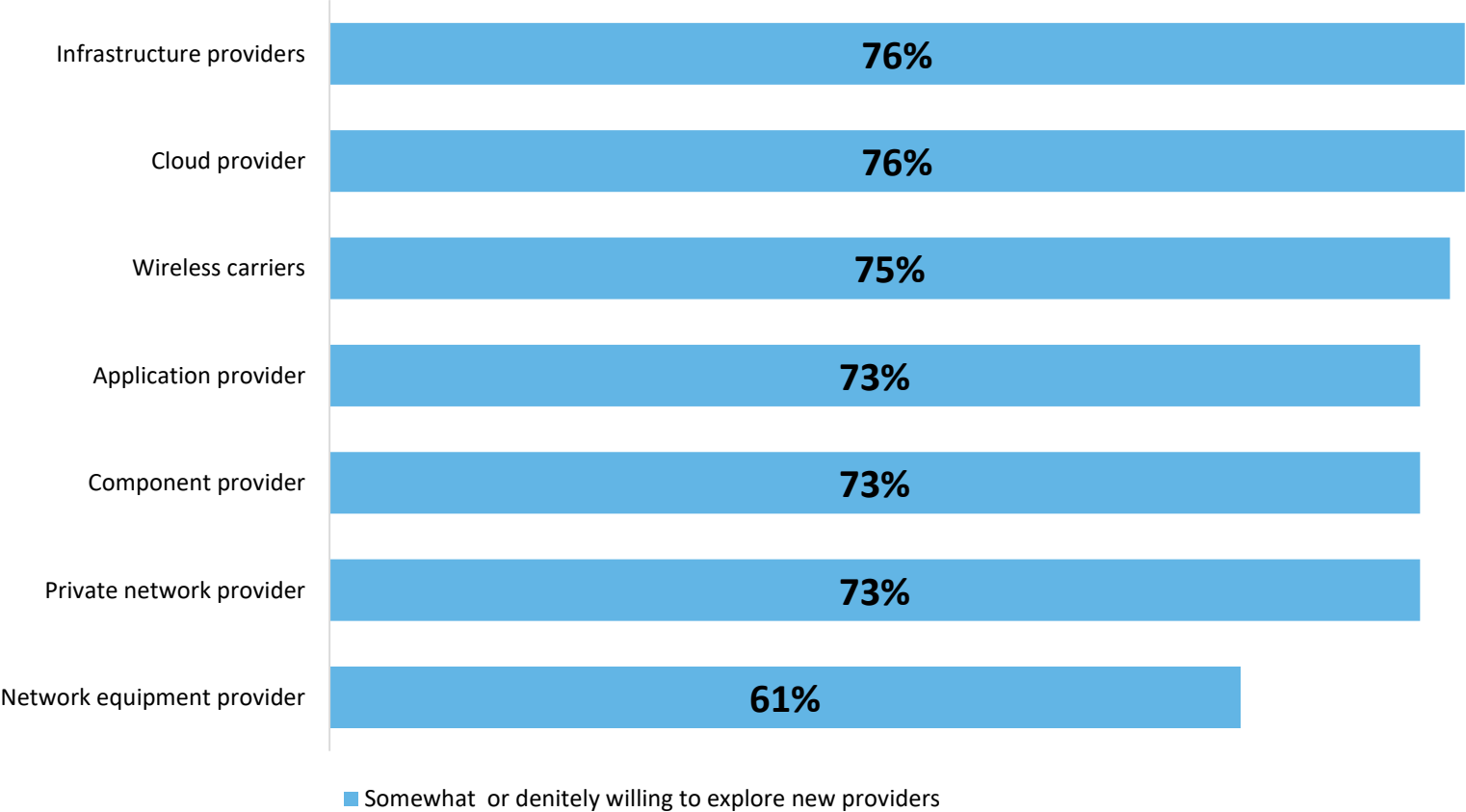
Diverse partnerships: Most organizations engage with a variety of providers to implement and manage wireless initiatives

Providers organization engages with for wireless implementation/management



Fluid competitive landscape: Advanced wireless adopters say they're willing to reconsider the providers they use

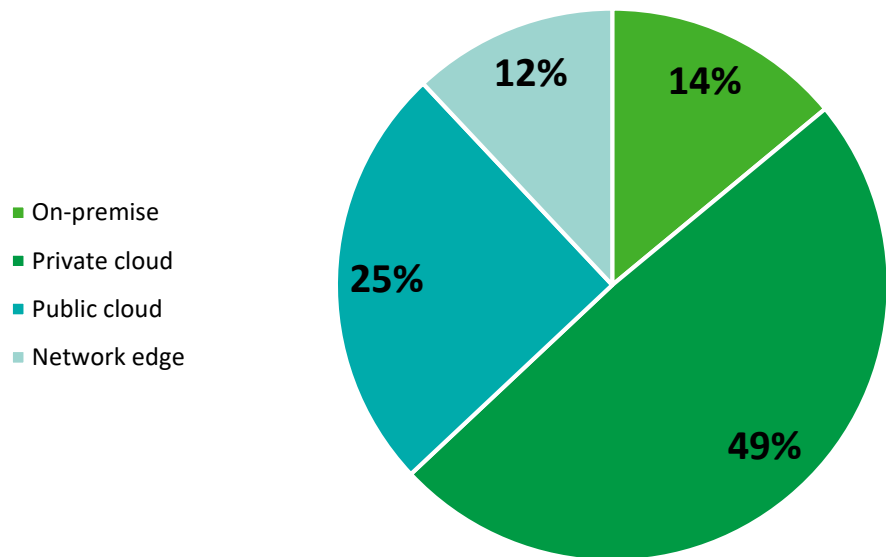
Willingness to explore new providers for wireless implementation/management



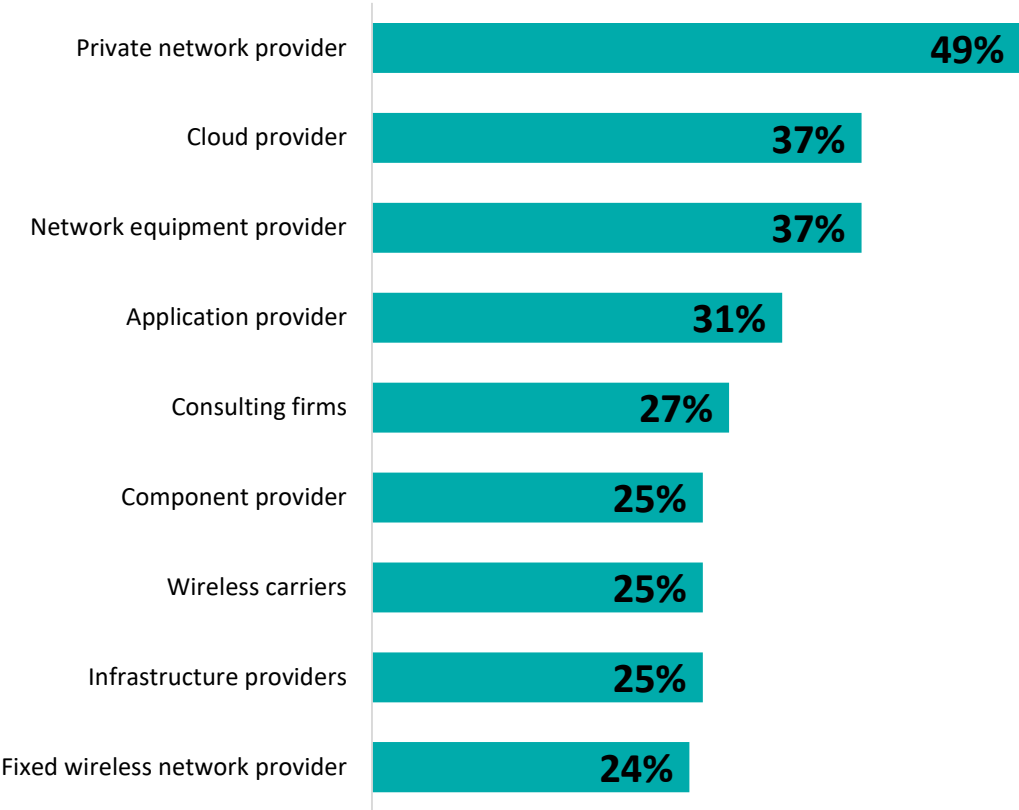
N: ALL (51)

Enterprises have very high levels of interest in using cloud services to deploy their wireless networking applications, but designing the solution with external support is not a common practice

Where organizations expect to primarily deploy and manage their wireless networking applications and services in 2-3 years



Which of the following entities are you likely to rely on the most to help design your network architecture?



Two-thirds of Brazilian enterprises prefer to make use of **end-to-end** solutions

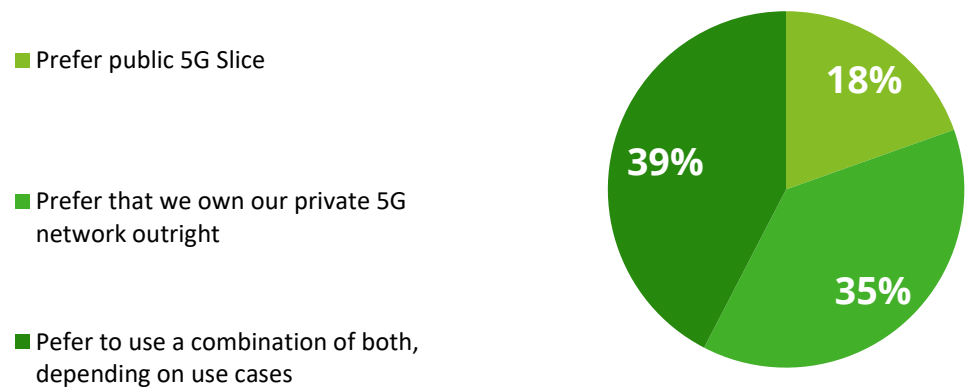
For your next-generation wireless initiatives, does your organization prefer to acquire & integrate best-of-breed components from various providers, or does it prefer to buy a full end-to-end next-generation wireless solution?



- Strongly / somewhat prefer to acquire best-of-breed components and integrate them
- Even blend of individual components and end-to-end solutions
- Strongly / somewhat prefer to buy end-to-end solution(s) with all functionality we need

Adopters do not have high confidence in public 5G slices—security concerns are the top reported obstacle for using 5G slices

What is your company’s preference for using a public 5G “slice” versus a private 5G network?

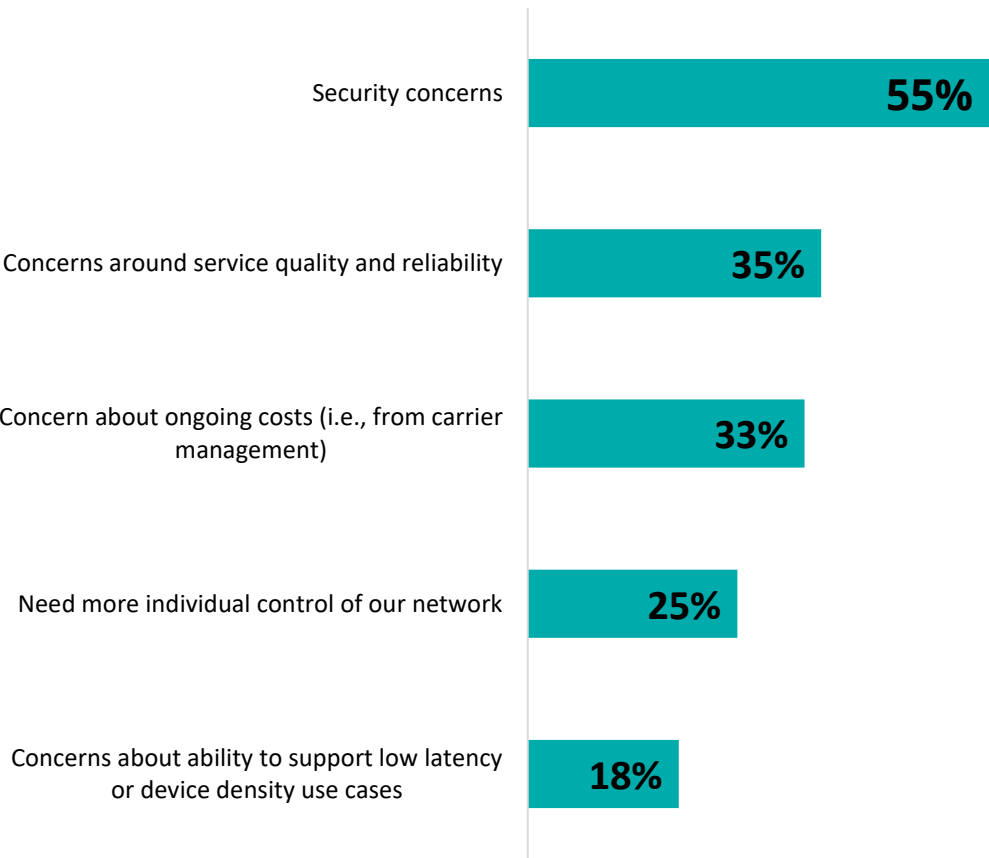


Our company can manage our own private 5G network as effectively as a wireless carrier



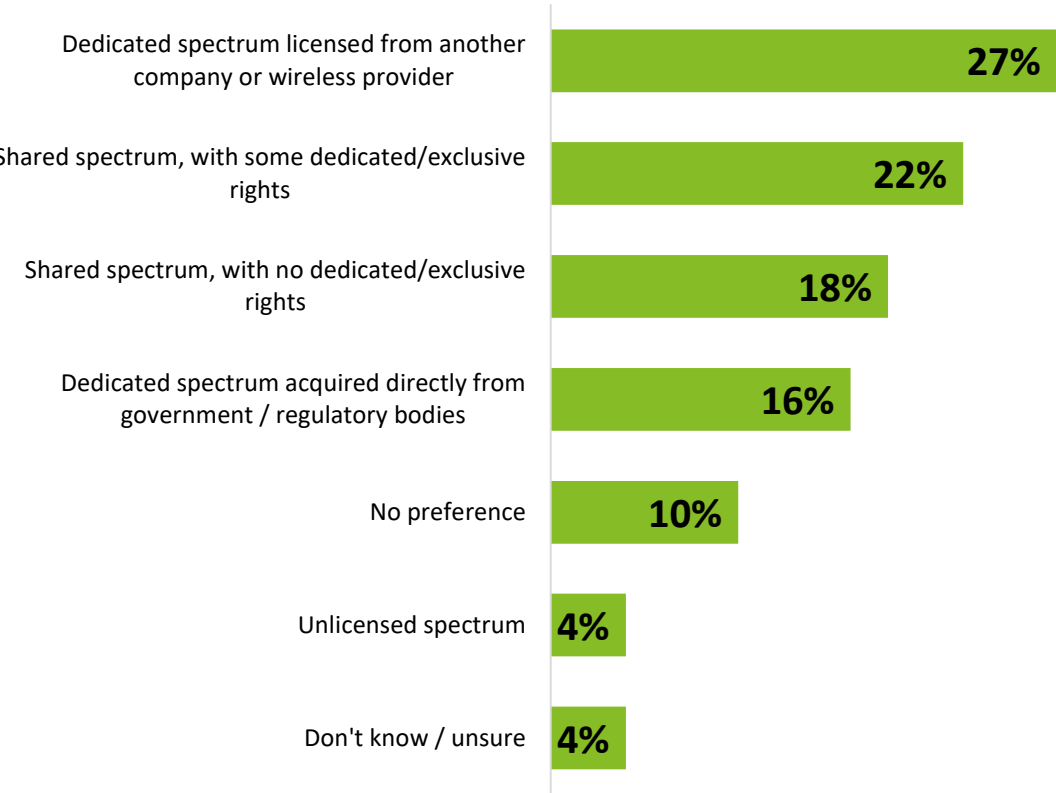
N: ALL (51)

What are the TOP obstacles that would keep your company from adopting a public 5G “slice”?

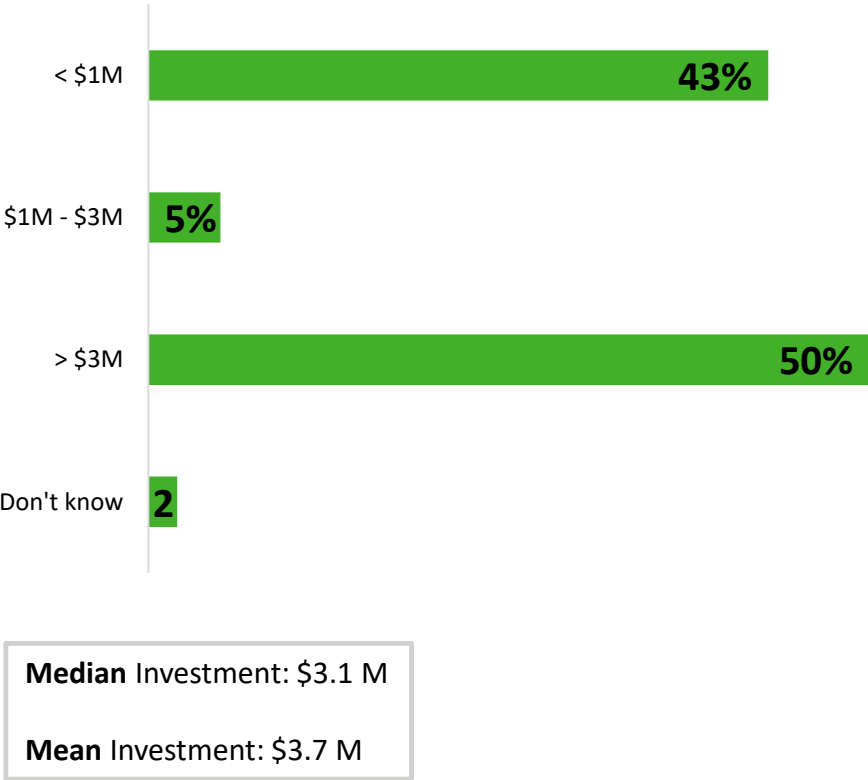


Organizations prefer mainly to use dedicated spectrum licensed from another provider or shared spectrum. Spectrum demand prices are within the average of other surveyed countries.

What is your company’s preference for using spectrum?



How much would your organization be willing to pay for acquiring dedicated spectrum annually (USD)?



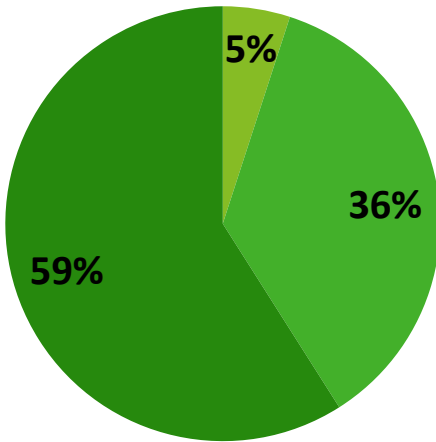
Organizations feel they will be able to obtain their spectrum, but they feel it may take them time

How well is your company currently able to obtain spectrum in this way?

■ Not at all

■ Limited- not yet sufficient to meet our needs

■ Sufficient - we are able to obtain the spectrum we need this manner



Slow regulatory progress in our country (e.g. delayed spectrum auctions) is impeding our company’s next-generation wireless efforts and affecting our global competitiveness

Strongly agree / Agree

75%

Regulatory concern in Brazil is the highest among the surveyed countries

N: 44

N: ALL (51)

Recommendations

Considerations for networking decision-makers

01 End goal in mind

Adopters should consider the usage scenarios they want to achieve and determine which wireless technology (or technologies) would be the best choice in different situations. The most successful adopters are likely to be those with the skills to deploy multiple technologies and make diverse networks interoperate as needed.

02 Data strategies

When massive volumes of data flow from connected machines and sensors, organizations need thoughtful strategies and policies on how to store, secure, and analyze it. Depending on the requirements of various usage scenarios, some data may need to be stored and analyzed in clouds, with other data processed at the intelligent edge.

03 Innovation infrastructure

Given that leaders see next-gen wireless technologies as a significant enabler of other pivotal technologies such as AI, IoT, and edge, wireless will likely become intrinsic to every innovation initiative. Enterprises should regard next-gen wireless as a core part of their innovation infrastructure and strategy, not as a discrete consideration or afterthought. Imagine how advanced wireless may enable new products, services, and business models—and enhanced interaction with customers and employees.

04 Integration and network management

Adopters are interacting with a complex ecosystem and a multitude of vendors. With propensity to in-house integration of components, Brazilian organizations should decide whether to tackle the complexity of integration themselves or seek out partners. They should assess their organization's ability to manage, authenticate, and secure networks with thousands of devices. Leaders would be wise not to underestimate the level of risk, cost, and effort involved and may want to engage partners.

Considerations for vendors of advanced networking solutions



Challenges as opportunities

Adopters cited security and backward compatibility as top challenges to adoption. There could be difficulties around understanding business value, identifying the right use cases or regulatory hurdles. All of these are areas of opportunity for savvy vendors to demonstrate their expertise and value.



Ecosystem positioning

Evaluate where you can add the most value and carve out your position. Consider whether you can offer expertise in architecting solutions and integrating components—areas where adopters of advanced wireless are likely to seek help. Think about teaming up with other vendors to offer more complete solutions and a more attractive value proposition to adopters.



Innovation partnerships

Vendors that see next-gen connectivity as adding merely incremental value may miss out on opportunities. Savvy vendors should go beyond offering connectivity products and services and seek to become trusted partners for innovation and transformation.



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