

A photograph of three business professionals in a modern office setting. A man with glasses and a beard is gesturing with his hands while speaking. Another man with a beard is leaning in, listening intently. A woman is looking down at a document on the table. The background shows circular ceiling lights.

5G Smart Ecosystems are Transforming the Enterprise

Are You Ready?

A Survey by Oracle
January 2019

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Introduction

As the next generation in wireless technology, 5G promises to transform the services, applications and capabilities available to us. To capitalize, enterprises will have to incorporate 5G network qualities into their products, services and processes. IT and business leaders will need to understand the role that 5G can play in their future business plans and begin planning today.

Some questions they should be asking include:
What benefits will 5G give their business?
What solutions are they planning and how can 5G help enable those solutions? What timeframe are they considering for these solutions? How will enterprises procure and use 5G capabilities as part of their business evolution?

Oracle's report "5G Smart Ecosystems are Transforming the Enterprise – Are You Ready?" provides insight on how enterprises are thinking about 5G today and their awareness of its potential significance to them going forward.

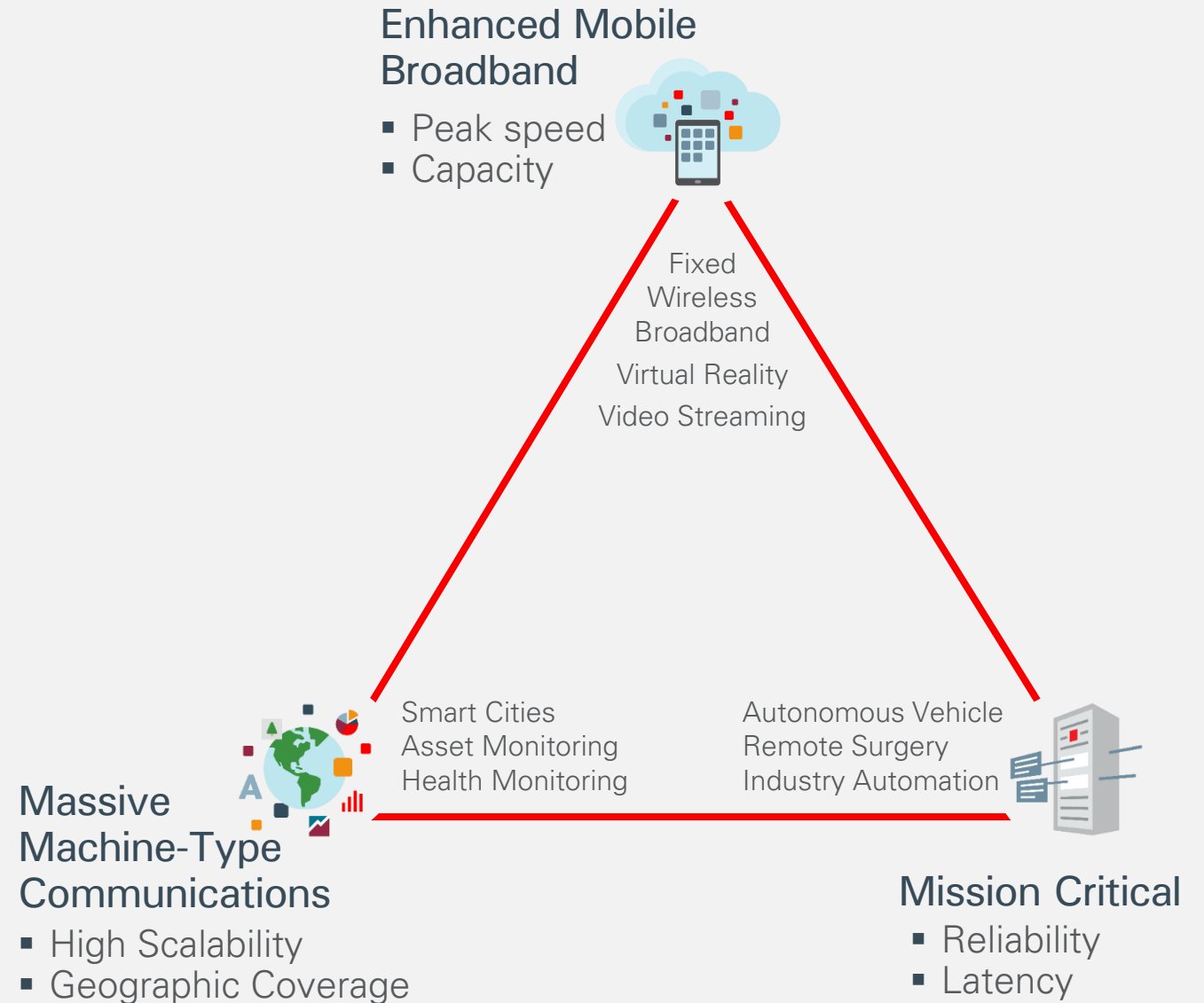


What is 5G?

5G is a wireless networking technology that promises to enable higher bandwidth speeds, negligible latency, and very high endpoint scale.

Specifically, it promises to offer

- Speed: 10-100 times faster than current LTE networks (peak data rates of 20 Gbps or higher)
- Latency: practically imperceptible latency (around 1 millisecond)
- Density: 100 times the number of devices in a given area compared to LTE
- Reliability: 99.999% network availability
- Efficiency: 90% less network energy consumption



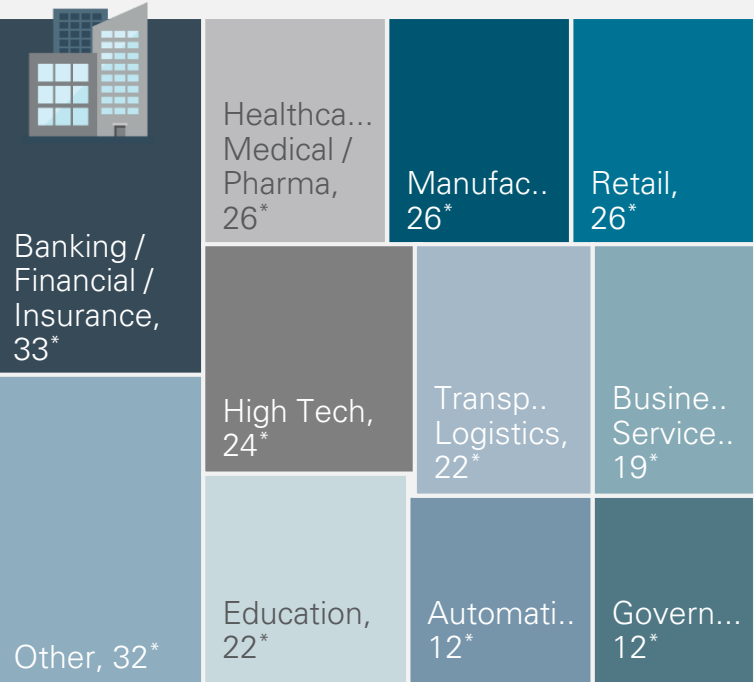
Oracle conducted a global online survey of 265 key decision makers at medium and large enterprises across industries

What is your company's primary industry?

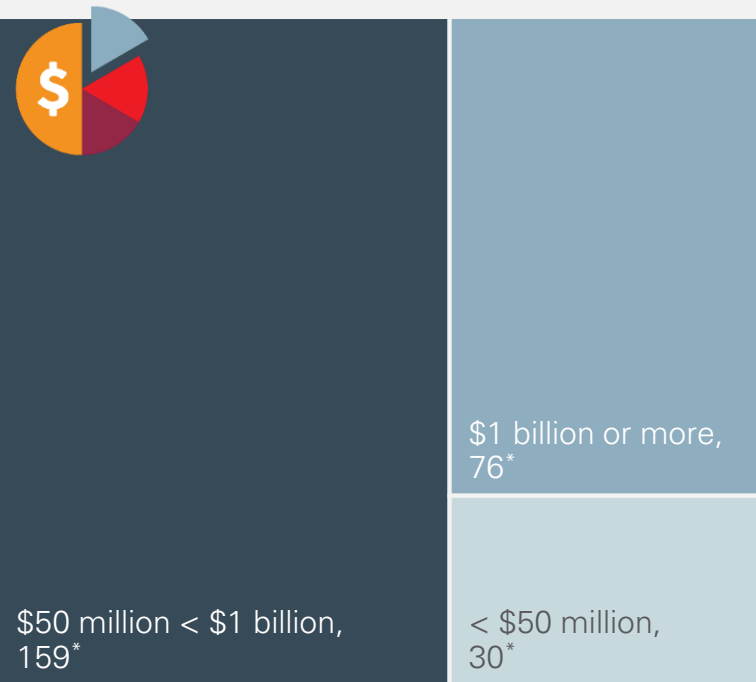
What is your company's annual revenue?

How many people are employed by your company?

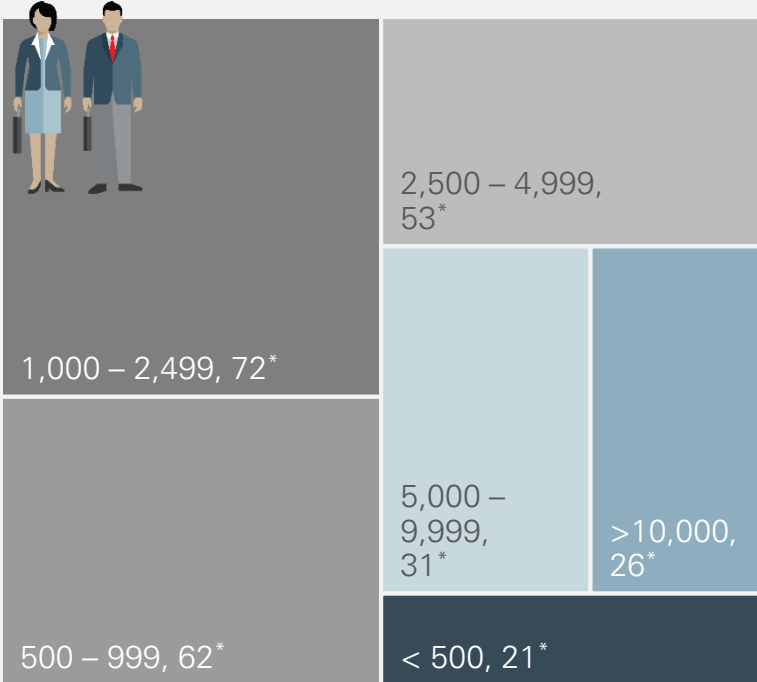
Industry



Company Revenue



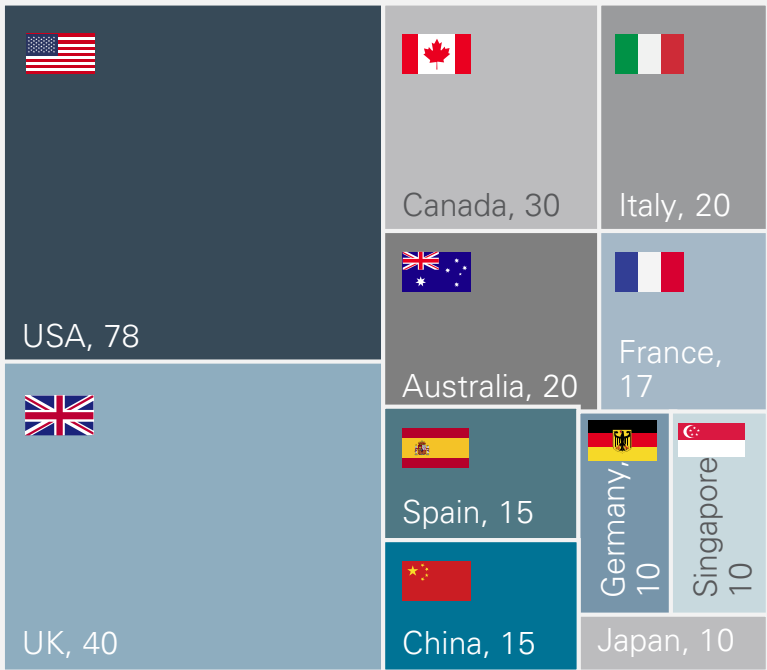
Employee Count



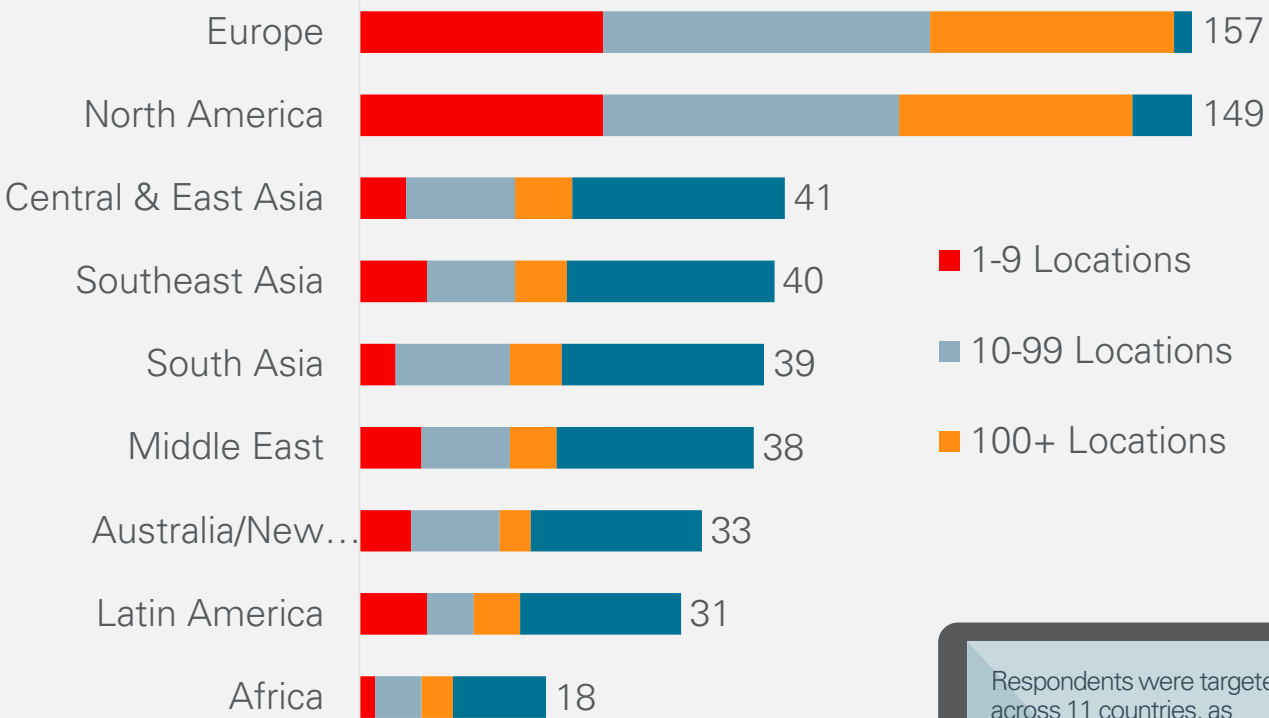
* Number of respondents

Respondents represented broad levels of regional presence across regions, though predominantly in Europe & North America

Respondents' Countries



Geographic Presence of Company



Respondents were targeted across 11 countries, as represented here

In what geographic regions does your company have operations?

How many locations do you have in each region?

73% of respondents were from the IT or operations job functions and 75% from Director of higher level

Q: What is your main job function?
Which of the following best describes your business title?

Job Function

Information Technology	62%
Marketing / Advertising	3%
Network Management	3%
Operations / Production	11%
Product Management	3%
Research & Development	4%
Strategy / Innovation	4%
Supply Chain / Demand Management	1%
Telecommunications	5%
Warehouse / Logistics / Shipping	5%

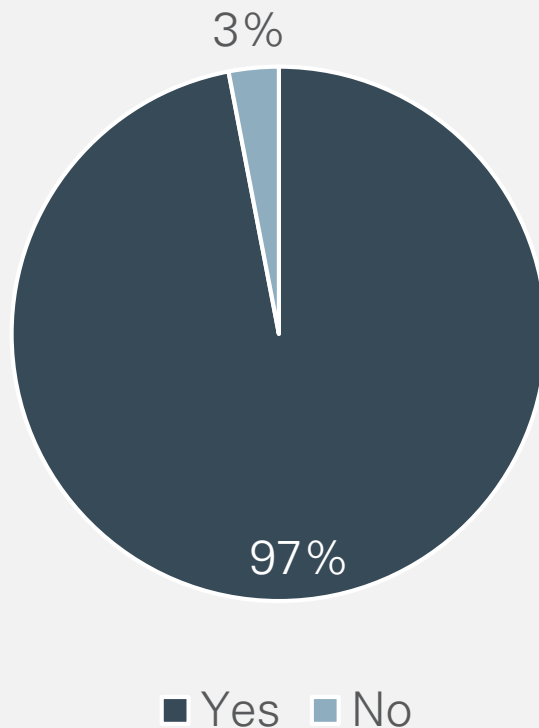


Job Title

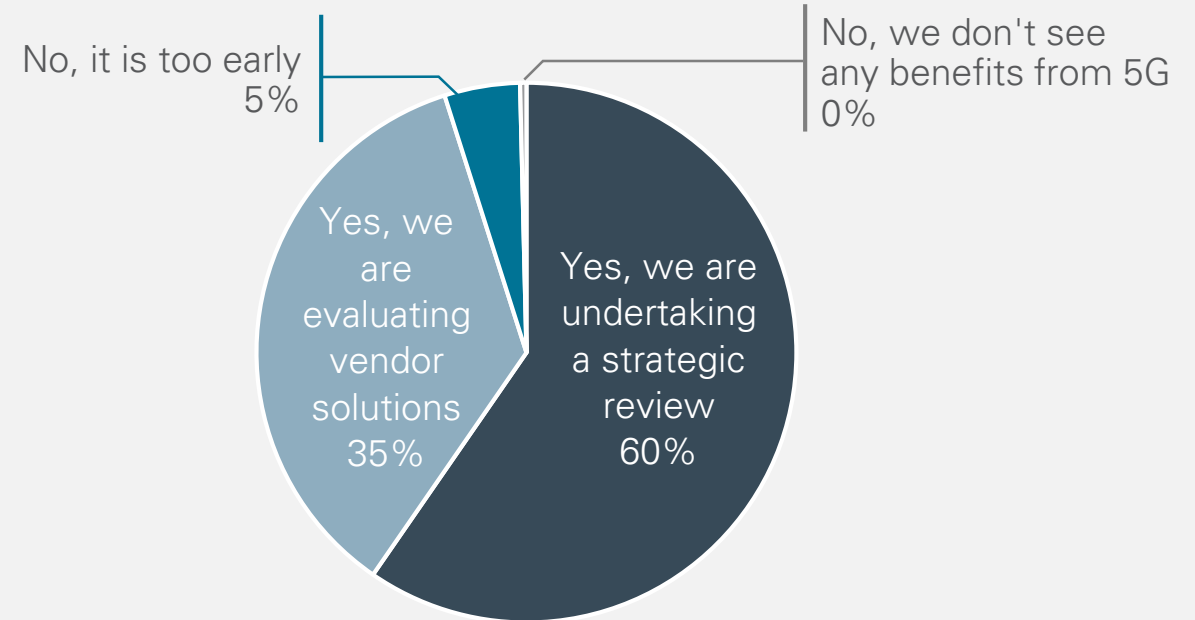
President / CxO (CEO, CFO, CMO)	34%
VP / Assistant VP / Principal	7%
Director / Department Head	34%
Supervisor / Manager / Senior Manager	25%

Respondents are overwhelmingly aware of the benefits that 5G can bring to their business, and they are taking action accordingly

Awareness of 5G Benefits



5G Evaluation Planning



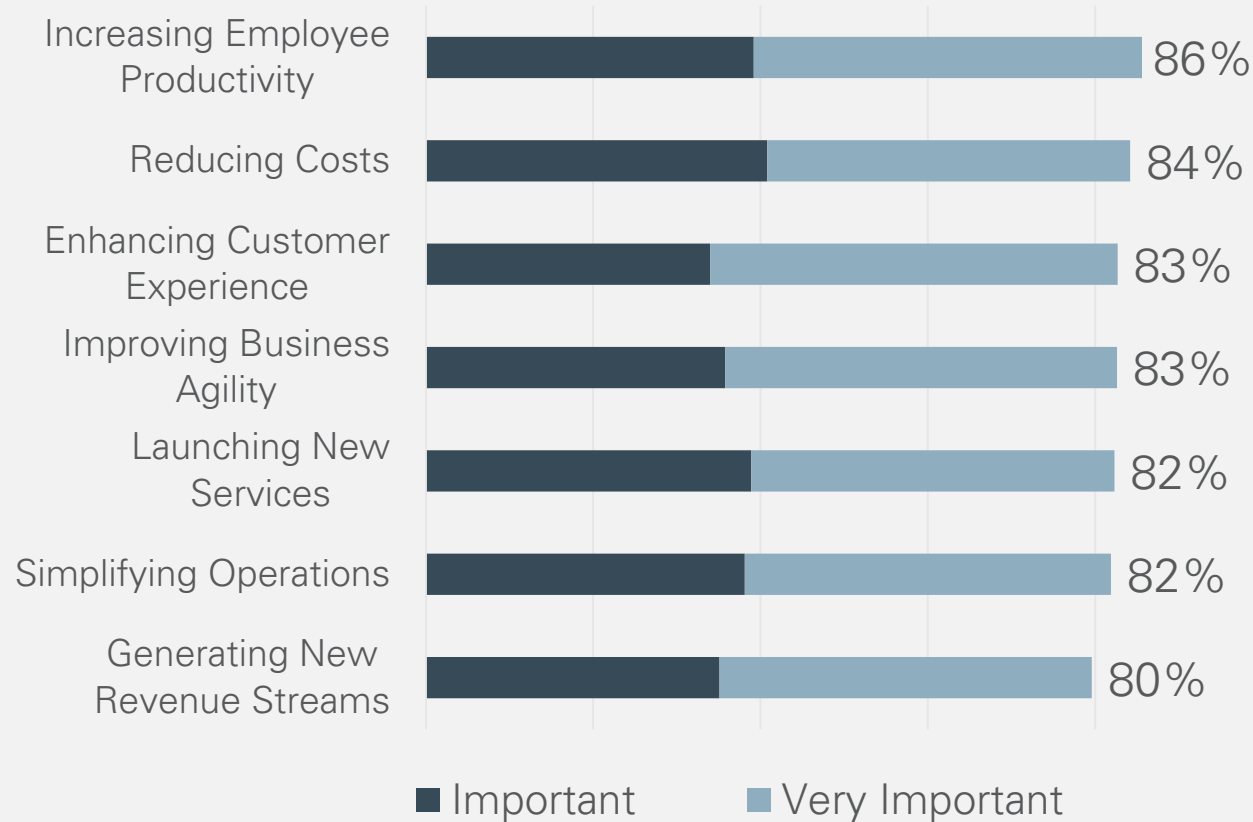
Q: Are you aware of the capabilities and benefits that 5G network technologies promise to deliver?

Are you evaluating 5G network capabilities to see how they can impact your business?

Enterprises believe that 5G will have a very meaningful impact on all of their business objectives

Significance of 5G to Business Objectives

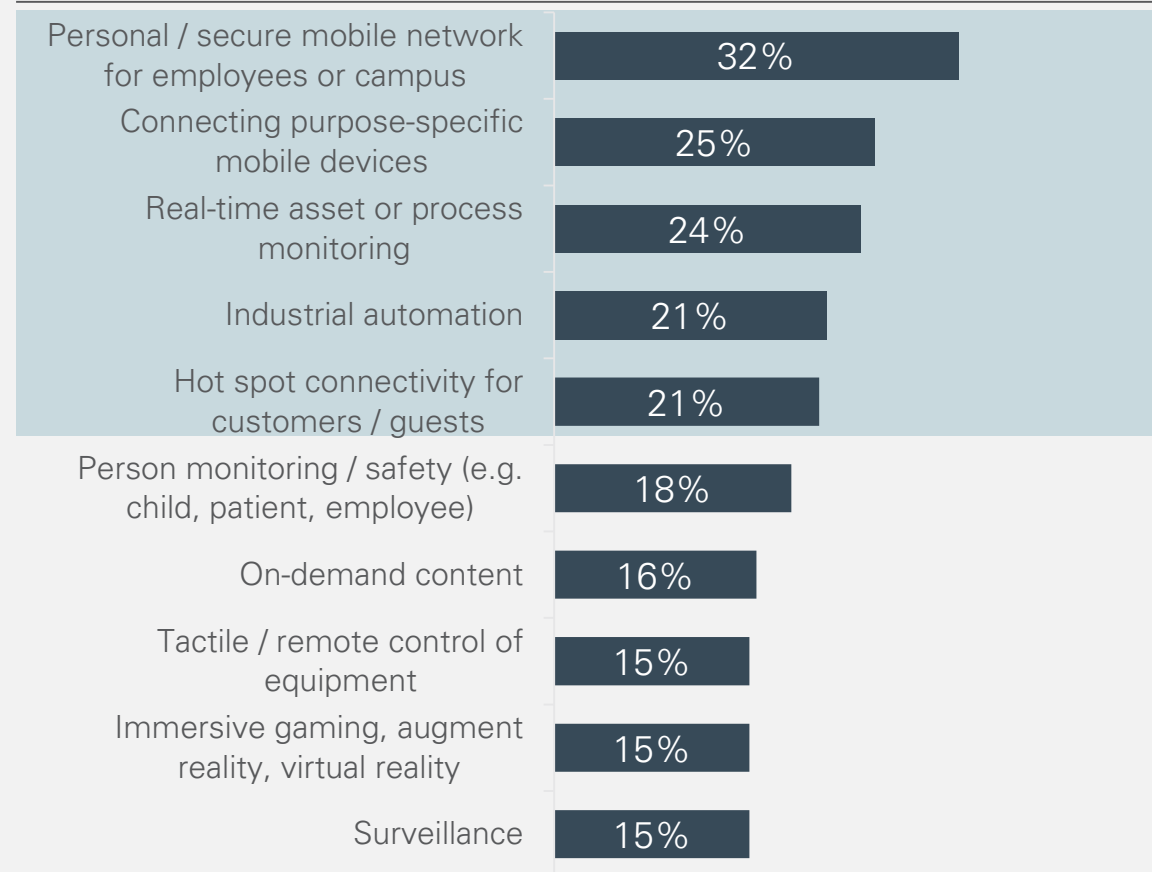
Q: When available, how important will 5G-enabled solutions be to each of the following business objectives?



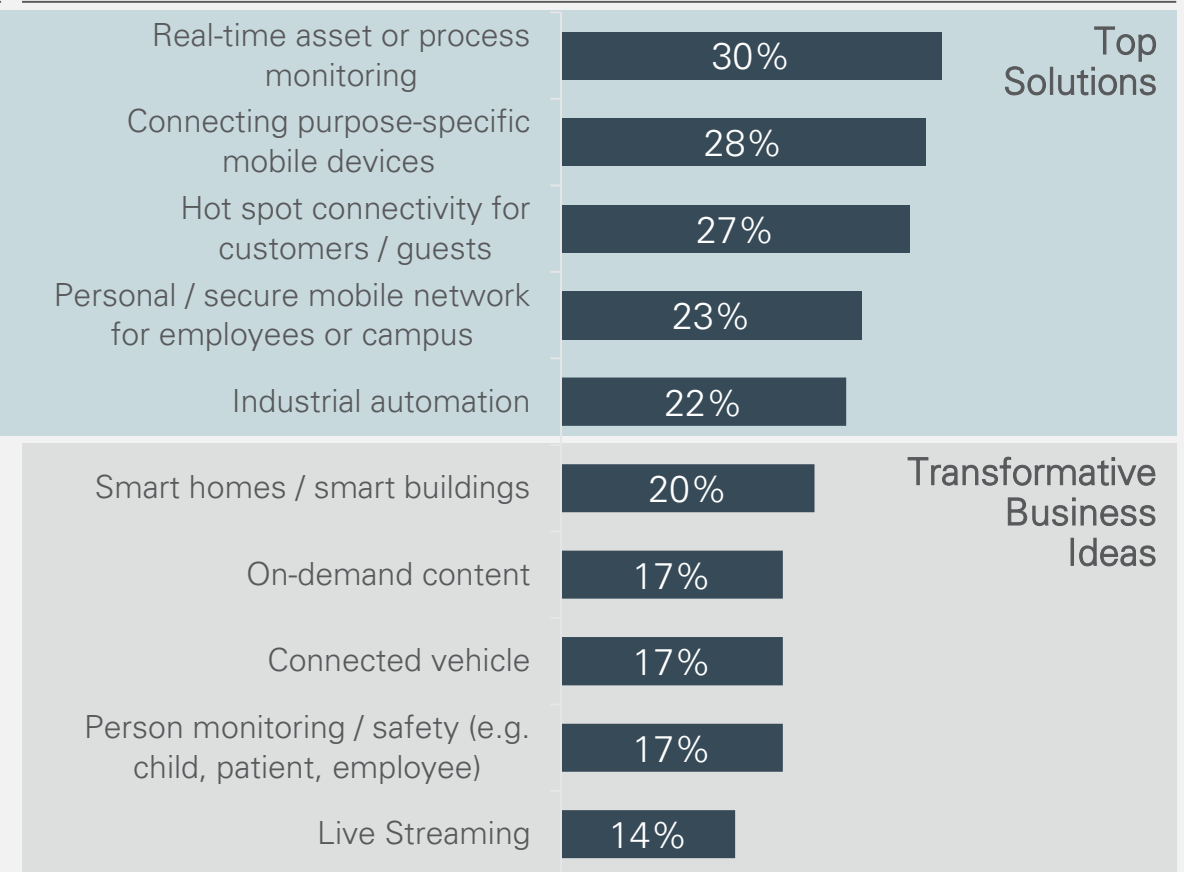
Although top solutions are the same, business respondents are more interested in transformative concepts than IT respondents

Q: Which of the following solutions are most important to your business?

Importance of Solutions (IT respondents)



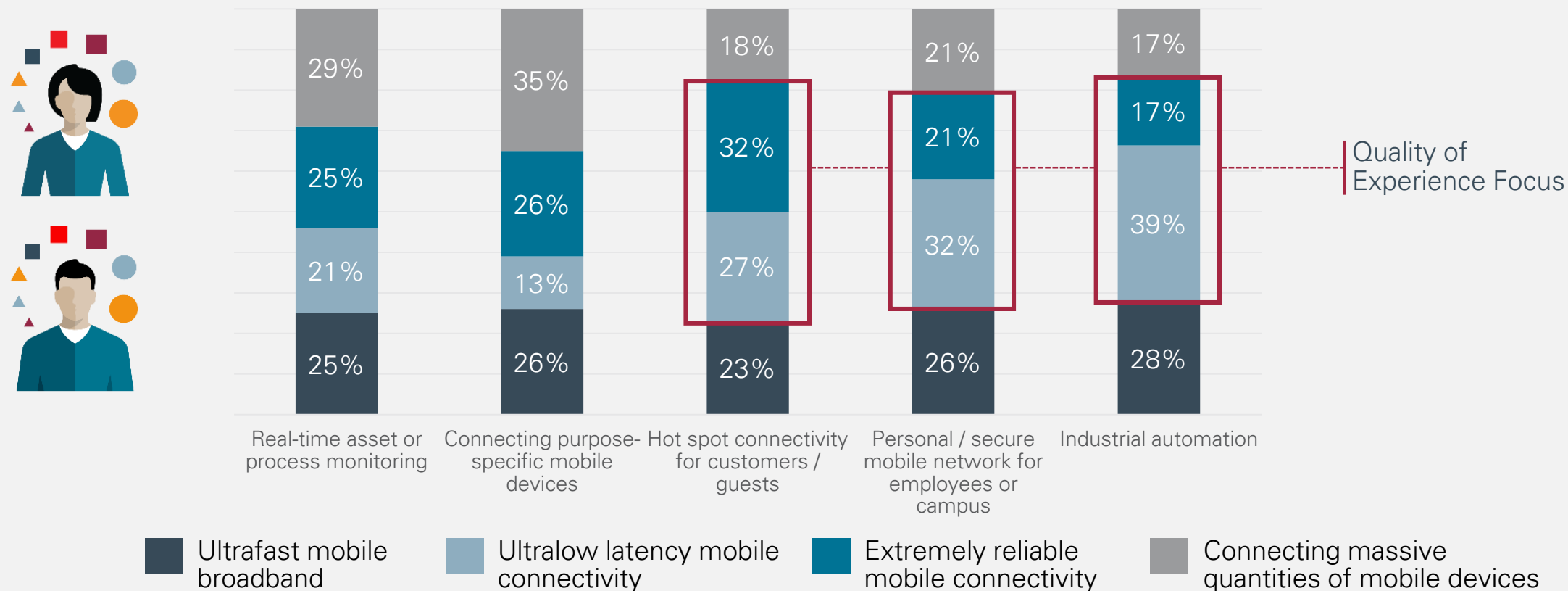
Importance of Solutions (Business respondents)



When asked about the importance of network qualities for top solutions, business respondents focus on Quality of Experience (QoE)...

Highest-Ranked Network Quality for Top Solutions (Business respondents)

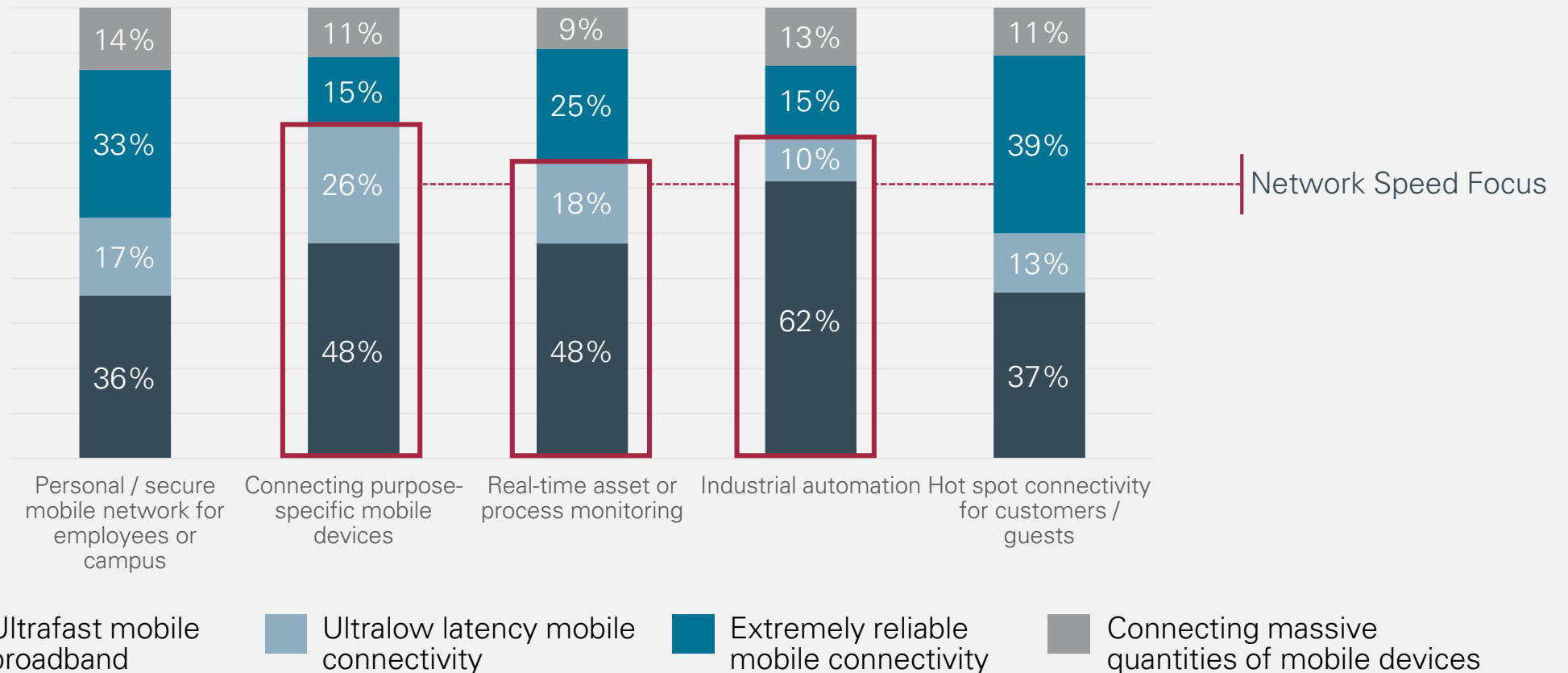
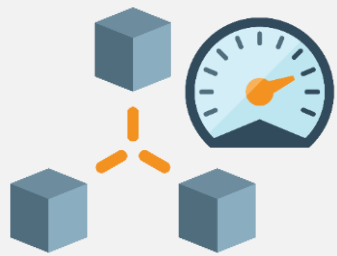
Q: For each of your top three solutions, please rank the importance of the network qualities for each solution from most important (1) to least important (4).



While IT respondents rank speed as most important network quality

Highest-Ranked Network Quality for Top Solutions (IT respondents)

Q: For each of your top three solutions, please rank the importance of the network qualities for each solution from most important (1) to least important (4).



Connectivity solutions dominate up to 100K endpoints, while business solutions correlate to larger number of endpoints

Q: How many endpoints will your company deploy for each of these solutions?

Top Solutions by Number of Endpoints

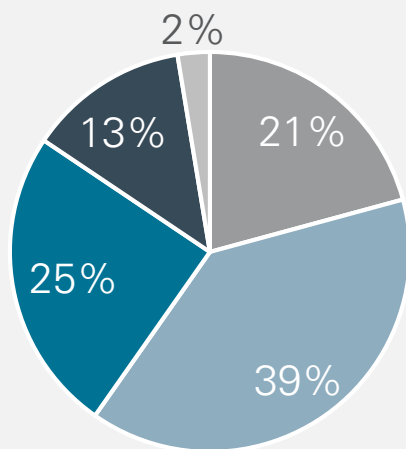
Number of Endpoints	Top Solutions
0 – 1,000	<ul style="list-style-type: none">Personal / secure mobile network for employees or campusHot spot connectivity for customers / guestsIndustrial automation and real-time asset or process monitoring
1,001 – 10,000	<ul style="list-style-type: none">Personal / secure mobile network for employees or campusConnecting purpose-specific mobile devicesHot spot connectivity for customers / guests
10,001 – 100,000	<ul style="list-style-type: none">Personal / secure mobile network for employees or campusReal-time asset or process monitoringConnecting purpose-specific mobile devices
100,001 – 1,000,000	<ul style="list-style-type: none">Real-time asset or process monitoringPersonal / secure mobile network for employees or campusSmart homes / smart buildings
1,000,001 – 10,000,000	<ul style="list-style-type: none">Immersive gaming, augment reality, virtual realitySmart homes / smart buildingsReal-time asset or process monitoring
10,000,001 +	<ul style="list-style-type: none">Immersive gaming, augment reality, virtual realityLive StreamingTactile / remote control of equipment



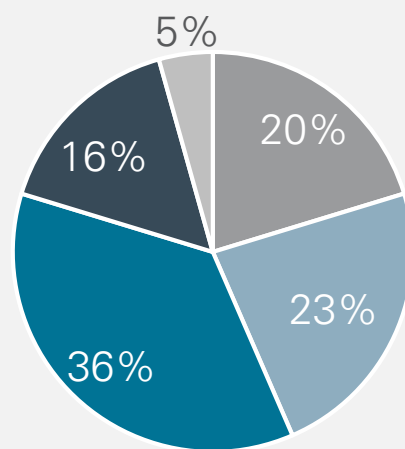
Over 75% consider 5G crucial long term, but a significant number are willing to wait for 5G for their most important enterprise solutions

Q: Are you considering 5G networking technology for each of these solutions?

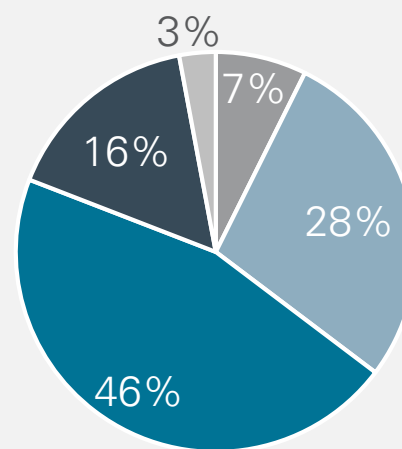
Personal / secure mobile network for employees or campus



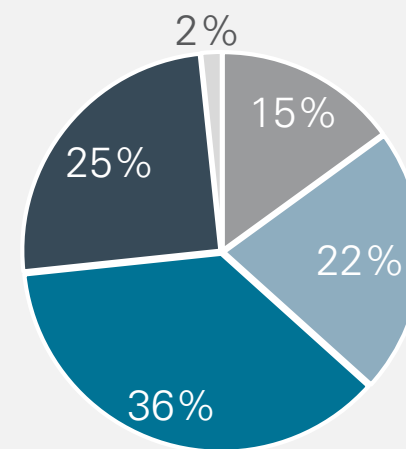
Connecting purpose-specific mobile devices



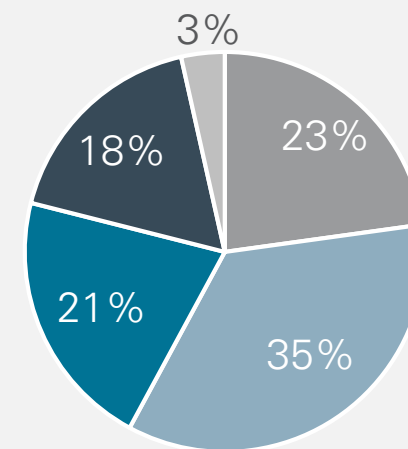
Real-time asset or process monitoring



Hot spot connectivity for customers / guests



Industrial automation



■ This can only be done with 5G

■ 5G would make this better: we will hold off until we can use 5G

■ 5G would make this better: but we will start with another technology

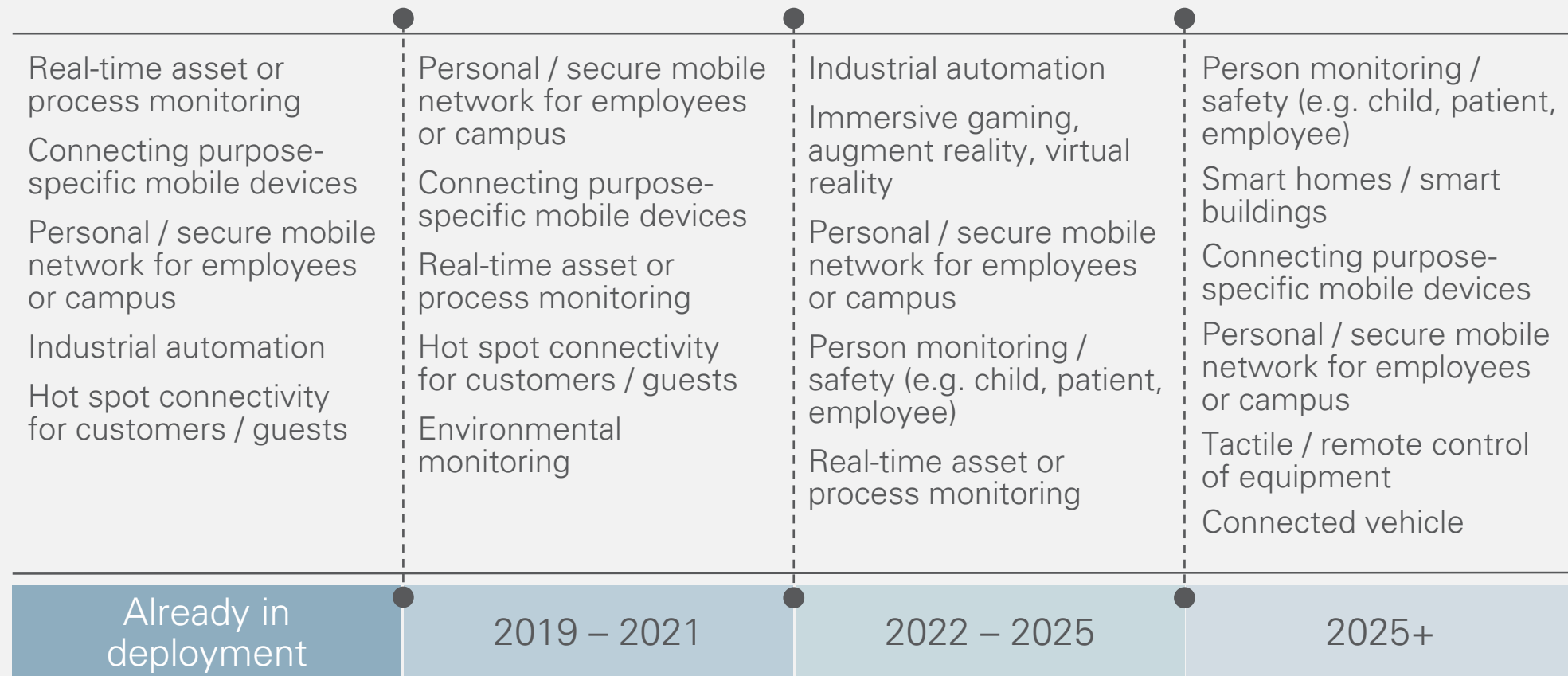
■ 5G is not necessary, we will do this with other technology

■ Not sure

Ecosystems must support connectivity solutions in the near-term as well as more demanding solutions in later years

Q: When do you expect to begin deploying each of these solutions under consideration?

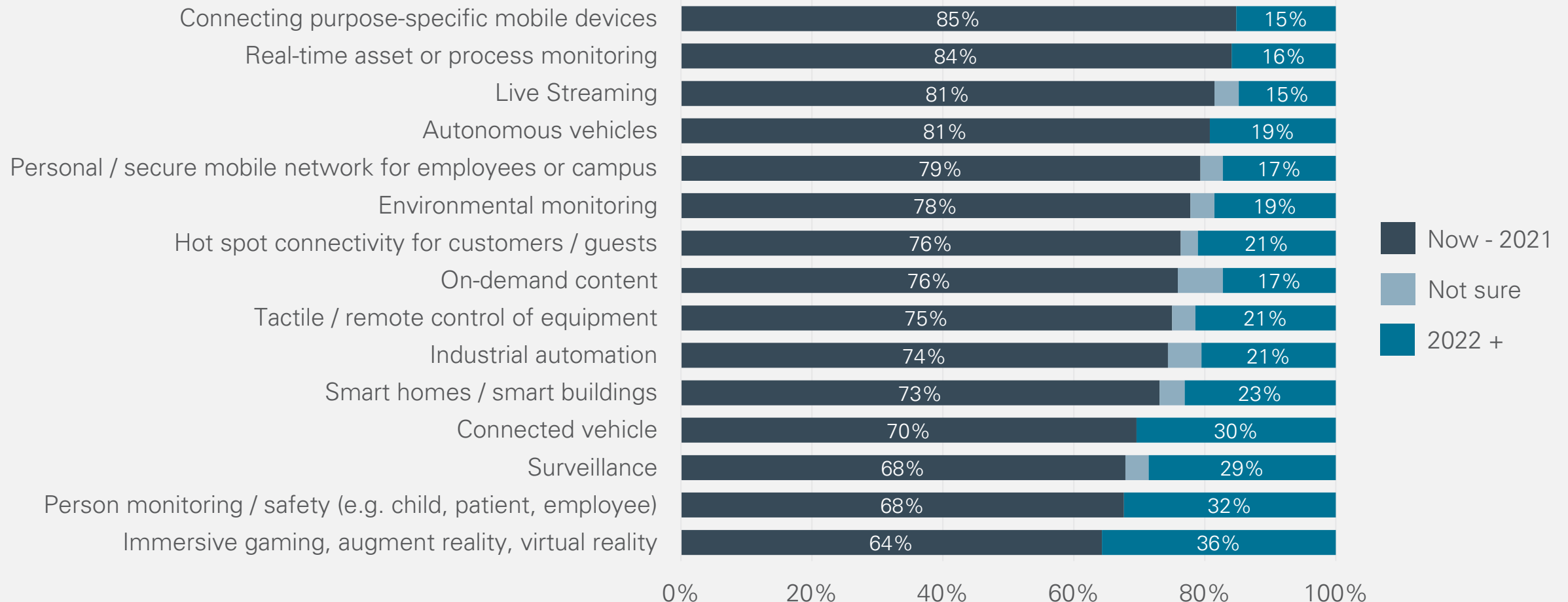
Top Solutions for Deployment by Year



Roughly three-fourths of IT respondents expect to begin deploying solutions by 2021

Q: When do you expect to begin deploying each of these solutions under consideration?

Expected Deployment Time for Solutions (IT respondents)



Enterprises prefer ecosystem-based 5G solutions; no single vendor type is seen as a universal solution provider

Preferred Vendor for Solution Components

	Connectivity	Enablement Platform	Application	Device
Communication Service Provider	49%	13%	13%	16%
System Integrator	22%	45%	23%	18%
Specialized Solution Provider	13%	18%	19%	35%
Equipment & Software Vendor	11%	18%	41%	21%
Not Sure	5%	7%	6%	11%

67% agree that communication service providers are **necessary for successful deployment** of 5G network-enabled solutions

Q: Who would be your preferred vendor for each of the solution parts?

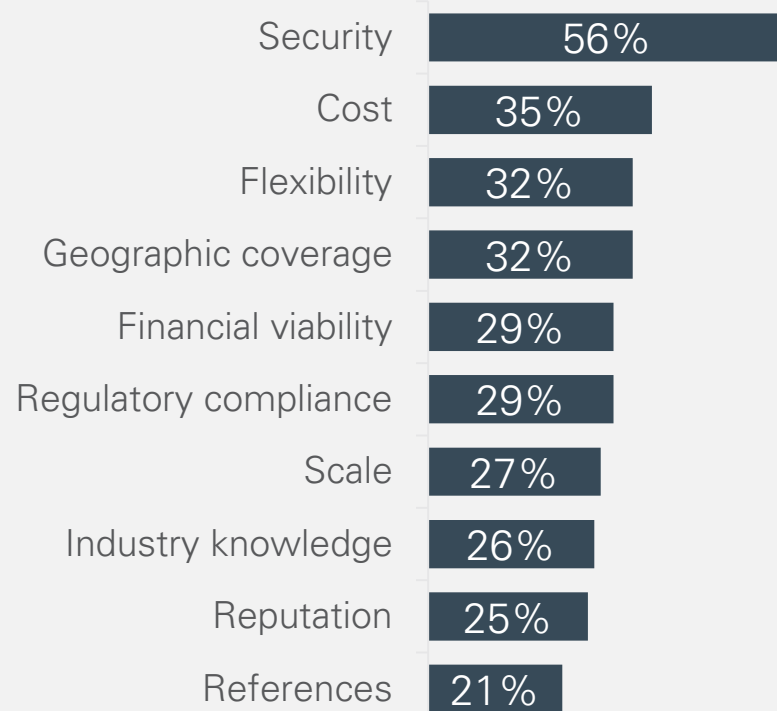
For each statement below, please indicate if you generally agree, disagree, or are not sure.

"We must work closely with Communication Service Providers to successfully deploy 5G network-enabled solutions"

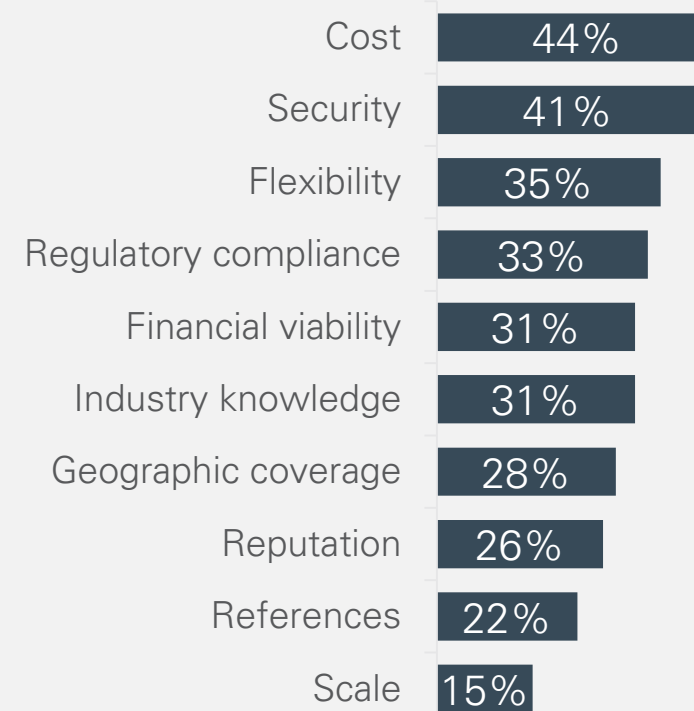
For “as a Service” deployment models, security and cost are the highest-ranked selection criteria

Please rank the importance of the following factors in choosing a potential “as-a-Service” vendor?

Top-3 Ranked Selection Criteria for “aaS” Solutions (IT respondents)

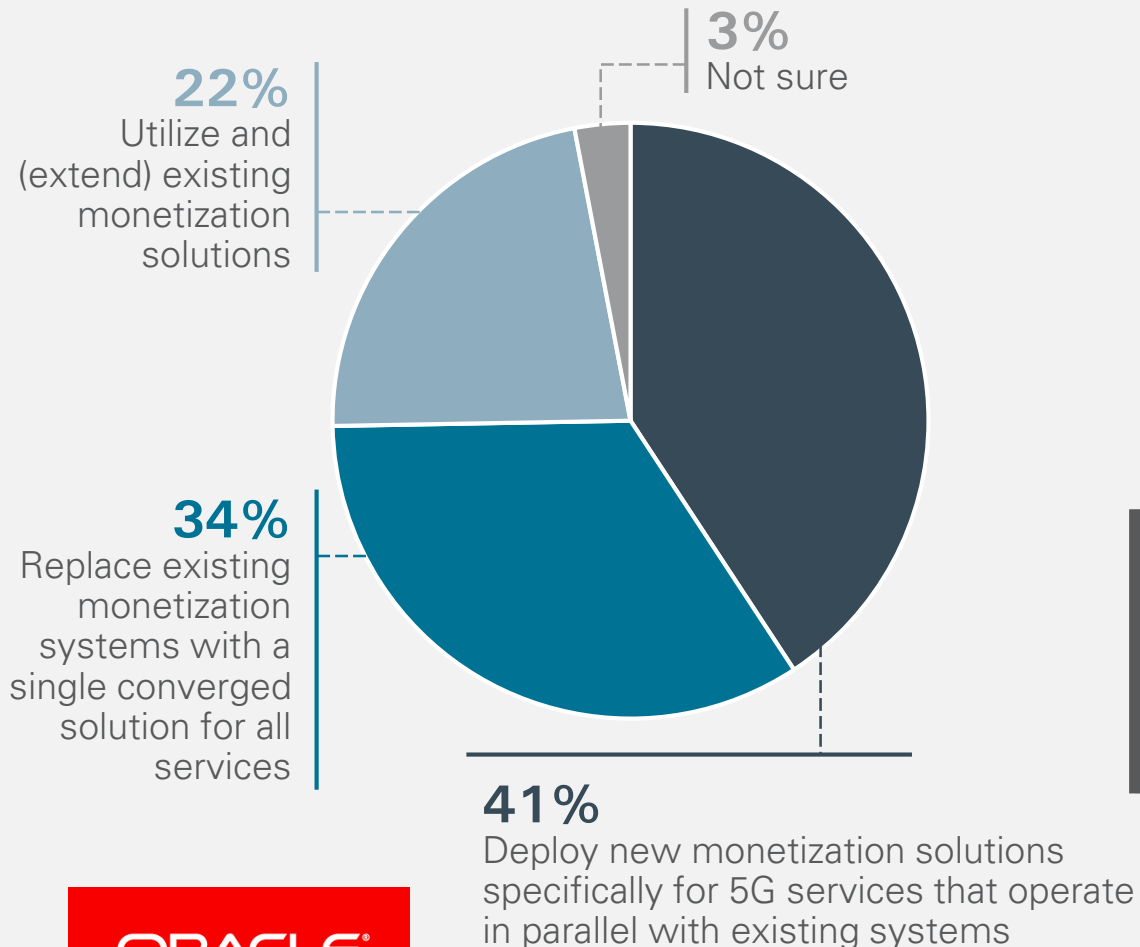


Top-3 Ranked Selection Criteria for “aaS” Solutions (Business respondents)



74% prefer new monetization systems for 5G-enabled solutions

Preferred 5G Monetization Approach



Preferred 5G Monetization Models

- 1 Pure usage based offers
- 2 Offers with a combination of flat rate and usage charging
- 3 Pure flat rate subscription offers

50% of respondents believe that they will **have difficulty monetizing solutions** built on 5G network technology

Which of the following approaches would you prefer for monetizing 5G network-enabled solutions?

Please rank the following 5G monetization models in order of importance

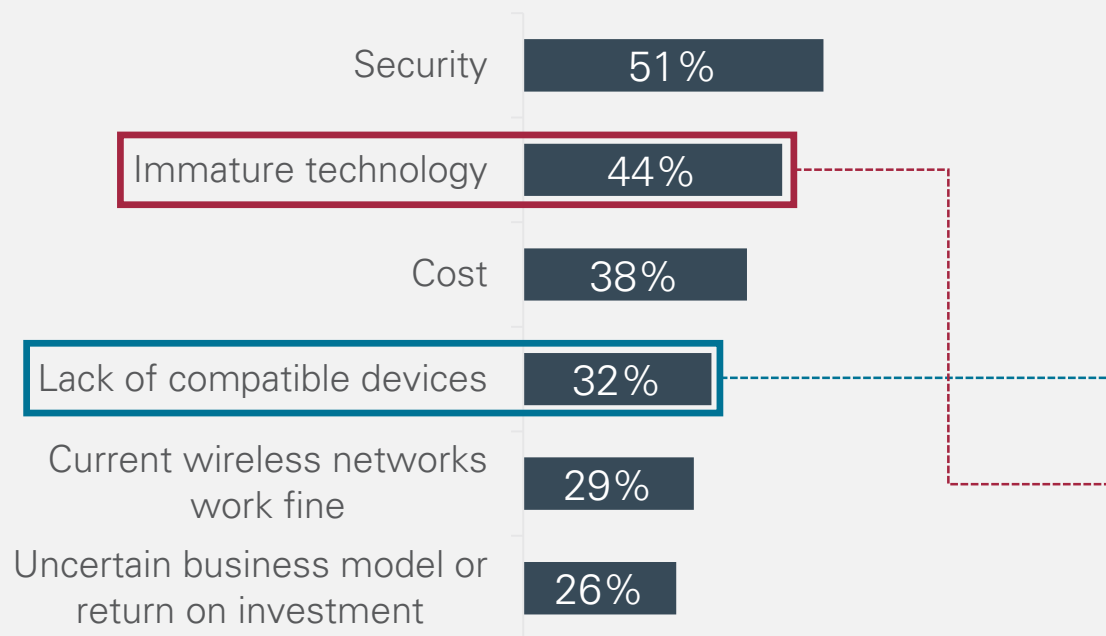
For each statement below, please indicate if you generally agree, disagree, or are not sure.

"It will be difficult for my business to monetize 5G network-enabled solutions"

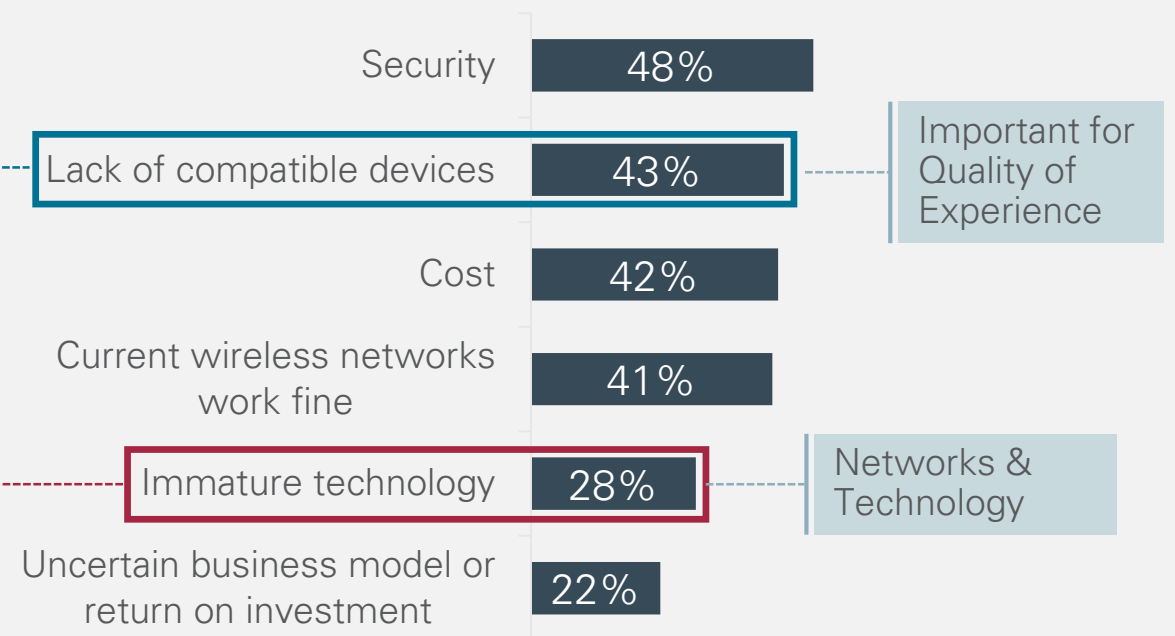
IT and business respondents have differing concerns, however agree that security is a top priority regarding 5G solutions

Q: If these solutions are rolled out on 5G wireless networks, what are your biggest concerns?

Concerns with 5G for Enterprise Solutions (IT respondents)



Concerns with 5G for Enterprise Solutions (Business respondents)



Enterprises recognize the transformative power of 5G networks

For each statement below, please indicate if you generally agree, disagree, or are not sure.

"5G networks will transform the way we do business in the foreseeable future"

"5G networks will revolutionize Internet of Things capabilities"

"5G networks will enable transformative new services for my customers"

84%

Agree that **5G networks will be transformative** and have a lasting impact on the way their companies do business

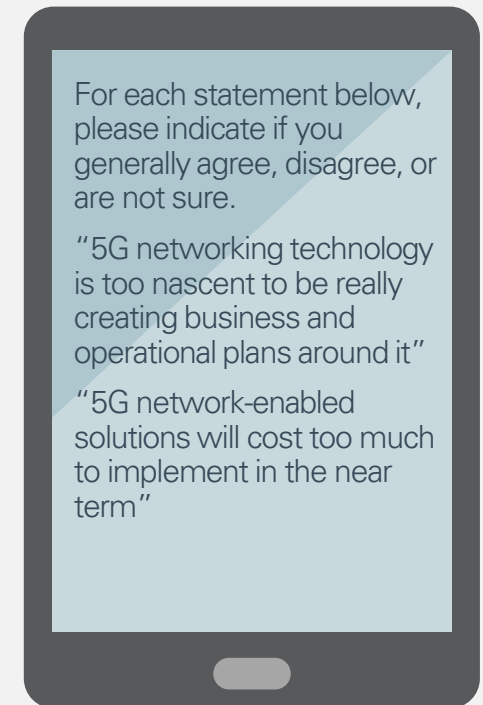
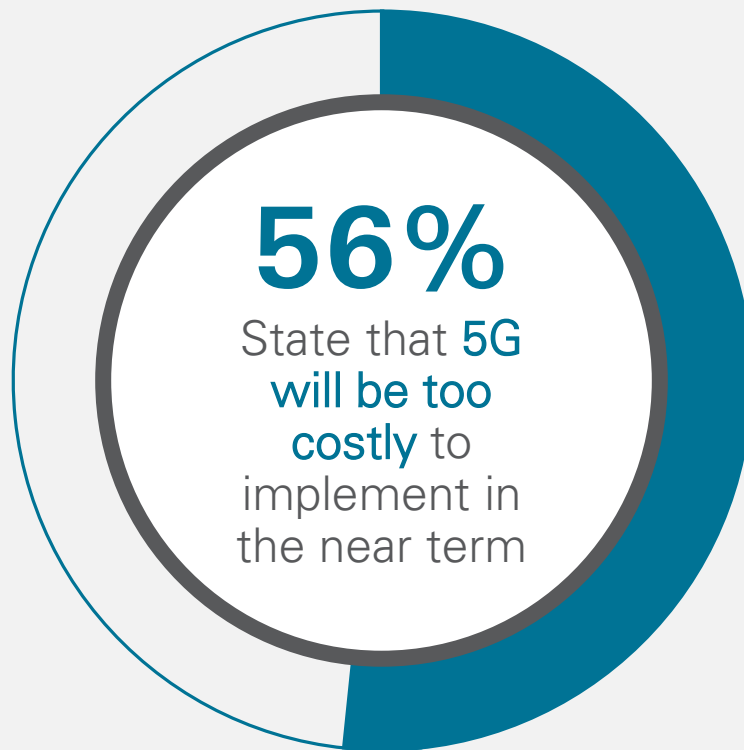
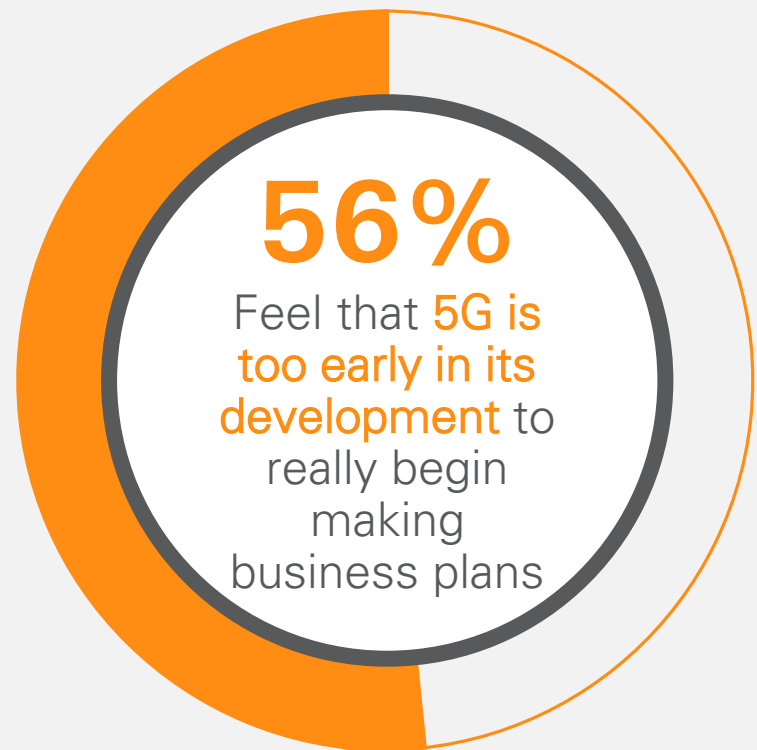
73%

Agree the **Internet of Things will be revolutionized** by 5G networks

68%

Feel that new **5G-enabled services will be transformative** to their customers

However, enterprises are cautious when it comes to cost and near-term benefits



The promise of 5G ecosystems in the enterprise

Companies are aware of 5G and the benefits that it could bring them:

- 97% of respondents are aware of 5G and almost all are beginning to plan accordingly
- 80-86% believe that launching 5G-enabled services are important to their business objectives
- Business respondents are focused on the quality of experience (QoE) improvements made possible by 5G
- IT respondents care more about the network technologies and the internal efficiencies enabled by 5G

Beyond initial benefits like QoE and speed, organizations recognize the transformative power 5G networks could hold

- 84% agree that 5G networks will be transformative and have a lasting impact on the way their companies do business
- 73% agree the Internet of Things will be revolutionized by 5G networks
- 68% feel that new 5G-enabled services will be transformative to their customers

Enterprises prefer ecosystem-based 5G solutions

- No single vendor type is seen as a universal solution provider
- 5G Ecosystems will support connectivity solutions in near term, focused on purpose-specific mobile devices, personal/secure mobile networks for employees or campuses, real-time asset or process monitoring, hot spot connectivity, etc.
- More demanding solutions will be expected in 3-5 years
(immersive gaming, AR/VR, industrial automation, connected vehicles, smart homes and buildings, etc.)

Most organizations will want new monetization systems for 5G-enabled solutions

- 41% say they would deploy new monetization solutions specifically for 5G services that operate in parallel with existing systems
- 34% say they will replace existing monetization systems with a single converged solution for all services
- 22% say they will utilize and (extend) existing monetization solutions

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