

A photograph of three business professionals in a meeting. On the left, a man with glasses and a beard, wearing a grey blazer over a checkered shirt, is gesturing with his hands while speaking. In the center, another man with a beard, wearing a blue and white striped shirt, is looking at the speaker. On the right, a woman with dark hair, wearing a white blouse, is looking down at a document on the table. The background is a modern office with circular ceiling lights.

5G Smart Ecosystems are Transforming the Enterprise

Are You Ready?

A Survey by Oracle
January 2019

ORACLE

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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.

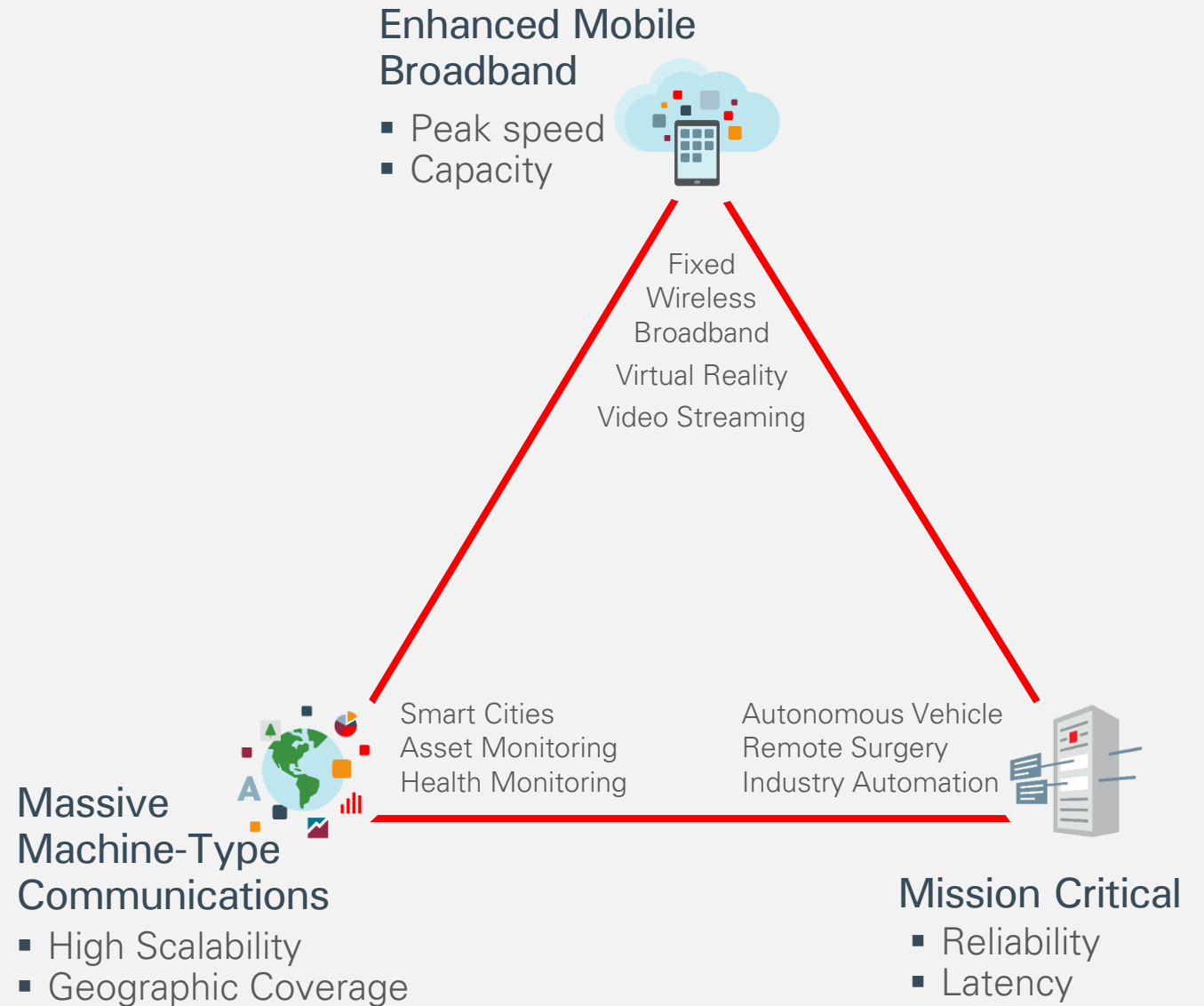


What is 5G?

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

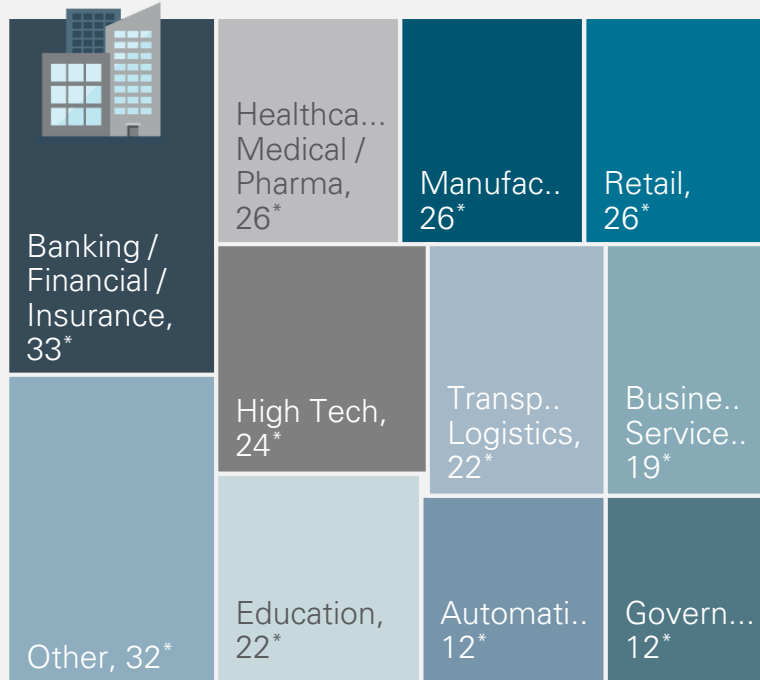
- Speed: 10-100 times faster than current LTE networks (peak data rates of 20 Gbps or higher)
- Latency: practically imperceptible latency (around 1 millisecond)
- Density: 100 times the number of devices in a given area compared to LTE
- Reliability: 99.999% network availability
- Efficiency: 90% less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



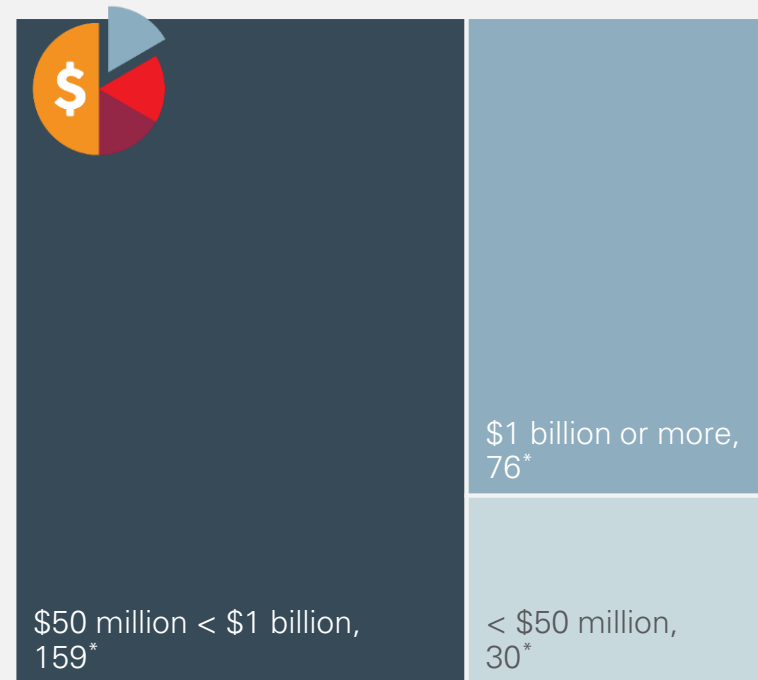
Oracle conducted a global online survey of 265 key decision makers at medium and large enterprises across industries



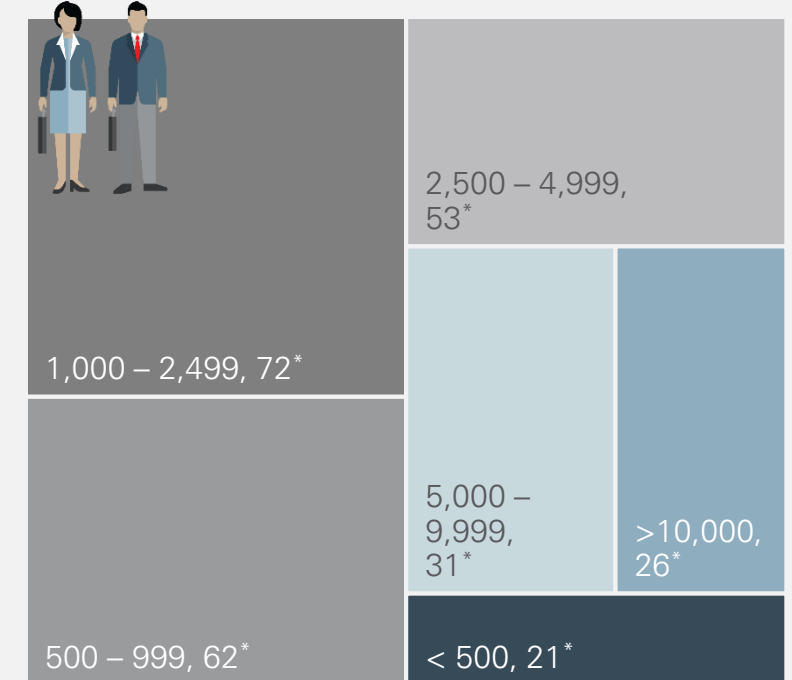
Industry



Company Revenue



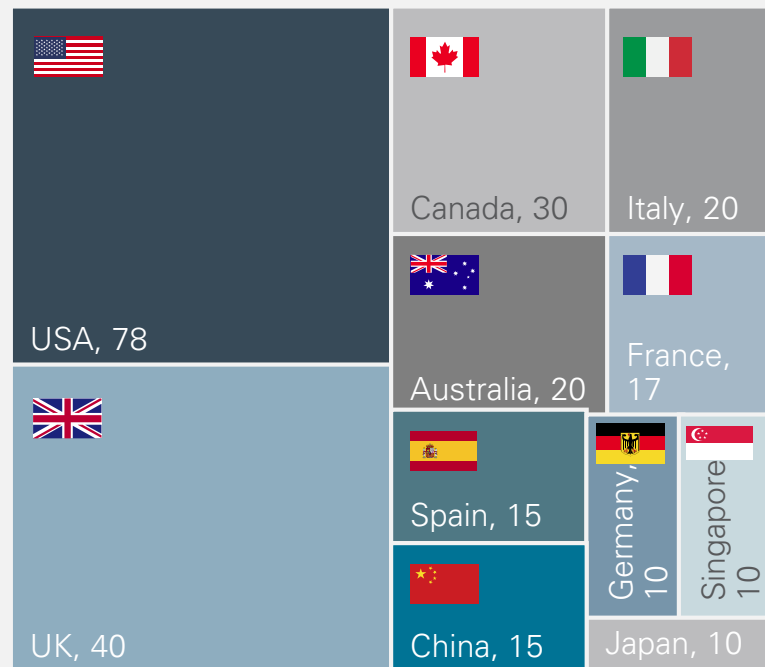
Employee Count



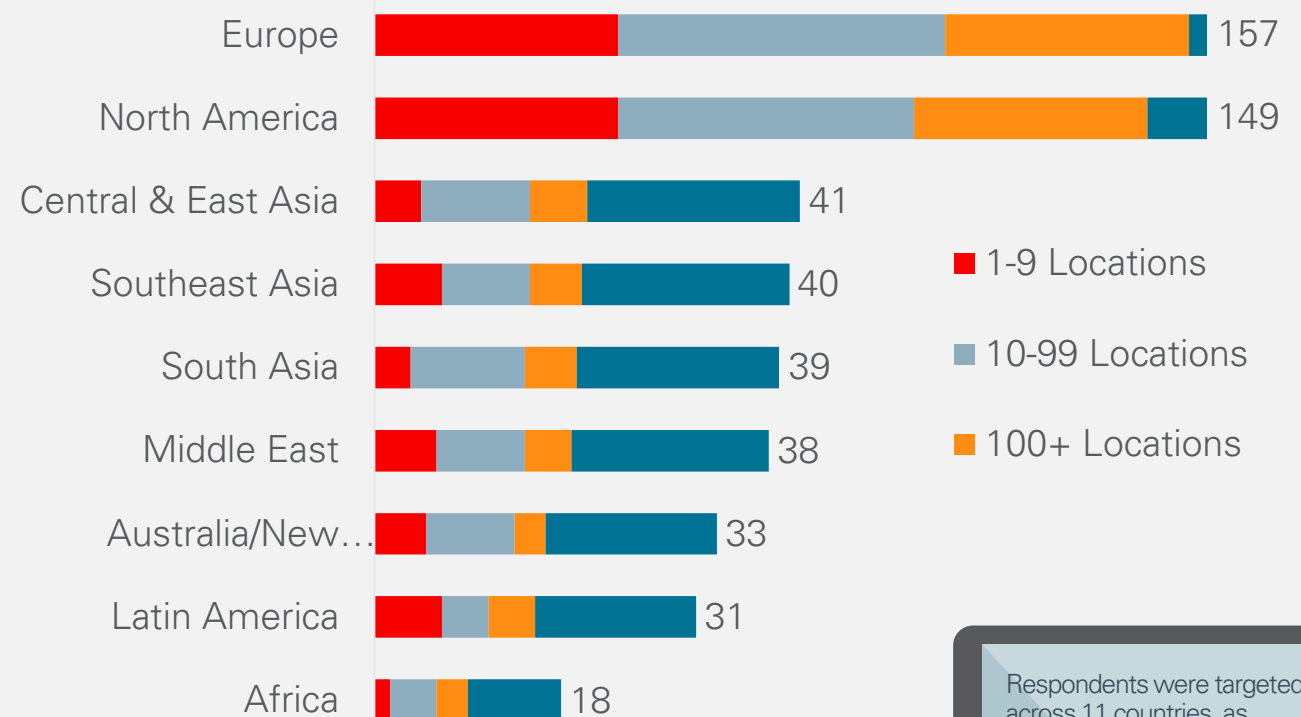
* Number of respondents

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

Respondents' Countries



Geographic Presence of Company

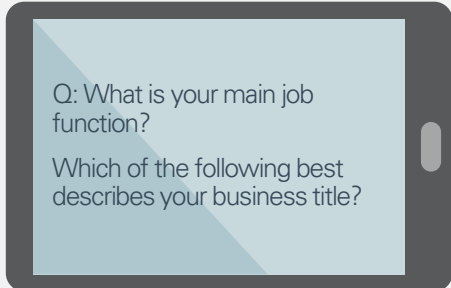


Respondents were targeted across 11 countries, as represented here

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



Job Function

Job Title

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%

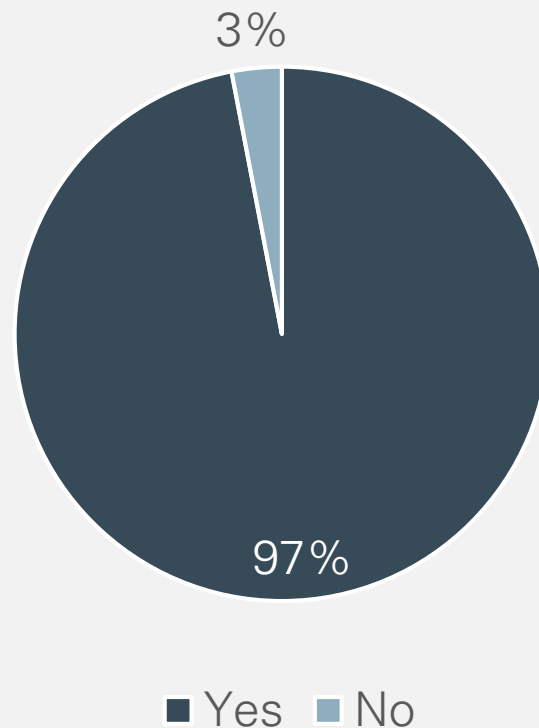


President / CxO (CEO, CFO, CMO)	34%
VP / Assistant VP / Principal	7%
Director / Department Head	34%
Supervisor / Manager / Senior Manager	25%

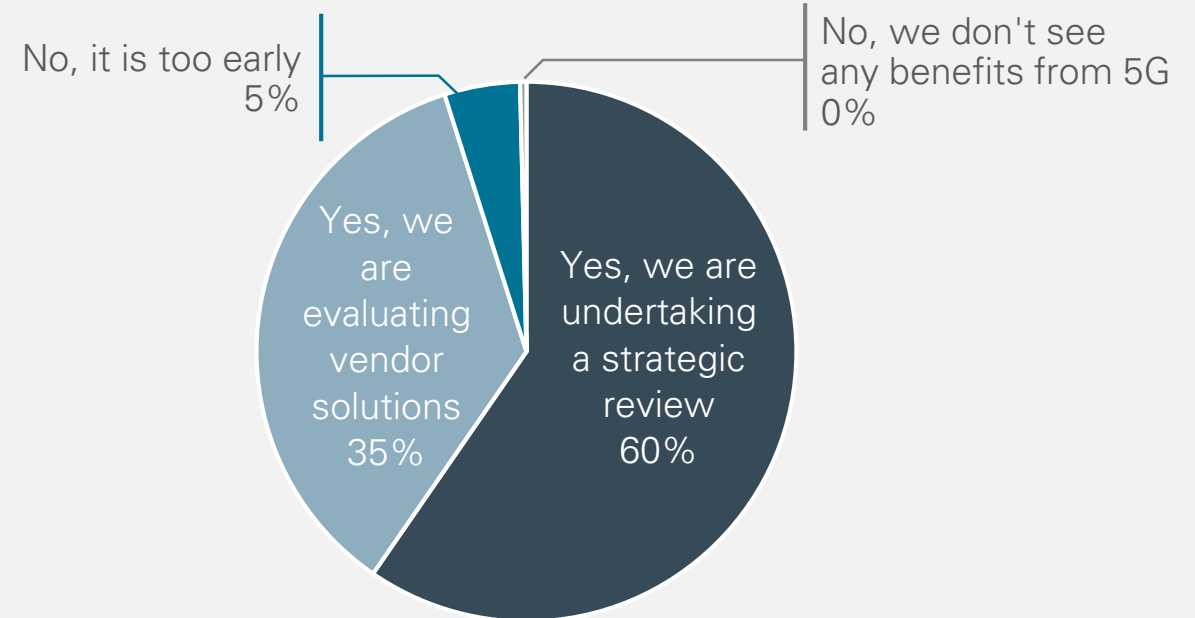


Respondents are overwhelmingly aware of the benefits that 5G can bring to their business, and they are taking action accordingly

Awareness of 5G Benefits



5G Evaluation Planning



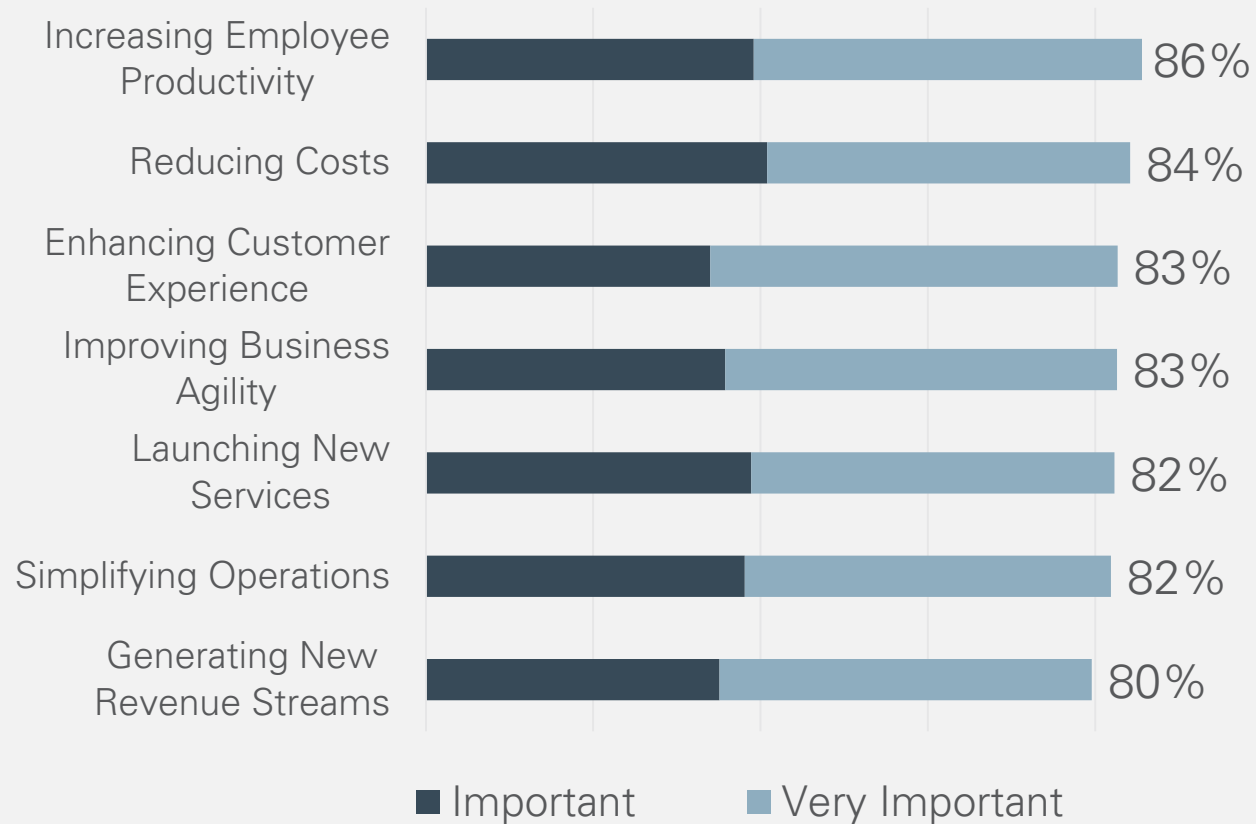
Q: Are you aware of the capabilities and benefits that 5G network technologies promise to deliver?

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

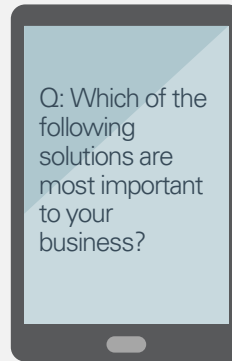
Enterprises believe that 5G will have a very meaningful impact on all of their business objectives

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

Significance of 5G to Business Objectives

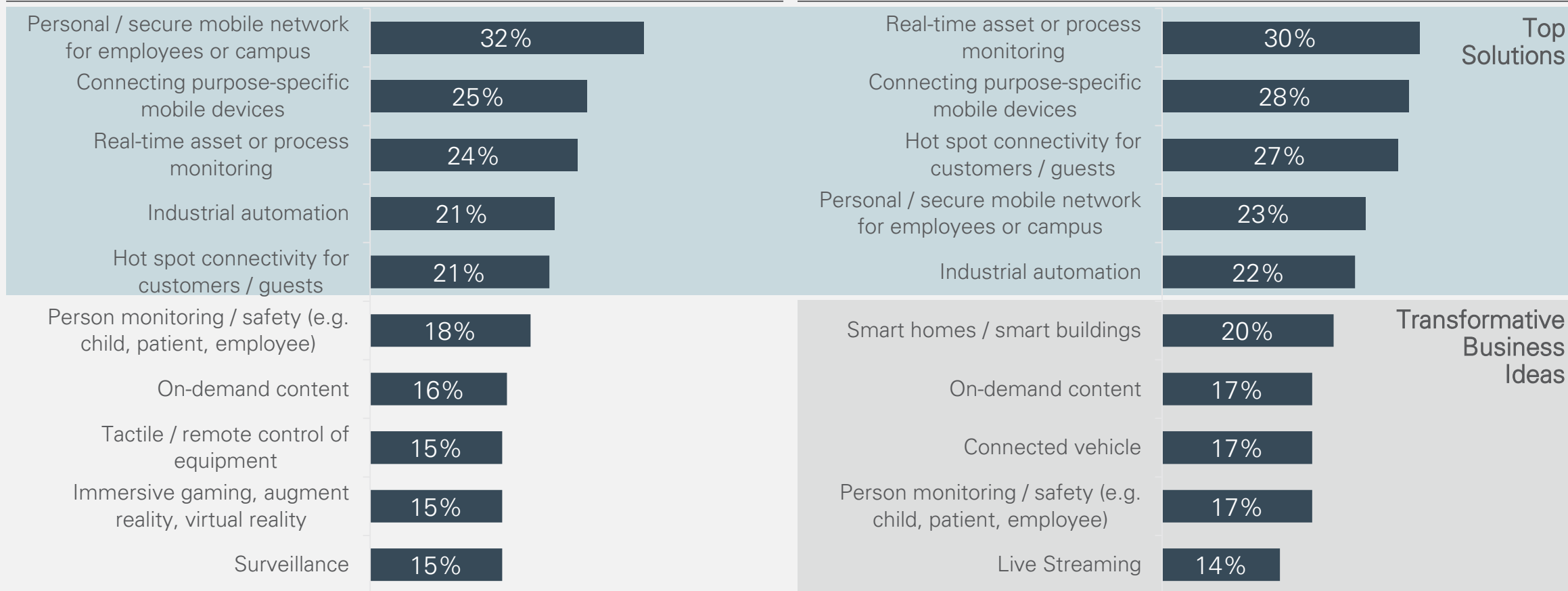


Although top solutions are the same, business respondents are more interested in transformative concepts than IT respondents



Importance of Solutions (IT respondents)

Importance of Solutions (Business respondents)



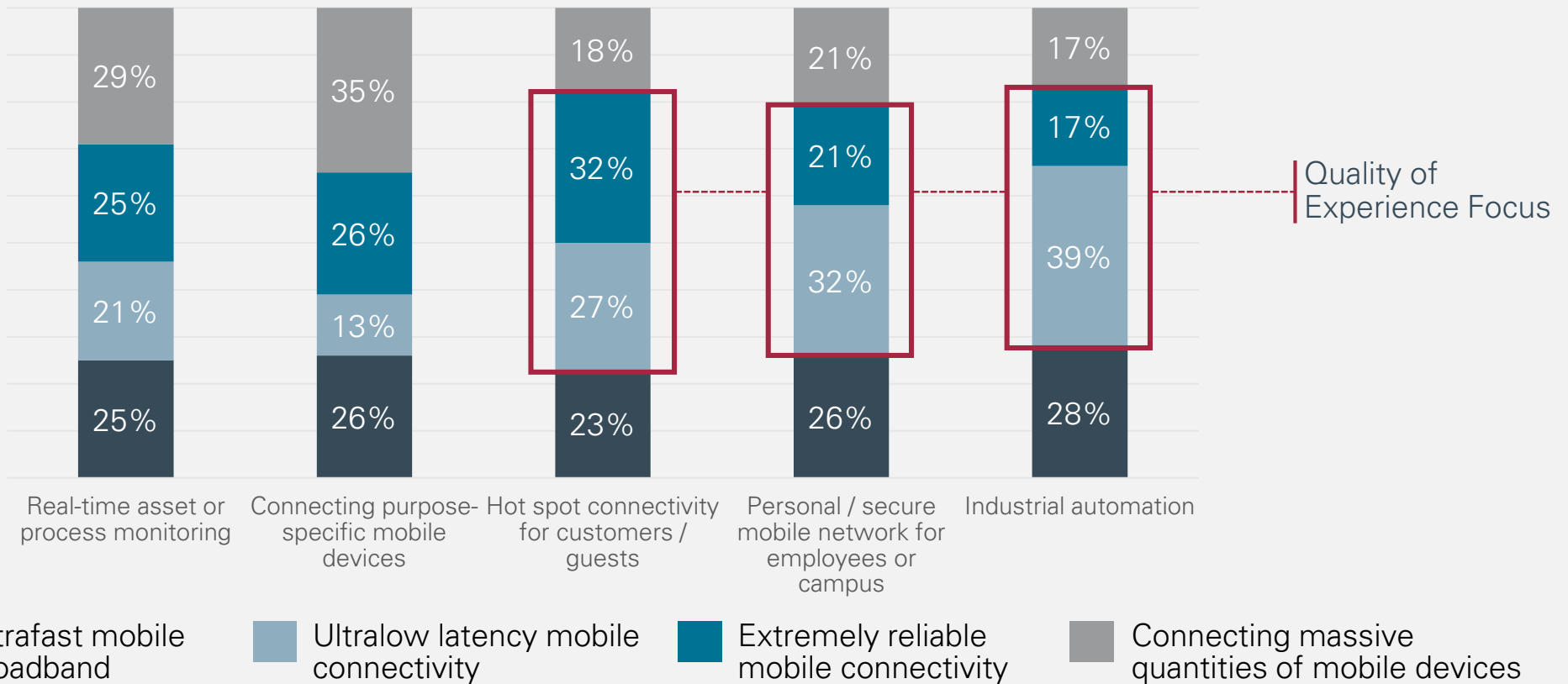
* IT respondents refers to those that selected IT, Network or Telecommunications as their primary job responsibility area



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)

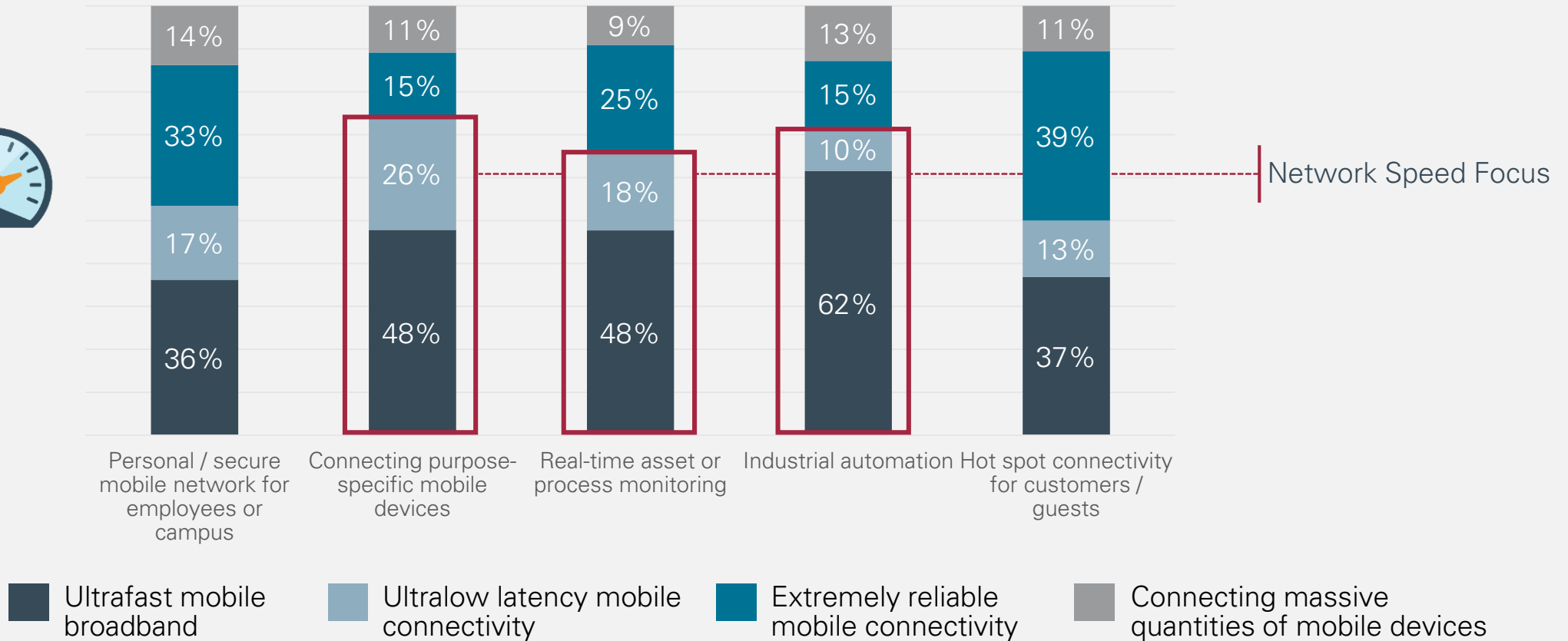
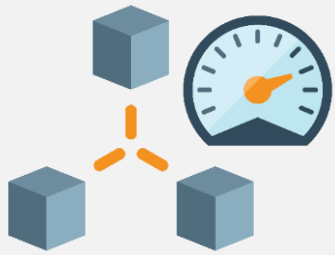
Q: For each of your top three solutions, please rank the importance of the network qualities for each solution from most important (1) to least important (4).



While IT respondents rank speed as most important network quality

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).

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



* IT respondents refers to those that selected IT, Network or Telecommunications as their primary job responsibility area

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

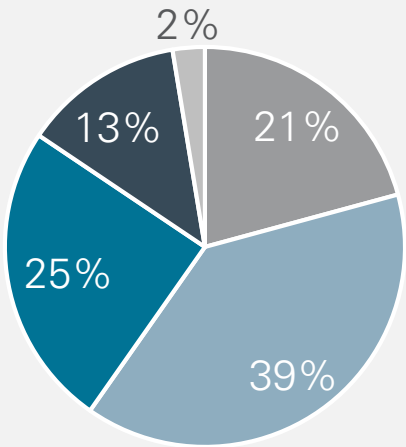
0 – 1,000	<ul style="list-style-type: none">Personal / secure mobile network for employees or campusHot spot connectivity for customers / guestsIndustrial automation and real-time asset or process monitoring
1,001 – 10,000	<ul style="list-style-type: none">Personal / secure mobile network for employees 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



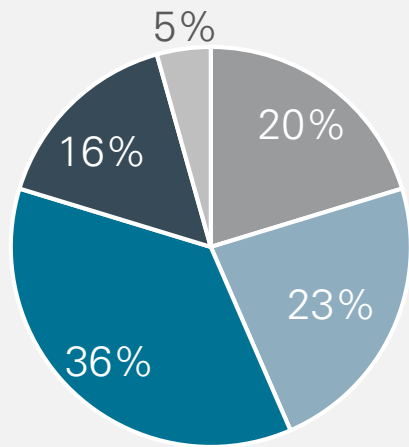
Over 75% consider 5G crucial long term, but a significant number are willing to wait for 5G for their most important enterprise solutions



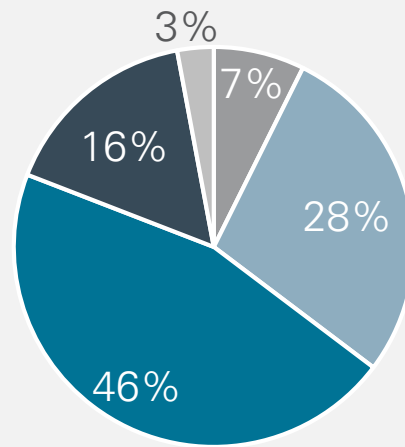
Personal / secure mobile network for employees or campus



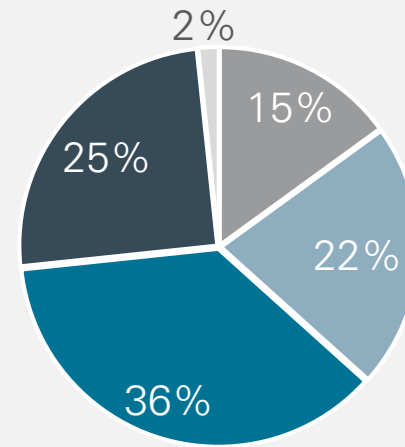
Connecting purpose-specific mobile devices



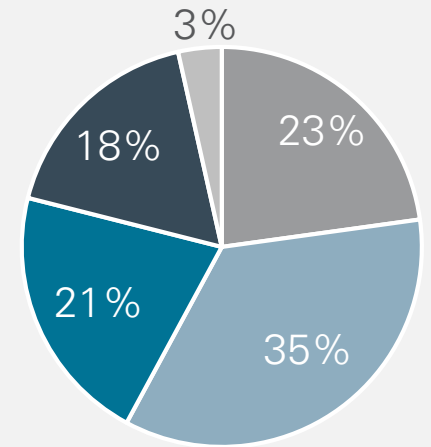
Real-time asset or process monitoring



Hot spot connectivity for customers / guests

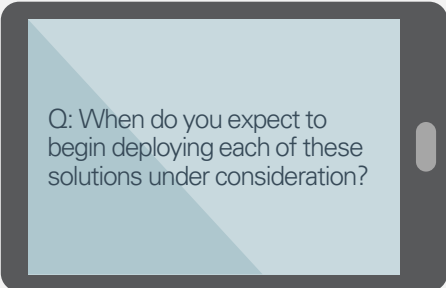


Industrial automation

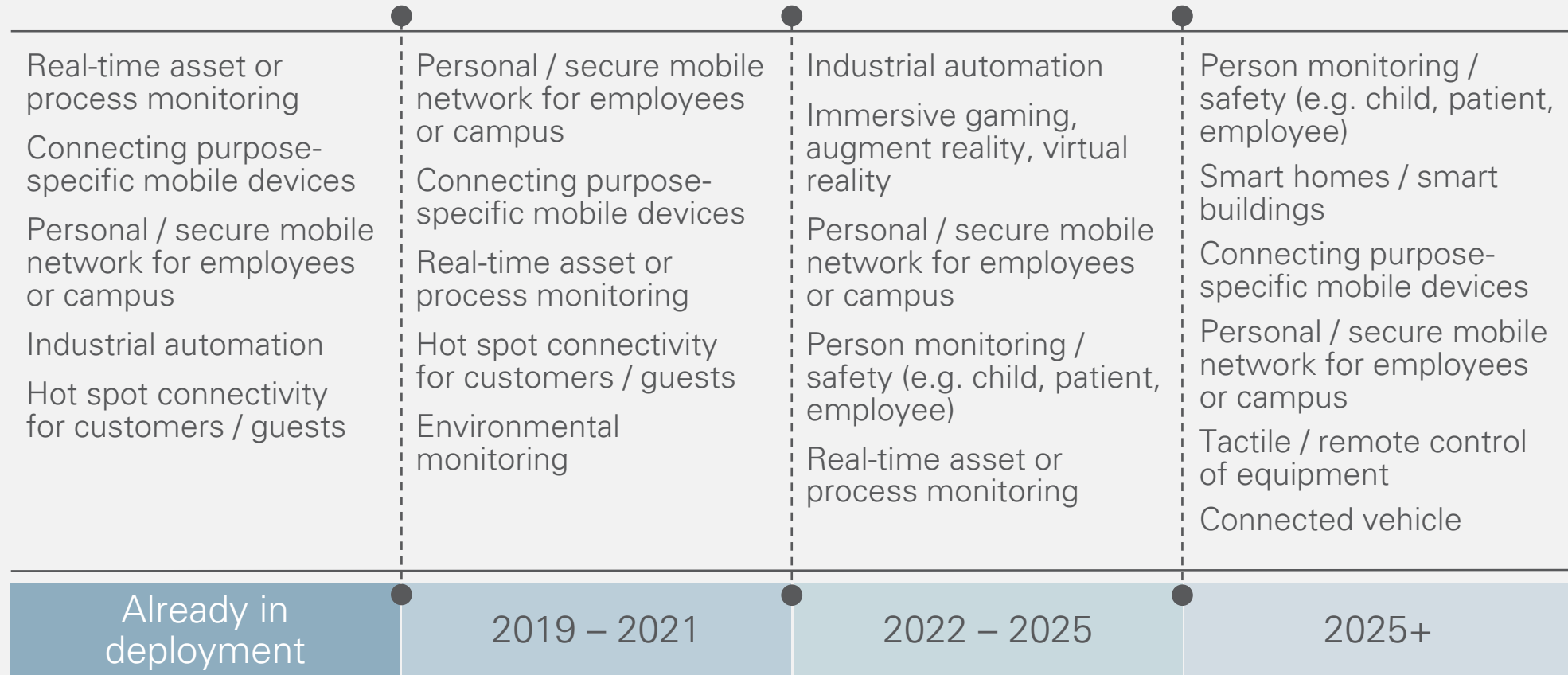


This can only be done with 5G
 5G would make this better: we will hold off until we can use 5G
 5G would make this better: but we will start with another technology
 5G is not necessary, we will do this with other technology
 Not sure

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



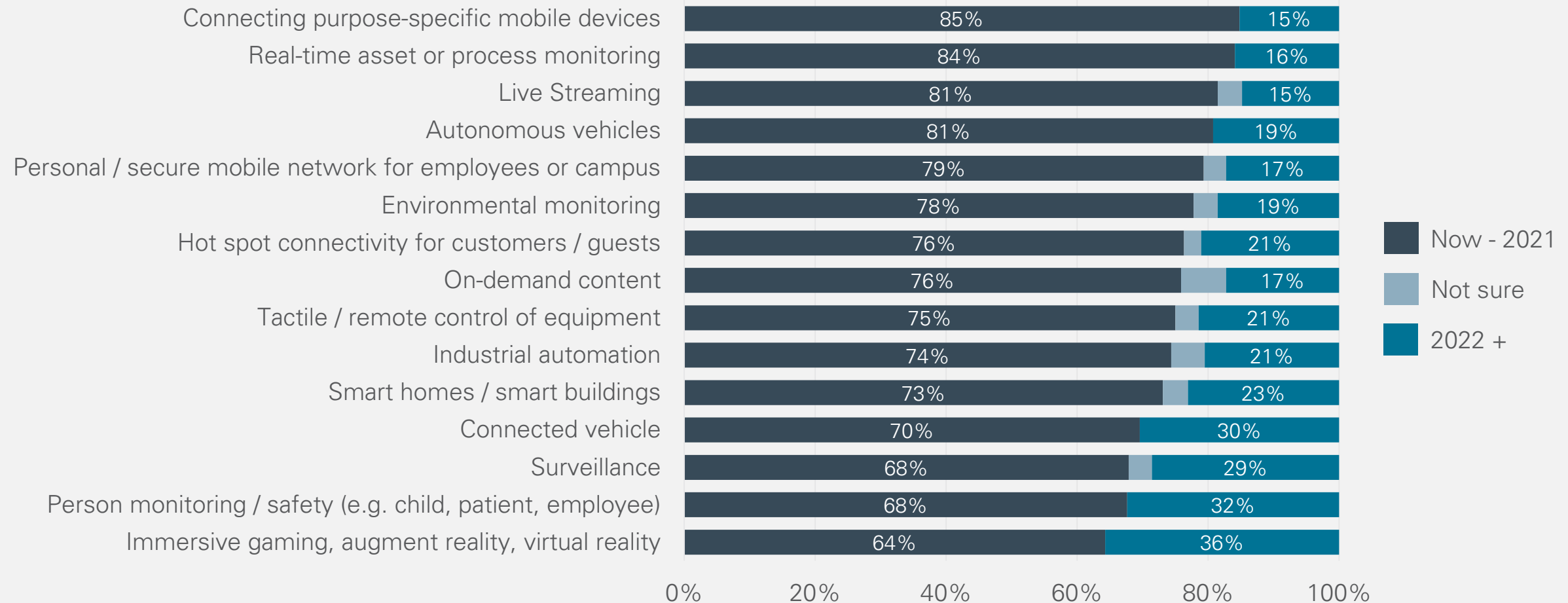
Top Solutions for Deployment by Year



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.

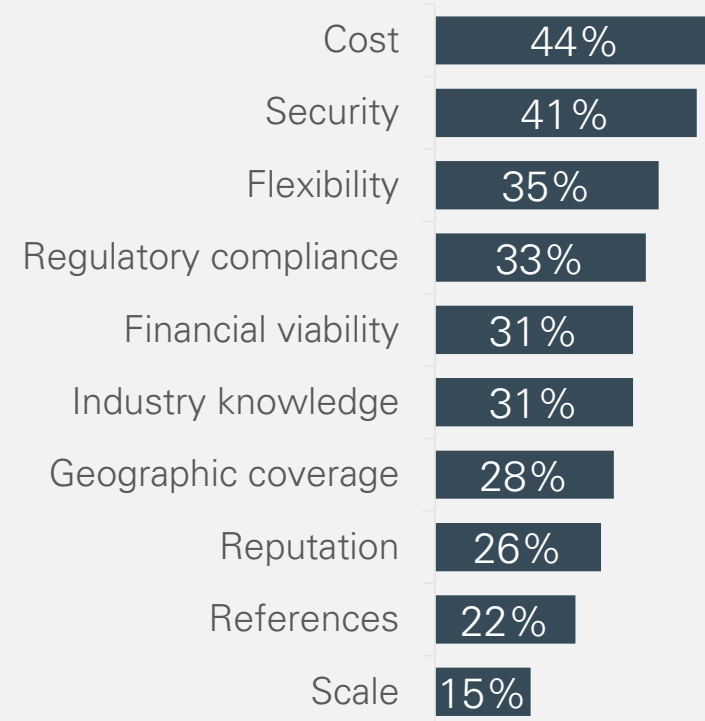
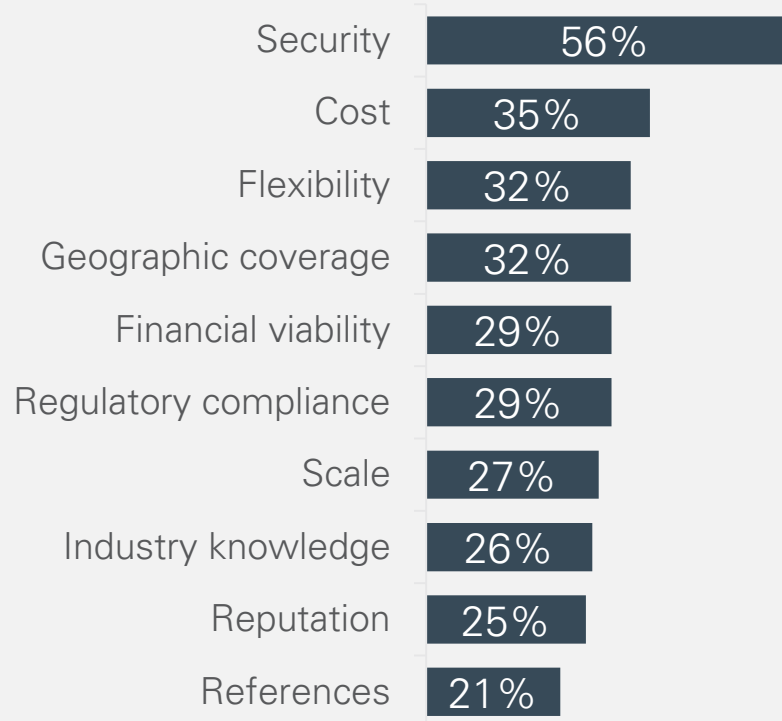
"We must work closely with Communication Service Providers to successfully deploy 5G network-enabled solutions"

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



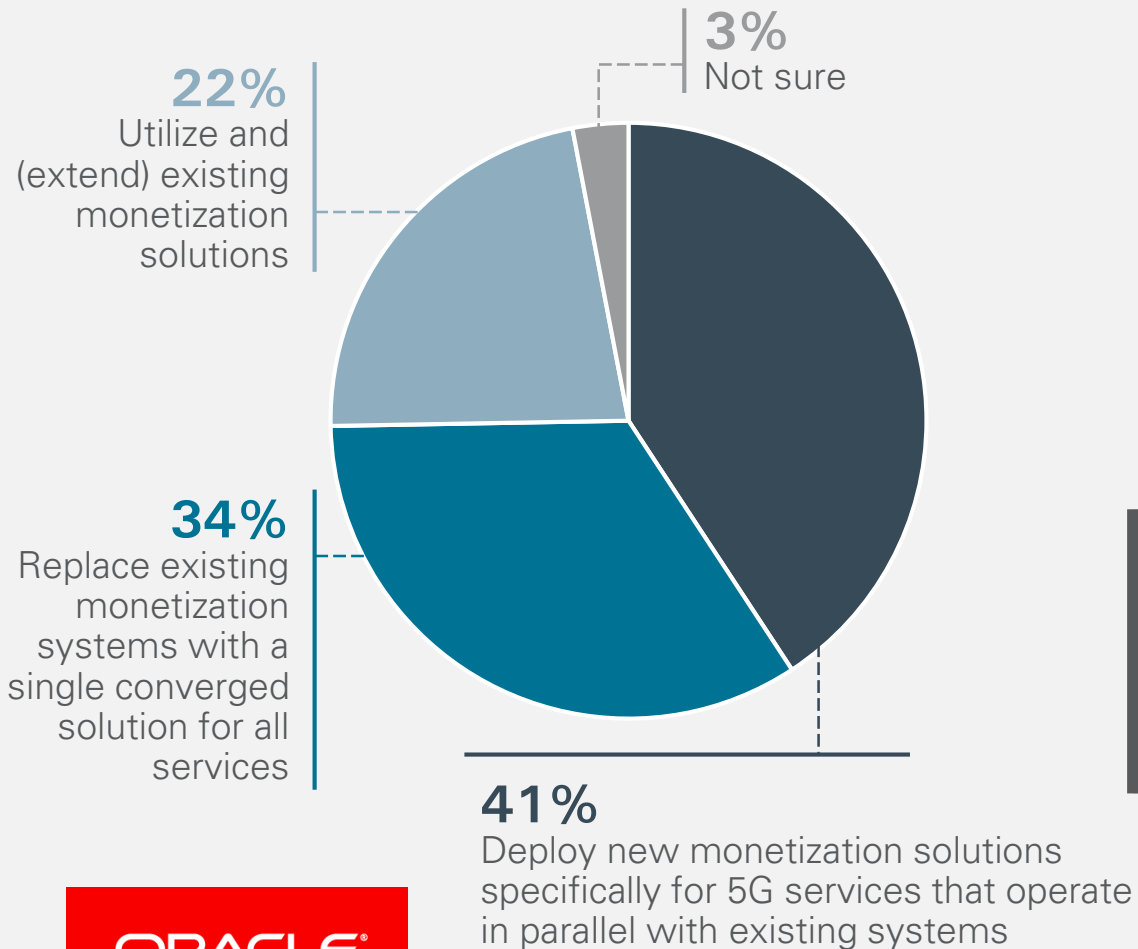
Top-3 Ranked Selection Criteria for “aaS” Solutions (IT respondents)

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



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

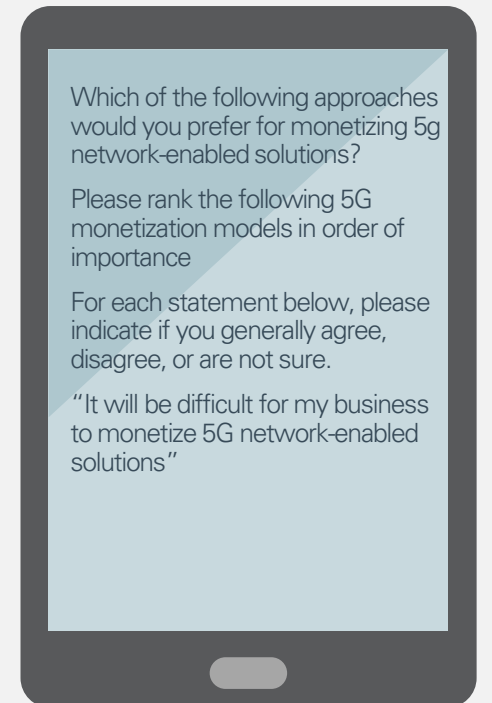
Preferred 5G Monetization Approach



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

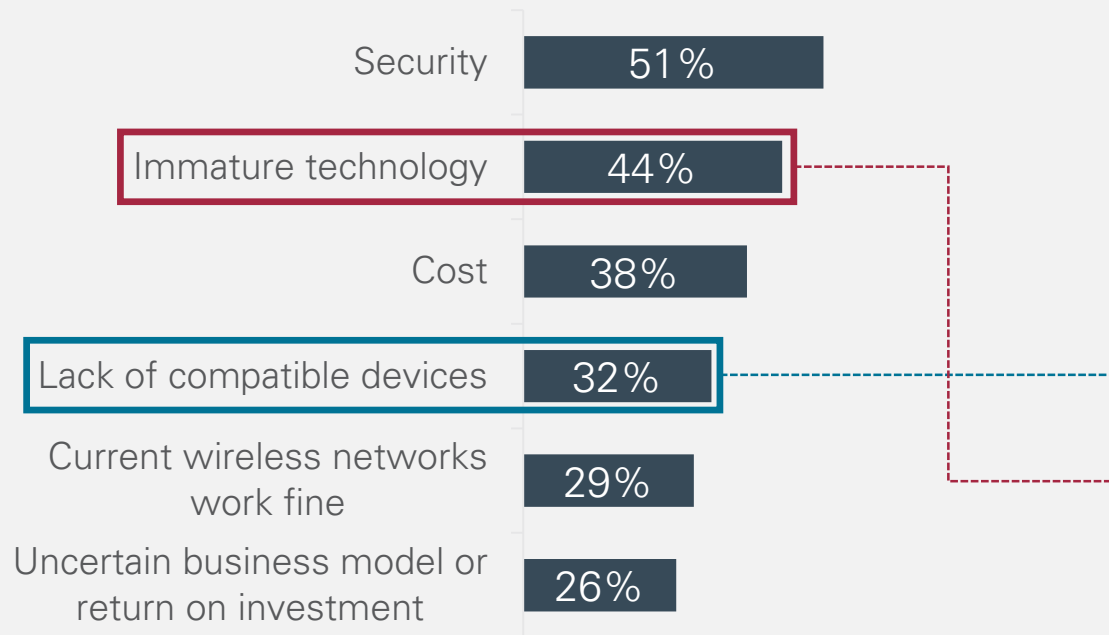
50% of respondents believe that they will **have difficulty monetizing solutions** built on 5G network technology



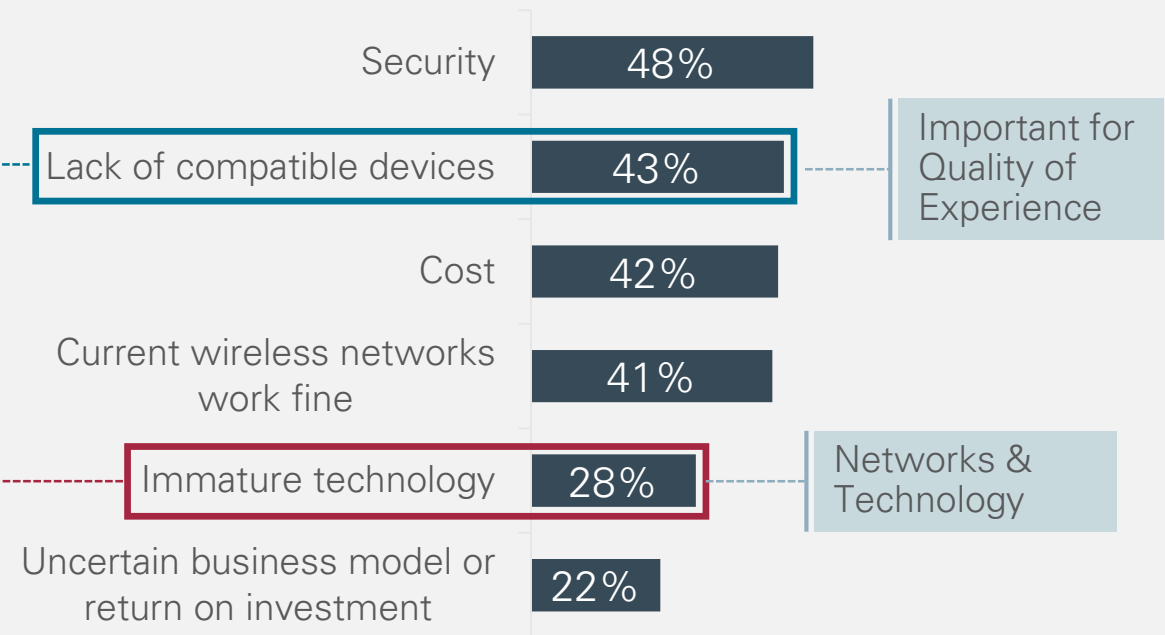
IT and business respondents have differing concerns, however agree that security is a top priority regarding 5G solutions

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)



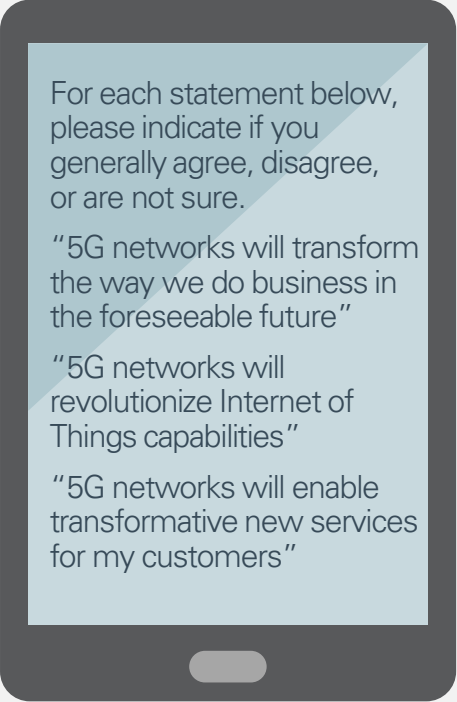
Important for Quality of Experience

Networks & Technology



* IT respondents refers to those that selected IT, Network or Telecommunications as their primary job responsibility area

Enterprises recognize the transformative power of 5G networks



84%

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

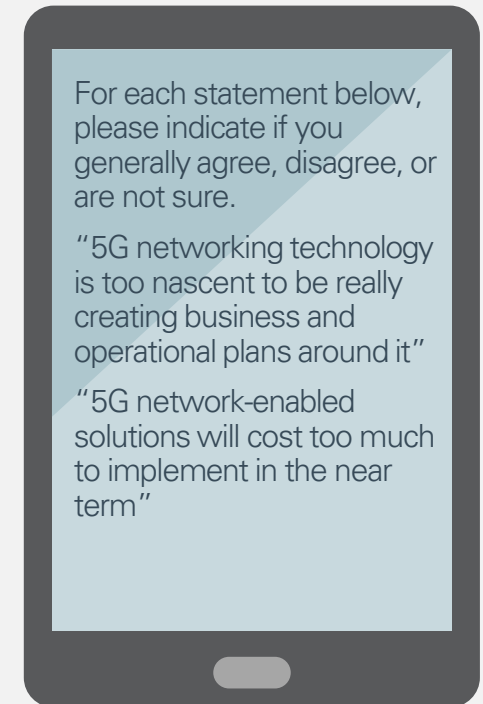
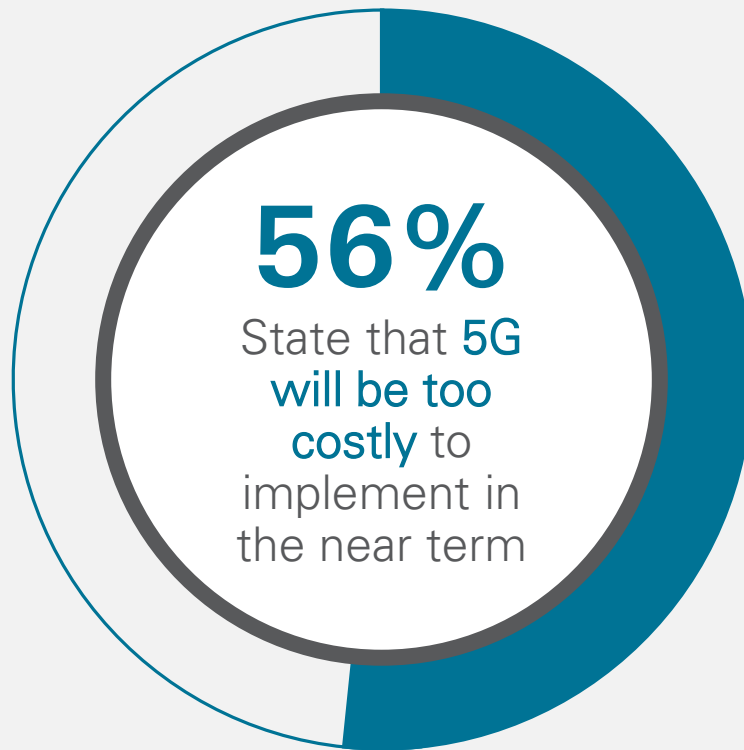
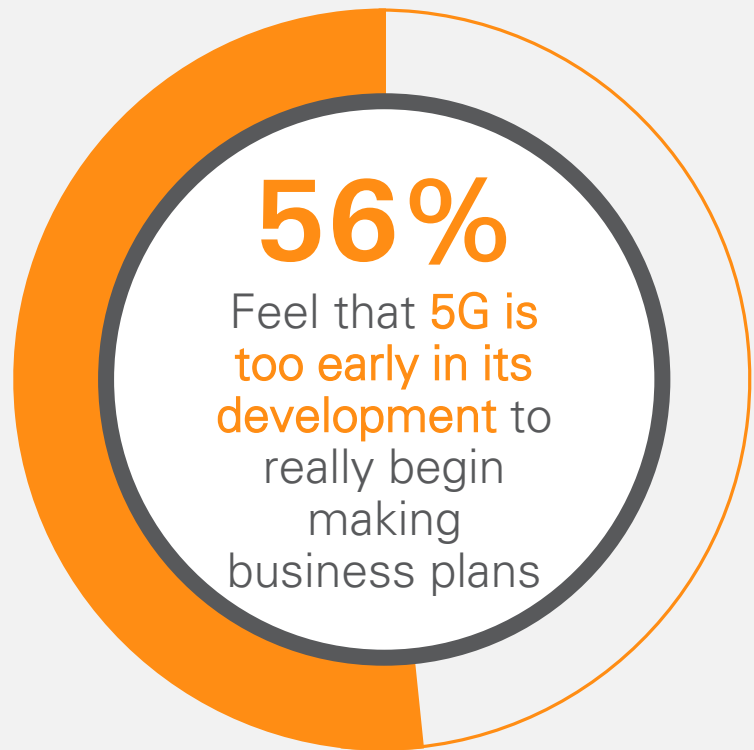
73%

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 improvements made possible by 5G
- IT respondents care more about the network technologies and the internal efficiencies enabled by 5G

Timing of solution deployment will evolve with 5G capabilities:

- 40-60% will hold off on deploying solutions until 5G capabilities are ready
- Nearly 50% of Business respondents expect more advanced solutions to be deployed beginning in 2022
- 77-81% expect to be deploying basic connectivity solutions already by 2021

Enterprises are still a little cautious when it comes to 5G:

- More than half of respondents feel that 5G is too nascent for proper planning, may be too expensive
- 50% believe that it may prove difficult to monetize 5G-enabled solutions

How to procure 5G capabilities is still a bit of an open question:

- An ecosystem is required for 5G solutions, but how that ecosystem will be structured remains undetermined
- Capitalized hardware and software seems to be the preferred model for connectivity, applications, and devices
- Enterprise views about preferred vendors are mixed

Integrated Cloud

Applications & Platform Services

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