

GSMA Intelligence Enterprise in Focus

IoT and eSIM for digital industries: navigating enterprise needs, investments and supplier decisions

DATE

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GSMA

The GSMA is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change. Our vision is to unlock the full power of connectivity so that people, industry and society thrive. Representing mobile operators and organisations across the mobile ecosystem and adjacent industries, the GSMA delivers for its members across three broad pillars: Connectivity for Good, Industry Services and Solutions, and Outreach. This activity includes advancing policy, tackling today's biggest societal challenges, underpinning the technology and interoperability that make mobile work, and providing the world's largest platform to convene the mobile ecosystem at the MWC and M360 series of events.

We invite you to find out more at www.gsma.com

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GSMA Intelligence

GSMA Intelligence is the definitive source of global mobile operator data, analysis and forecasts, and publisher of authoritative industry reports and research. Our data covers every operator group, network and MVNO in every country worldwide – from Afghanistan to Zimbabwe. It is the most accurate and complete set of industry metrics available, comprising tens of millions of individual data points, updated daily.

GSMA Intelligence is relied on by leading operators, vendors, regulators, financial institutions and third-party industry players, to support strategic decision-making and long-term investment planning. The data is used as an industry reference point and is frequently cited by the media and by the industry itself.

Our team of analysts and experts produce regular thought-leading research reports across a range of industry topics.

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The rise of digital industries

GSMA Intelligence's Global Digital Transformation Survey

- 1** **Digital transformation objectives: revenue generation over cost savings.** There is a consensus among enterprises that digital transformation brings several benefits, with enhanced security the most important. Beyond security, revenue-related objectives are deemed slightly more important than cost-related objectives. For suppliers of digital transformation technologies, B2B messaging should increasingly highlight how use of technology can support enterprises' revenue objectives (ideally pointing to successful examples). Security benefits should always be part of the messaging too.
- 2** **Spend on digital transformation: 10% of revenues.** On average across the 10 sectors and 21 countries surveyed, enterprise spend on digital transformation will account for 9.2% of enterprise revenue during 2024–2026, growing to 10.8% during 2027–2030. The average for 2024–2030 will be 10%. While B2B is a competitive market, the scale of enterprise spend is considerable, providing new business opportunities to all categories of supplier, including operators.
- 3** **Top areas of spend: connectivity and AI.** Connectivity (mobile and fixed) and associated devices will account for 21% of enterprise spend on digital transformation during 2024–2030, with mobile at 13% and fixed/Wi-Fi at 8%. Beyond connectivity, AI (14%) will see the biggest spend; this is unsurprising given the consensus among enterprises that AI will have a big impact across several business areas. Enhancing security, customer experience and worker productivity are seen as top areas of AI impact.
- 4** **Generalists over specialists.** For technologies beyond connectivity, enterprises work with a range of suppliers. Many have two or more suppliers (for each technology). However, generalists (hyperscalers and telecoms network/equipment vendors) are the top two preferred suppliers across most of the technologies (cybersecurity is an exception, with specialists leading due to the deep technology expertise required). This shows the power of global scale, larger sales teams and (almost) full-stack portfolios. It also explains why hyperscalers and telecoms network/equipment vendors are the most desired partners for other suppliers, including operators.
- 5** **Technology integration more important than ever.** Overall, enterprises of all sizes are eager to advance their digital transformation, making the necessary investments. However, supplier competition is fierce. As cost of implementation and complexity of tech integration (highly interrelated) are the top two deployment challenges faced by enterprises, the role of the tech orchestrator will become even more important (and demanded) in the future, providing a new opportunity for suppliers.

Digital transformation: how vertical sectors compare across three key aspects

Across three key aspects of digital transformation (objectives, current use of technologies, and spend during 2024–2030), all vertical sectors are eager to accelerate their digital transformation. An indication of this is the difference in the overall digital transformation score between the 1st and 10th vertical sectors, at just 11%.

Sectors where enterprises tend to have more direct and frequent engagement with consumers (e.g. financial services and media and entertainment) lead on digital transformation, as engagement with consumers increasingly shifts to digital.

Digital transformation ranking: vertical sectors

	Overall ranking
Financial services	1 st
Media and entertainment	2 nd
Utilities and energy	3 rd
Manufacturing and industrial sectors	4 th
Transportation, logistics and warehousing	5 th
Healthcare	6 th
Automotive and mobility	7 th
Retail	8 th
Public sector	9 th
Agriculture, forestry and fishing	10 th

Digital transformation objectives	Use of technologies enabling digital transformation	Spend on digital transformation (percentage of revenues)
4 th	1 st	1 st
7 th	3 rd	2 nd
1 st	2 nd	7 th
2 nd	4 th	4 th
6 th	6 th	5 th
8 th	5 th	6 th
3 rd	7 th	8 th
5 th	8 th	9 th
10 th	9 th	3 rd
9 th	10 th	10 th

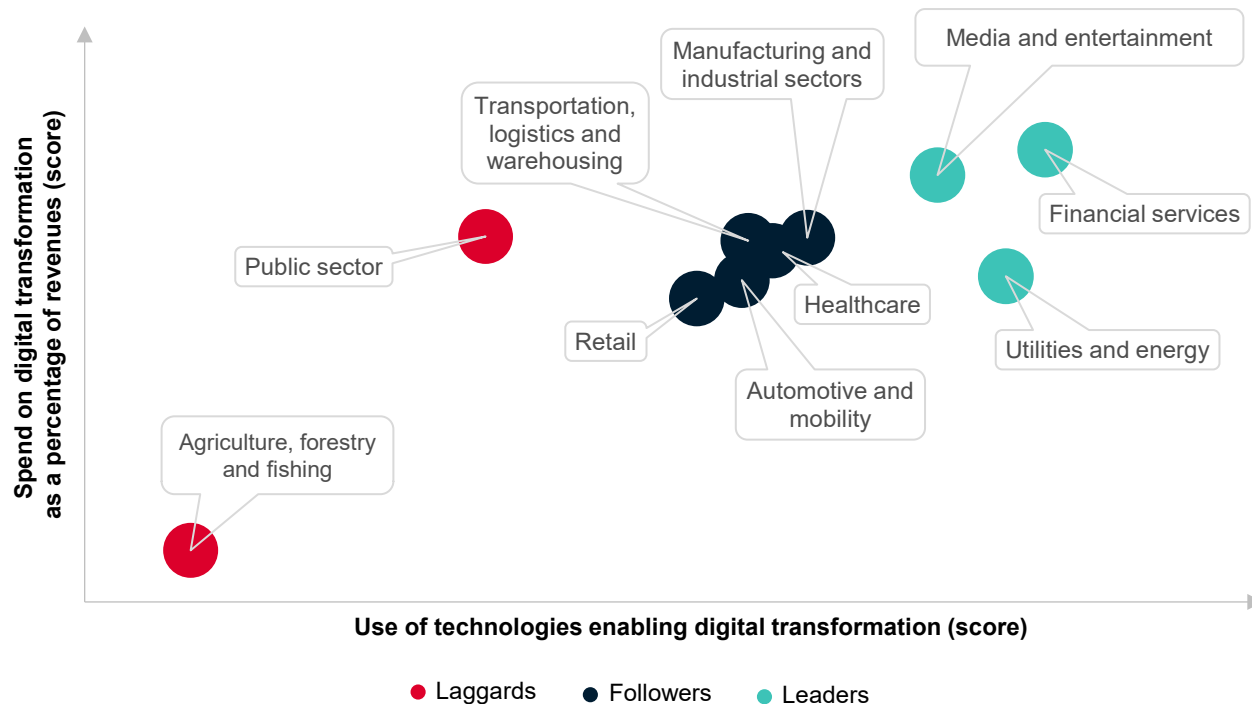
Methodology: For each vertical sector, GSMA Intelligence used data from the survey as an input to calculate a score for each of the three key aspects of digital transformation. The three individual scores then informed the overall score. All scores (individual and overall) have the same range.

Digital transformation of verticals: leaders, followers and laggards

Based on the three key aspects of digital transformation (objectives, current use of technologies, and spend during 2024–2030), GSMA Intelligence grouped the 10 vertical sectors into three categories: leaders, followers and laggards.

Of the three aspects, spend on digital transformation as a percentage of revenues shows the greatest variance among vertical sectors. While all sectors almost equally recognise the importance (and benefits) of digital transformation, investment budgets vary.

Laggards, followers and leaders in digital transformation



Ranking based on vertical-sector aggregate figures across the 21 countries surveyed. Bubble size represents score for digital transformation objectives.
Source: GSMA Intelligence Enterprise in Focus: Global Digital Transformation Survey 2024

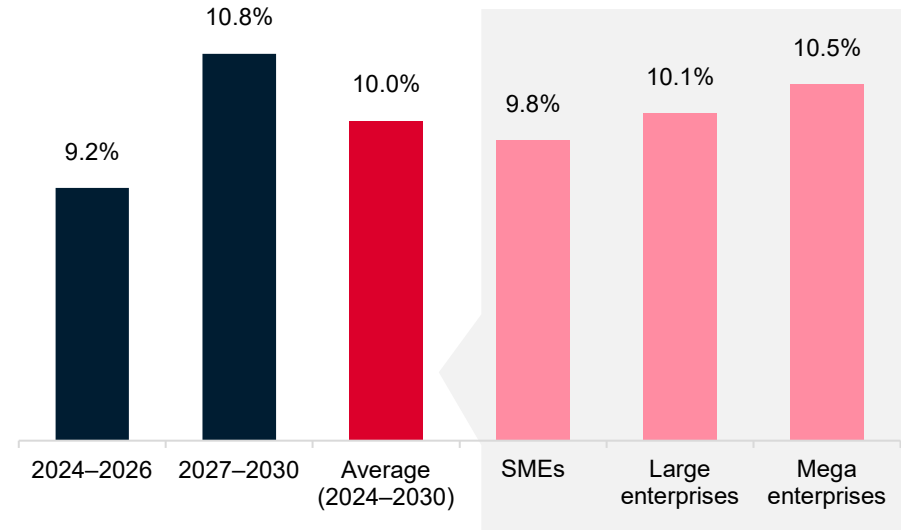
Enterprise spend on digital transformation is on the rise, providing business opportunities to suppliers

- **Spend accounts for 10% of revenues.** On average across the 10 vertical sectors and 21 countries surveyed, enterprise spend on digital transformation will account for 9.2% of enterprise revenues during 2024–2026, growing to 10.8% during 2027–2030. The average for 2024–2030 will be 10%.
- **The bigger the enterprise, the bigger the spend.** As expected, mega enterprises (those with 10,000 or more employees) will spend more on digital transformation than SMEs (20–249 employees). This likely reflects the implementation of bigger, and in some cases multi-country, digital transformation projects. Large enterprises (250–9,999 employees) are in between. However, variation in spend as a percentage of revenues for the three categories of enterprise size is not as big as might be expected. SMEs are eager to catch up on digital transformation, addressing some of their existing gaps.
- **Major gaps exist.** There is currently a gap of nearly 20 pp between SMEs and mega enterprises when it comes to percentage of enterprises making advanced use of cloud technology. The gap is more than 10 pp for other technologies enabling digital transformation, such as IoT and cybersecurity. Interestingly, when it comes to making advanced use of generative AI (genAI), the gap is smaller (5 pp), suggesting that AI is a top priority for all. SMEs spending 9.8% of their revenues on digital transformation during 2024–2030 should help address these gaps.

Spend on digital transformation as a percentage of revenues

Average figures across all vertical sectors and countries

Base: all enterprises undertaking digital transformation



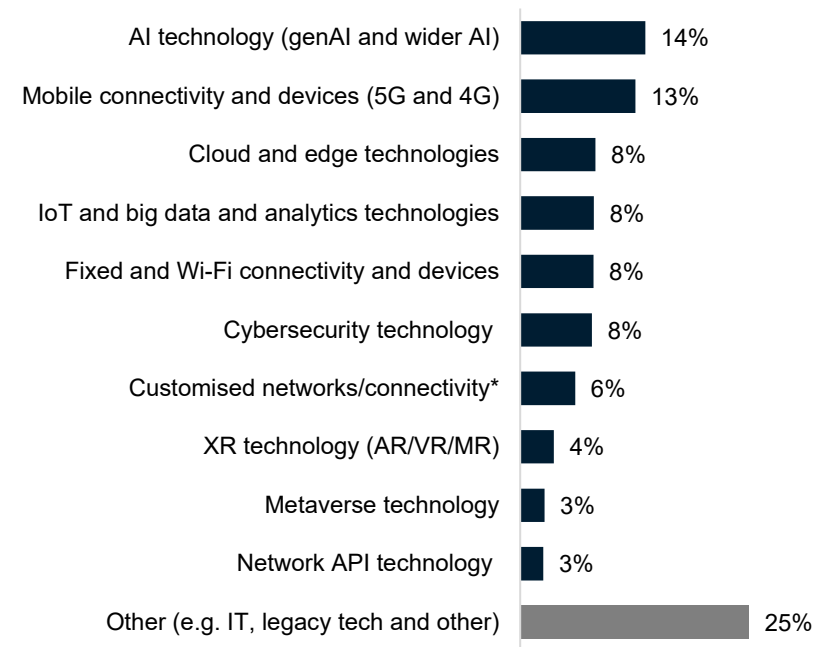
Connectivity and AI will be the top two areas of enterprise spend on digital transformation

- **Connectivity leads.** Connectivity (mobile and fixed) and associated devices will account for 21% of enterprise spend on digital transformation during 2024–2030, with mobile at 13% and fixed/Wi-Fi at 8%. Within mobile, 5G will increasingly replace 4G (with 5G spend 2.5× higher than 4G spend).
- **AI on the rise.** AI will be the technology beyond connectivity that captures the biggest spend during 2024–2030 (14%). AI's share of total spend will grow from 13% during 2024–2026 to 15% during 2027–2030. This is unsurprising, given the consensus among enterprises that AI will have a big impact across several business areas. However, it also shows some hype around AI.
- **Comparisons may not be like for like.** For example, connectivity, cloud and cybersecurity typically involve recurring spend (e.g. monthly subscriptions), whereas other technologies may have different and less recurring forms of spend. Some technologies also involve an initial investment that may be costly; for example, customised networks are not widespread but have an average figure of 6% due to the initial investment of deploying a private wireless network. There could be spend overlap between technologies, especially when enterprises work with generalist suppliers across a range of technologies that could be billed as an integrated digital transformation package. Finally, some technologies could include built-in connectivity access.

Spend on digital transformation by technology (2024–2030)

Average figures across all vertical sectors and countries

Base is all enterprises undertaking digital transformation



Related reading: full report on the rise of digital industries (based on the Global Digital Transformation Survey)

A full [report](#) analyses the key findings and implications across different aspects of enterprise digital transformation, including strategic objectives, investment plans and priorities, deployment challenges and supplier decisions. The report provides insights into a range of technologies enabling digital transformation such as 5G, private networks, AI, cloud, edge, IoT, eSIM, cybersecurity, network APIs and more.

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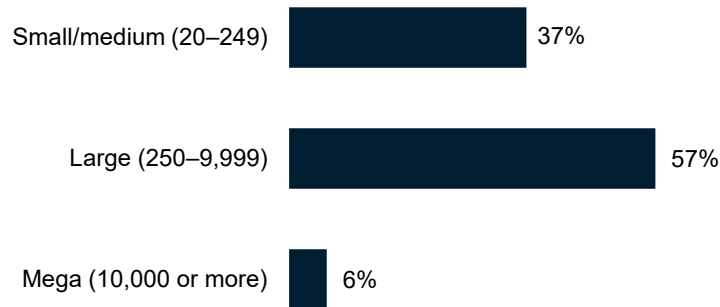
2 Survey details

3 Focus on IoT and eSIM

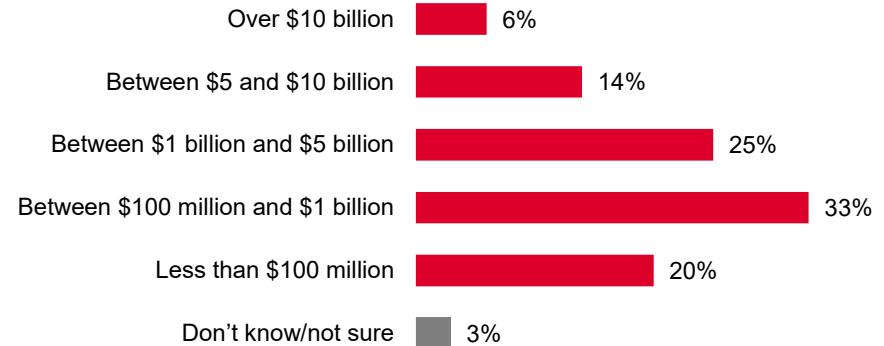
GSMA Intelligence Enterprise in Focus: Global Digital Transformation Survey 2024

- Between June and August 2024, GSMA Intelligence surveyed nearly 4,200 enterprises across 21 countries and 10 vertical sectors to gain insight into their digital transformation. For each enterprise, GSMA Intelligence targeted respondents who are either decision-makers for digital transformation plans/projects or provide recommendations to decision-makers.
- The survey focused on different aspects of digital transformation (strategic objectives, investment plans and priorities, deployment challenges, supplier decisions) and a range of technologies enabling digital transformation, including 5G, private networks, AI, cloud, edge, IoT, eSIM, cybersecurity and network APIs.
- This report analyses the key findings and implications. The accompanying dashboard provides full survey data with filters for vertical sectors, countries, size of organisation, state of digital transformation and more.

Survey breakdown by organisation size (number of employees)



Survey breakdown by organisation revenues



Global Digital Transformation Survey 2024

Vertical sectors and countries in focus

Vertical sectors	Countries			
	Asia Pacific	Europe	Middle East and North Africa	Americas
Manufacturing and industrial sectors				
Transportation, logistics and warehousing				
Automotive and mobility				
Utilities and energy				
Financial services				
Healthcare				
Retail				
Media and entertainment				
Agriculture, forestry and fishing				
Public sector				
	Australia	France	Egypt	Argentina
	China	Germany	Morocco	Brazil
	India	Italy	Saudi Arabia	Mexico
	Indonesia	Spain	South Africa	US
	Japan	UK	Türkiye	
	Kazakhstan			
	South Korea			

Global Digital Transformation Survey 2024

10 vertical sectors in focus, with 4,182 enterprises surveyed

Vertical sectors (number of enterprises surveyed)	Sub-sectors
Manufacturing and industrial sectors (N=617)	Aerospace and defence; chemicals; construction and materials; mechanical and electrical engineering; industrial machinery and equipment; metals and mining; textiles, apparel, leather, footwear and luxury goods; consumer electronics; basic metals production; other areas in manufacturing and industrial sectors.
Transportation, logistics and warehousing (N=468)	Air freight and logistics; ground freight and logistics; maritime freight and logistics; warehousing and storage; third-party logistics; postal, courier and delivery services; supply chain and logistics technology; other areas in transportation, logistics and warehousing.
Automotive and mobility (N=363)	Manufacturing of passenger vehicles; manufacturing of commercial vehicles; electric and autonomous vehicles; auto parts and equipment; services and maintenance; airports and aviation; ports; railway; other areas in automotive and mobility.
Utilities and energy (N=339)	Electricity, gas or water; oil & gas; coal; renewables (wind, wave, solar); energy infrastructure, equipment and services; waste collection, treatment and disposal activities; mining and quarrying; other areas in utilities and energy
Financial services (N=599)	Banking; insurance; real-estate investment; asset management; private equity and venture capital; credit services; brokerage services; other areas in financial services.
Healthcare (N=430)	Healthcare providers and services; pharmaceuticals; biotechnology; life sciences tools and services; healthcare technology; medical devices and equipment; other areas in healthcare.
Retail (N=499)	Food, beverage and tobacco retailers; apparel retailers (clothes, footwear, accessories); consumer electronics retailers; furniture and homeware retailers; e-commerce; specialty retailers (jewellery, booking, sporting attire, plants, etc.); restaurants and bars; hotels; other areas in retail.
Media and entertainment (N=378)	Programming and broadcasting activities (radio and TV); film and television production/distribution; publishing; music; advertising and marketing; digital media; video games and e-sports; live entertainment; other areas in media and entertainment.
Agriculture, forestry and fishing (N=211)	Crop production; animal production; fishing; forestry; other areas in agriculture, forestry and fishing.
Public sector (N=278)	Public education; public healthcare; military and defence; law enforcement; public transportation; social services; other public services (e.g. justice and judicial activities, fire services); other areas in public sector.

Global Digital Transformation Survey 2024

21 countries in focus, with 4,182 enterprises surveyed

Countries (number of enterprises surveyed)

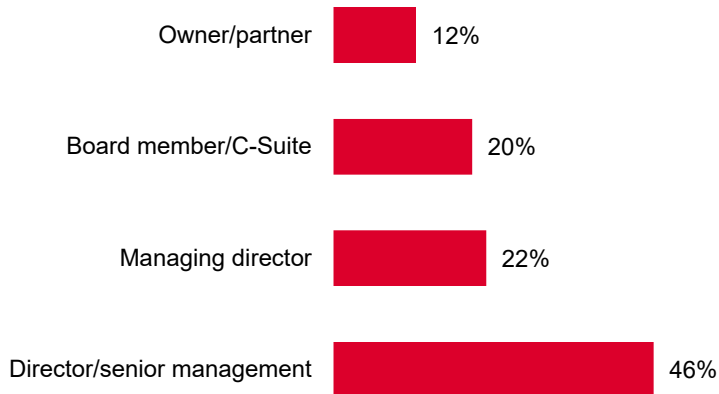
Asia	Europe	Middle East and Africa	Americas
Australia (N=126)	France (N=295)	Egypt (N=127)	Argentina (N=109)
China (N=387)	Germany (N=258)	Morocco (N=102)	Brazil (N=226)
India (N=250)	Italy (N=241)	Saudi Arabia (N=115)	Mexico (N=204)
Indonesia (N=157)	Spain (N=225)	South Africa (N=110)	US (N=370)
Japan (N=271)	UK (N=288)	Türkiye (N=111)	
Kazakhstan (N=100)			
South Korea (N=110)			

Global Digital Transformation Survey 2024

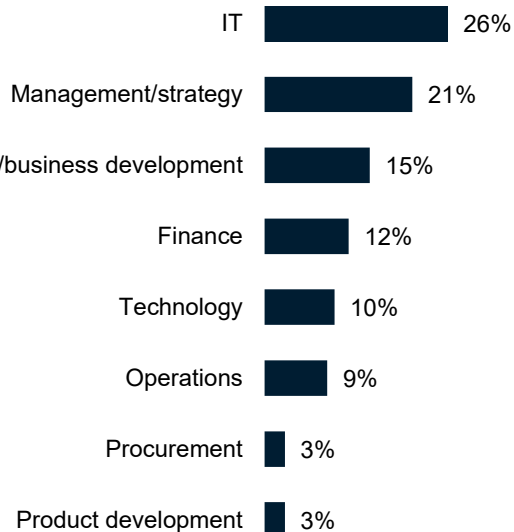
Respondent profile

For each enterprise, GSMA Intelligence targeted respondents who are either decision-makers for digital transformation plans/projects or provide recommendations to decision-makers.

Survey breakdown by respondent job level



Survey breakdown by respondent job function



Global Digital Transformation Survey 2024 Dashboard

The accompanying [dashboard](#) provides the full survey data – a valuable asset for companies looking to focus on specific vertical sectors, countries or customer size.

The dashboard includes filters for 10 vertical sectors, 21 countries, three sizes of organisation (SMEs, large enterprises and mega enterprises), state of digital transformation (full or partial), spend on digital transformation, and more.

Enterprise in Focus Global Digital Transformation Survey Dashboard

Survey conducted in June/August 2024

Instructions:

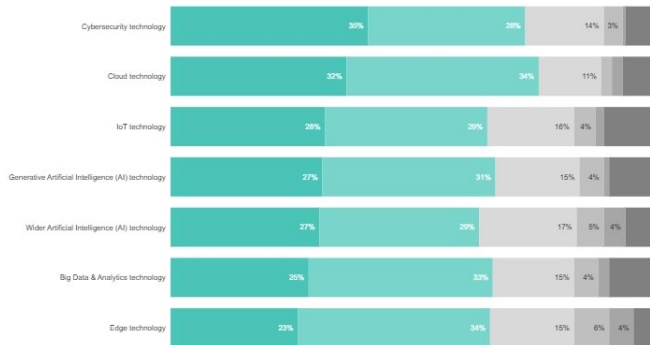
1. Select the dashboard that you wish to view from the list below, then apply filters to discover different views of the data.
2. To combine multiple filters in the same menu (e.g. a list of several countries), hold **Ctrl** while making the selection.
3. To reset a filter, hit the "Clear selections" at the top right of the filter field.

Percentages may not add up to 100%, due to rounding.

Contents

Enterprises undertaking Digital Transformation

- Digital Transformation overall
- IoT
- 5G and Private Networks
- AI
- Other Technologies



Filter selection:

- Vertical Sector**
 - Agriculture, Forestry and Fishing
 - Automotive and Mobility
 - Financial services
 - Healthcare
 - Manufacturing and Industrial Sectors
 - Media and Entertainment
 - Public Sector
 - Retail
 - Transportation, Logistics and Warehousing
 - Utilities and Energy
- Enterprise revenues (annual revenues in USD)**
 - Less than \$100 million
 - Between \$100 million and \$1 billion
 - Between \$1 billion and \$5 billion
 - Between \$5 billion and \$10 billion
 - Over \$10 billion
 - Don't know / Not sure
- Number of countries of operations**
 - One
 - 2-10
 - 11-49
 - 50 or more
 - Don't know / Not sure
- State of digital transformation (DT)**
 - Working on DT initiatives AND have a full DT plan
 - Working on DT initiatives BUT have no full DT plan
- Financial spending on digital transformation (DT) during 2024-2026 % of revenue**
 - 1-3%
 - 4-6%
 - 7-9%
 - 10-12%
 - 13-14%
 - 15% or more
 - Don't know
- Country**
 - Argentina
 - Australia
 - Brazil
 - China
 - Egypt
 - France
 - Germany
 - India
 - Indonesia
 - Italy
 - Japan
 - Kazakhstan
 - Mexico
 - Morocco
 - Saudi Arabia
 - South Africa
 - South Korea
 - Spain
 - Türkiye
 - UK
 - USA
- Enterprise size (number of employees)**
 - Large (250-9,999 employees)
 - Mega (10,000 or more employees)
 - Small/Medium (20-249 employees)
- Financial spending on digital transformation (DT) during 2027-2030 % of revenue**
 - 1-3%
 - 4-6%
 - 7-9%
 - 10-12%
 - 13-14%
 - 15% or more
 - Don't know

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IoT and eSIM: key takeaways and six numbers to note

Use of IoT technology

88%

IoT technology widely used across all vertical sectors

88% of enterprises undertaking digital transformation use IoT technology (36% make advanced use of it). This means that IoT is one of the most widely used technologies. Automotive and mobility and utilities and energy show the highest advanced use of IoT, followed by manufacturing and industrial sectors.

IoT deployment challenges

1st

Cost of implementation is the top challenge

Enterprises pointed to multiple challenges when deploying IoT technology, but cost of implementation scored first in all 10 sectors and in 15 of the 21 countries. Beyond cost, other challenges have similar scores: potential security vulnerabilities, complexity of tech integration and lack of internal expertise.

Suppliers of IoT technology

Over
40%

A diverse range of suppliers

While nearly 60% of enterprises work with hyperscalers, companies specialised in IoT and telecoms network/equipment vendors are also widely used as a supplier of IoT technology (by more than 40% of enterprises). IoT specialists are the main supplier to companies in the Automotive and mobility sector.

Benefits of working with operators on IoT

Top
2

Security and presence in local markets lead

Only 9% of enterprises have operators as a supplier of IoT tech, confirming they are mostly seen as a supplier of IoT connectivity (rather than of full IoT technology). The top two reasons for working with operators are their ability to provide secure solutions and their large presence in local markets.

Spend on IoT technology

17%

IoT as a top five area of spend

17% of enterprises selected IoT as one of their top five areas of digital transformation spend during 2024–2026, growing to 18% during 2027–2030. This means that IoT technology will account for 3.4% of the enterprise total spend on digital transformation during 2024–2030.

eSIM benefits

Over
75%

Security and scalability are seen as top eSIM benefits

Enterprises expect that by 2030 eSIM and iSIM will account for more than 75% of the total number of cellular IoT connections that they will use. Security and scalability are the top benefits that enterprises expect from eSIM, with simplifying and reducing logistical/manufacturing costs also seen as an important benefit.

IoT and eSIM: shifting from limited to advanced use of IoT while elevating eSIM to mainstream technology

- **Looking to advanced use of IoT.** While 88% of enterprises undertaking digital transformation use IoT technology, only 36% make advanced use of it. There is a desire among enterprises to boost adoption of IoT, but also a consensus that cost of implementation, security vulnerabilities and complexity of tech integration remain important challenges hindering IoT adoption at scale.
- **Spend should boost usage.** Shifting from limited to advanced use of IoT will likely be a key objective for many enterprises – a focus that requires further investment in the technology (devices, connectivity, platforms, security, applications). During 2024–2030, enterprises will spend 3% of their digital transformation budget on IoT technology. This spend provides new revenue opportunities for IoT suppliers. Helping enterprises address their IoT deployment challenges is key to capturing part of the new growth.
- **Multiple networks are in use.** IoT devices are diverse in nature, size, capability and connectivity requirements. As such, enterprises use more than 10 different types of network technologies for their IoT deployments. This will continue in the future. Our survey also shows that, compared to the more established technologies (e.g. Wi-Fi, 4G, 5G, LPWA), the new arrivals (e.g. RedCap and passive IoT) will be used by a smaller share of enterprises (10–20%). A knowledge gap will need to be addressed by vendors through enterprise education.
- **eSIM is set to scale.** eSIM has long been seen as an enabler of IoT deployments. However, beyond automotive, its adoption has yet to reach critical mass. The survey shows a general expectation that eSIM will scale in all sectors (accounting for 42% of the total IoT cellular market by 2030) and that security and scalability are the top benefits that enterprises expect from eSIM. Addressing the top challenge of cost of eSIM implementation will need to continue to be a focus for vendors of eSIM technology.

IoT deployment challenges (top three)

- 1) Cost of implementation
- 2) Potential security vulnerabilities
- 3) Integration with other technologies

eSIM market share in the IoT cellular market by 2030

Enterprises expect eSIM to account for 42% of the total IoT cellular market (iSIM 34% and traditional/removable SIM 24%).

Enterprise spend on IoT during 2024–2030

IoT will account for 3% of total enterprise spend on digital transformation.

IoT and eSIM: implications for suppliers of IoT and eSIM technologies (devices, connectivity, platforms, applications)

1

Find the right balance for a B2B focus (sales, operational resources), as existing customers and new prospects are equally important. Many existing customers are aiming for more advanced use of IoT, which will drive spend (**see page 21**).

2

Focus B2B messaging on how IoT solutions can address the top three deployment challenges faced by enterprises when deploying IoT: cost of implementation, potential security vulnerabilities and complexity of technology integration (**see page 25**).

3

Educate enterprise customers on the benefits of the new IoT technologies such as RedCap and passive IoT, as there is a knowledge gap that could hinder enterprise adoption at scale (**see page 27**).

4

Leverage the enhanced eSIM IoT technical specifications to help enterprises overcome the IoT interoperability and cost challenges (**see page 38**).

5

Be mindful that eSIM and iSIM are not an either/or scenario. Both are valid options that will co-exist for years to meet the specific requirements of varied IoT use cases (**see page 35**).

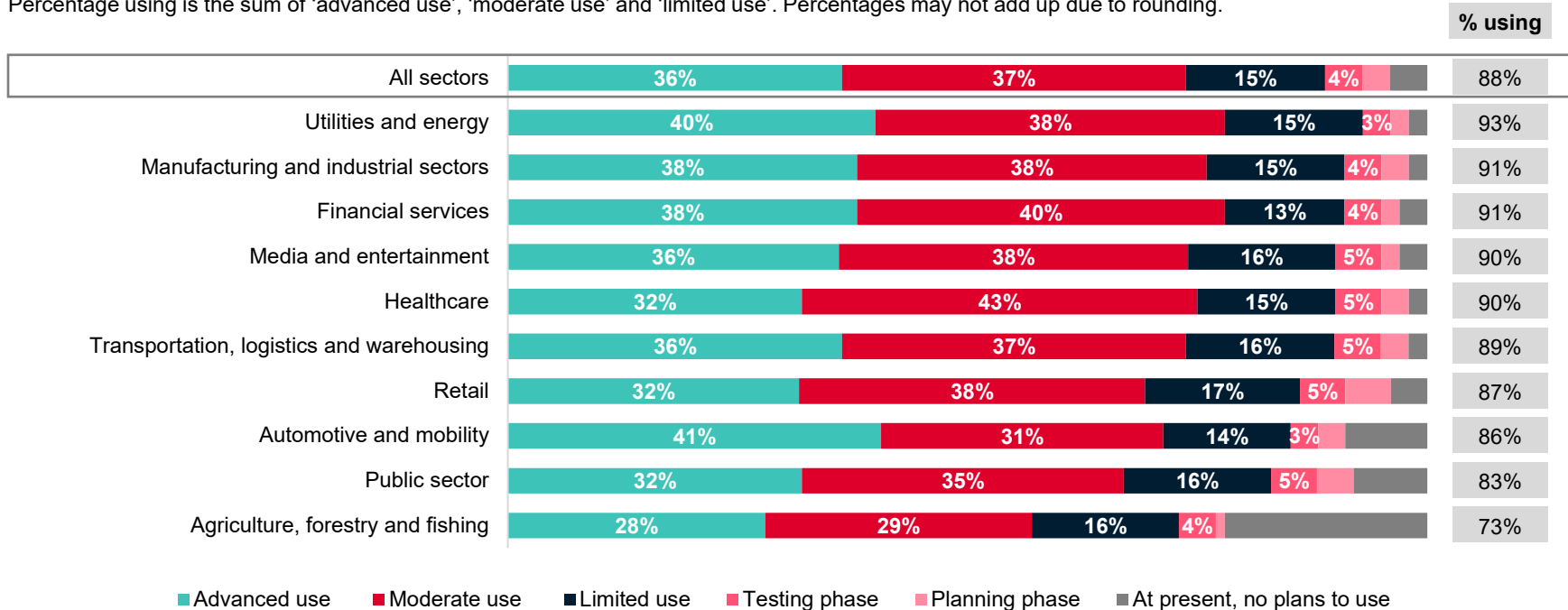
Nine out of 10 enterprises undertaking digital transformation use IoT, making it one of the most widely used technologies

IoT technology: state of use

As part of your company's digital transformation, where are you in the process of using IoT technology?

Aggregate figures across all countries surveyed. Base is all enterprises undertaking digital transformation. Percentage of respondents.

Percentage using is the sum of 'advanced use', 'moderate use' and 'limited use'. Percentages may not add up due to rounding.

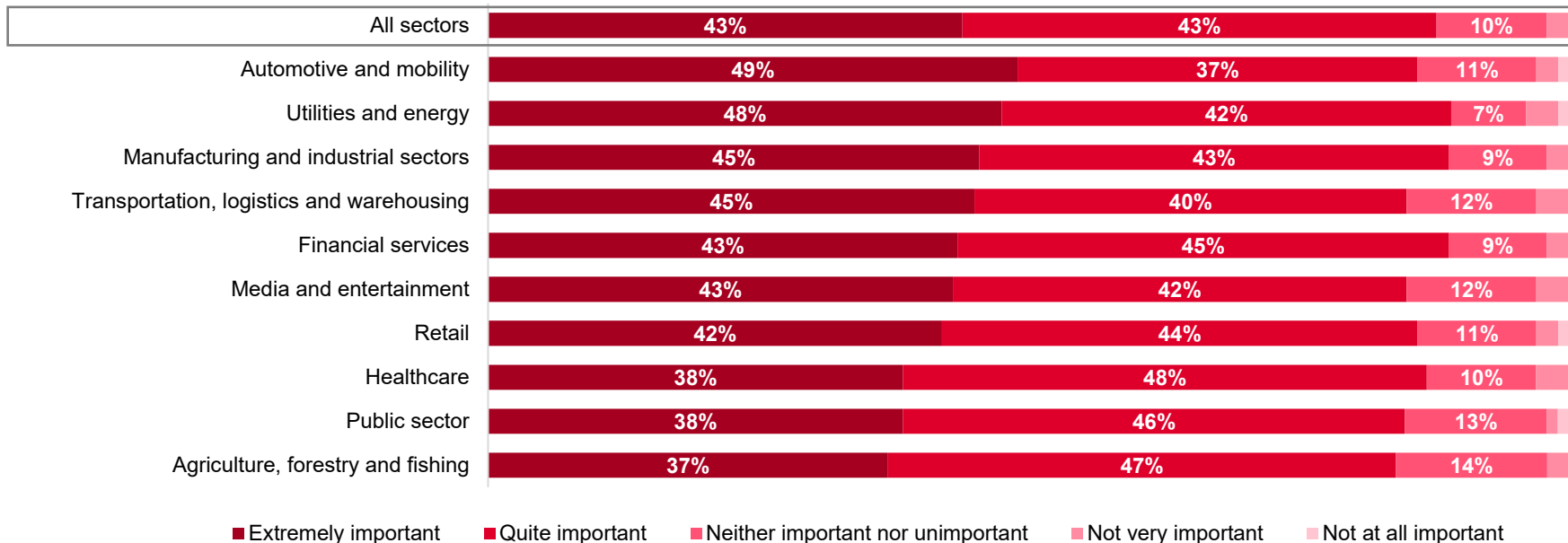


No matter the vertical sector, the importance of IoT to the success of digital transformation is widely recognised

Importance of IoT technology to the success of digital transformation

How important is using IoT technology to the success of your company's digital transformation?

Aggregate figures across all countries surveyed. Percentage of respondents. Base is all enterprises that are already using or testing/planning to use IoT technology. Percentages may not add up due to rounding.



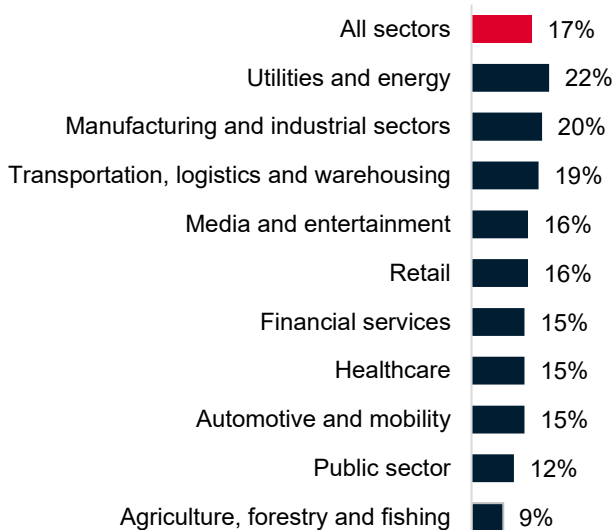
One out of six enterprises place IoT as a top five area of spend to support digital transformation

Spend on IoT technology

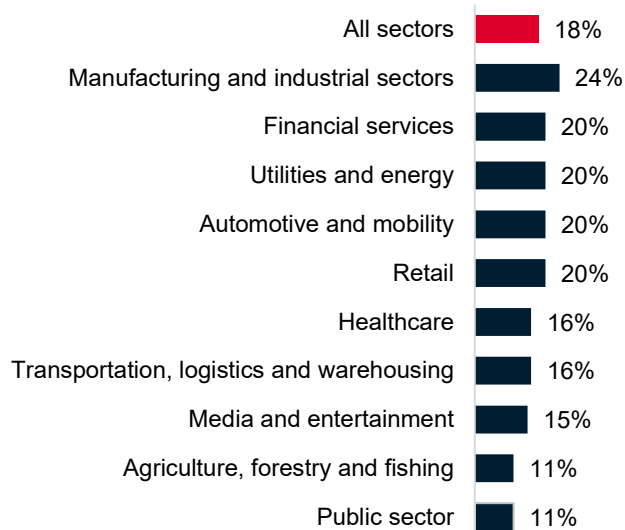
As part of the spend that your company is making to support your company's digital transformation, in which technologies do you expect your company to make the greatest spend?

Aggregate figures across all countries surveyed. Base is all enterprises undertaking digital transformation. Respondents could select up to five technologies (ranked from 1st to 5th). Figures represent the total percentage of respondents picking IoT technology as one of their top five areas of spend.

During 2024–2026



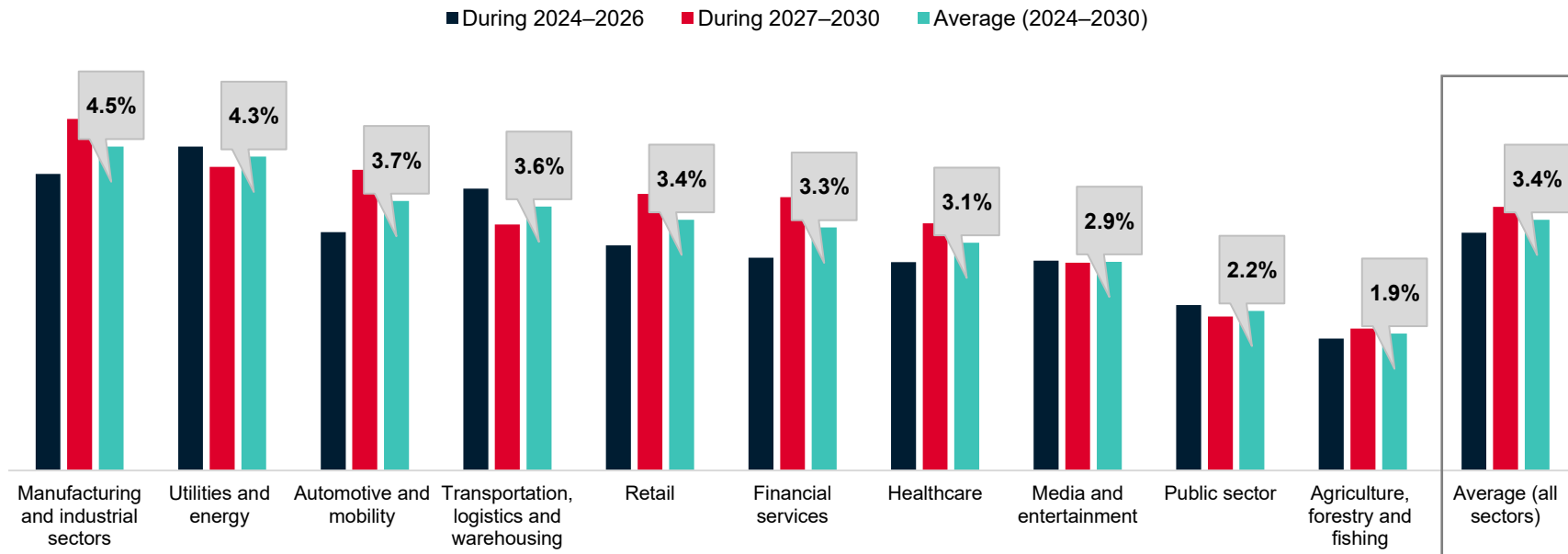
During 2027–2030



IoT will account for 3.4% of the enterprise total spend on digital transformation during 2024–2030

Spend on IoT technology

Aggregate figures across all countries surveyed. Spend on IoT technology as a percentage of total spend on digital transformation (based on GSMA Intelligence analysis of survey data).



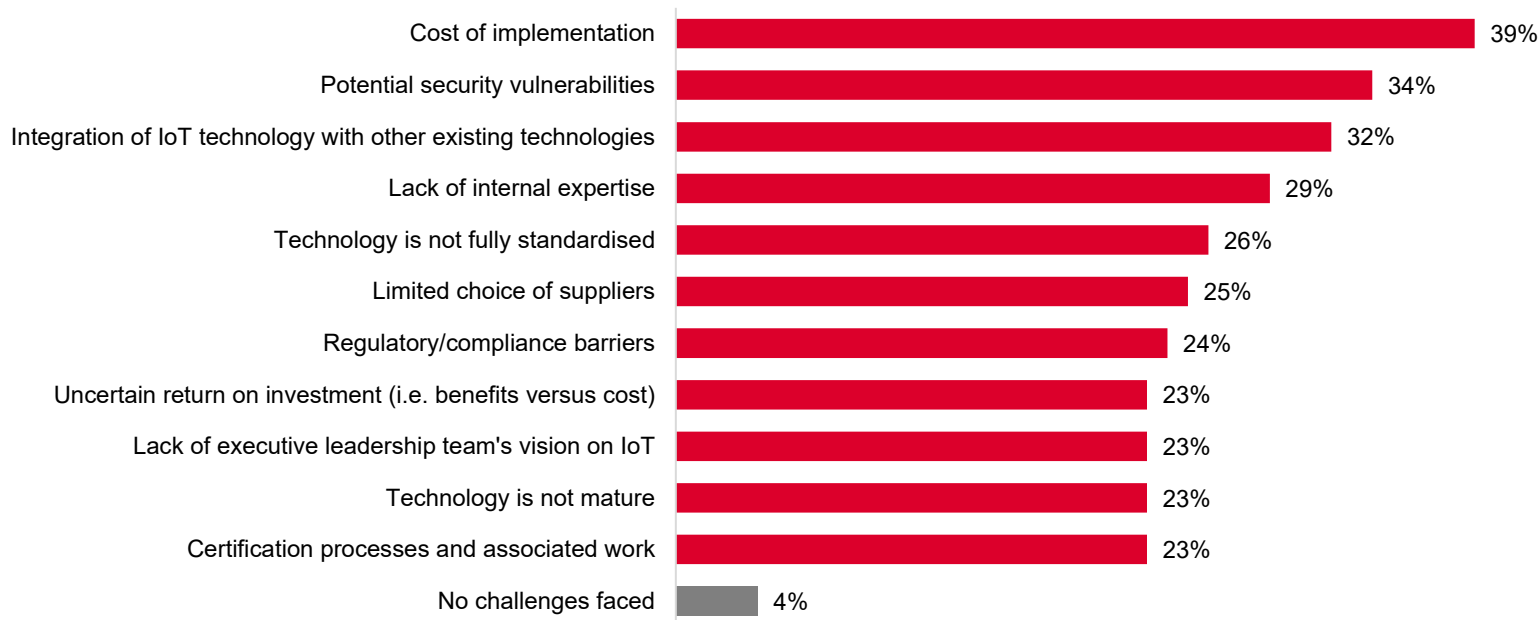
Cost of implementation, security vulnerabilities and complex tech integration are the top IoT deployment challenges

IoT deployment challenges

What are the challenges that your company has faced or currently faces when deploying IoT technology?

Aggregate figures across all countries and vertical sectors surveyed. Base is all enterprises that are already using or testing IoT technology.

Percentage of respondents. Respondents could select all that apply.

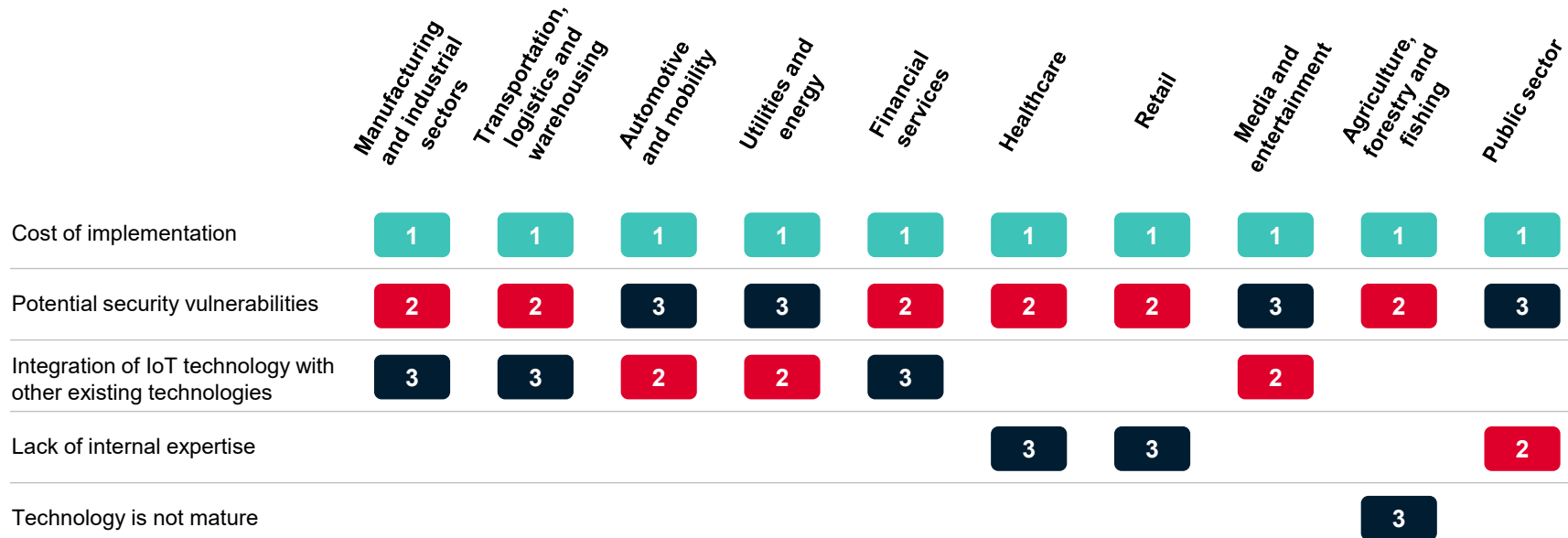


The top three IoT deployment challenges vary by vertical sector, but cost of implementation leads in all cases

Top three IoT deployment challenges by vertical sector

What are the challenges that your company has faced or currently faces when deploying IoT technology?

Aggregate figures across all countries surveyed. Base is all enterprises that are already using or testing IoT technology.



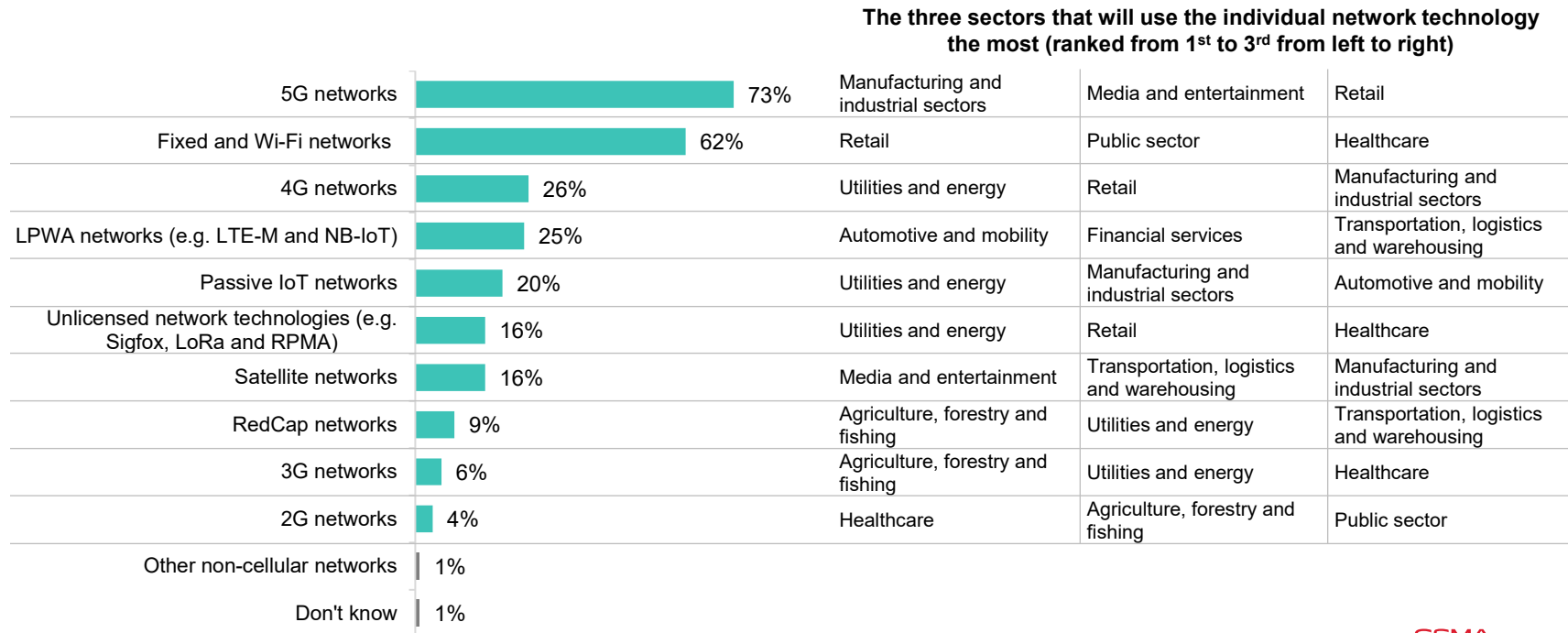
Enterprises will use a diverse range of network technologies for IoT, as use cases have different requirements

Use of IoT network technologies

What type of IoT network technologies does your company expect to use in the future for your company's IoT deployments?

Aggregate figures across all countries and vertical sectors surveyed. Base is all enterprises that are already using or testing/planning to use IoT technology.

Percentage of respondents. Respondents could select all that apply.



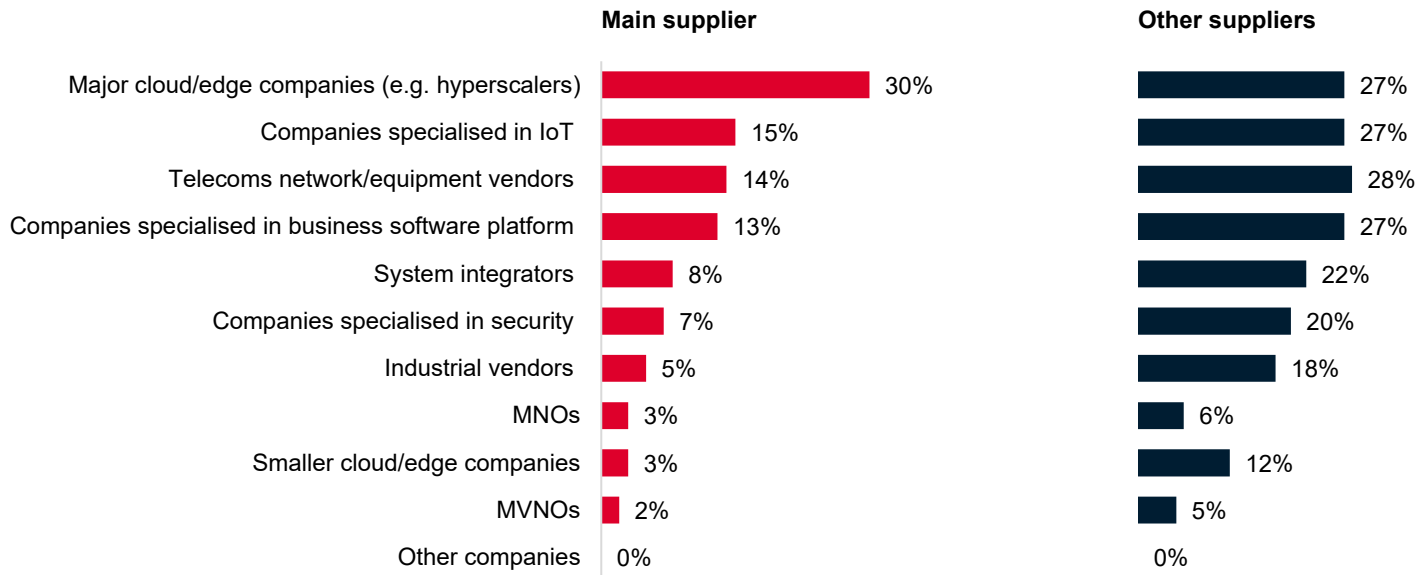
Enterprises see hyperscalers as the top supplier of IoT technology, followed by IoT specialists and telecoms vendors

Suppliers of IoT technology

Thinking about your company's IoT deployments or trials, who is the main company supplying IoT technology to your company and who are other companies supplying IoT technology to your company?

Aggregate figures across all countries and vertical sectors surveyed. Base is all enterprises that are already using or testing IoT technology.

Percentage of respondents. For 'main supplier', respondents could select one answer only. For 'other suppliers', respondents could select all that apply.



Only 9% of enterprises have operators as suppliers of IoT tech, confirming they play a connectivity role only

Top three suppliers of IoT technology by vertical sector and mobile operator score (%)

Thinking about your company's IoT deployments or trials, who is the main company supplying IoT technology to your company and who are other companies supplying IoT technology to your company?

Aggregate figures across all countries surveyed. Base is all enterprises that are already using or testing IoT technology. Ranking is based on the total percentages of respondents that selected a given category of supplier as either their 'main supplier' or 'other supplier' of IoT technology.

	Manufacturing and industrial sectors	Transportation, logistics and warehousing	Automotive and mobility	Utilities and energy	Financial services	Healthcare	Retail	Media and entertainment	Agriculture, forestry and fishing	Public sector
Major cloud/edge companies (e.g. hyperscalers)	1	1	2	1	1	1	1	1	2	1
Companies specialised in IoT	3		1	2	2		3		1	3
Telecoms network/equipment vendors		2	3	3	3	2	2	2	3	2
Companies specialised in business software platforms	2	3				3		3		
Percentage of enterprises that selected MNOs as a supplier of IoT technology (either as 'main supplier' or 'other supplier')	9%	9%	7%	9%	6%	10%	8%	9%	9%	8%

The top two reasons for using operators as a supplier of IoT tech are security expertise and large local presence

Reasons for using operators as a supplier of IoT technology

You said that MNOs are suppliers of IoT technology to your company. Why is this?

Aggregate figures across all countries and vertical sectors surveyed. Base is all enterprises that use MNOs as a supplier of IoT technology (either 'main supplier' or 'other supplier'). Percentage of respondents. Respondents could select up to five reasons (ranked from 1st to 5th).

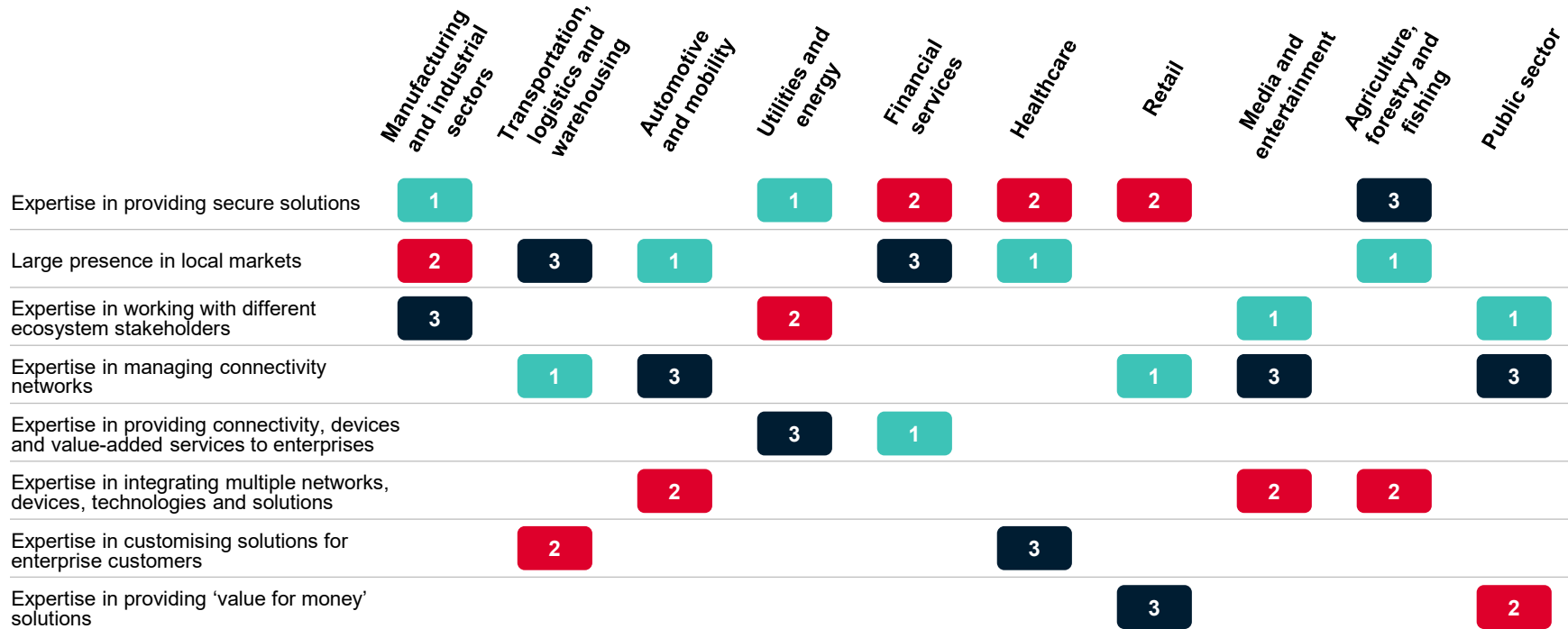


The top three reasons for using operators as a supplier of IoT technology vary significantly by vertical sector

Top three reasons for using operators as a supplier of IoT technology by vertical sector

You said that MNOs are suppliers of IoT technology to your company. Why is this?

Aggregate figures across all countries surveyed. Base is all enterprises that use MNOs as a supplier of IoT technology (either 'main supplier' or as 'other supplier').



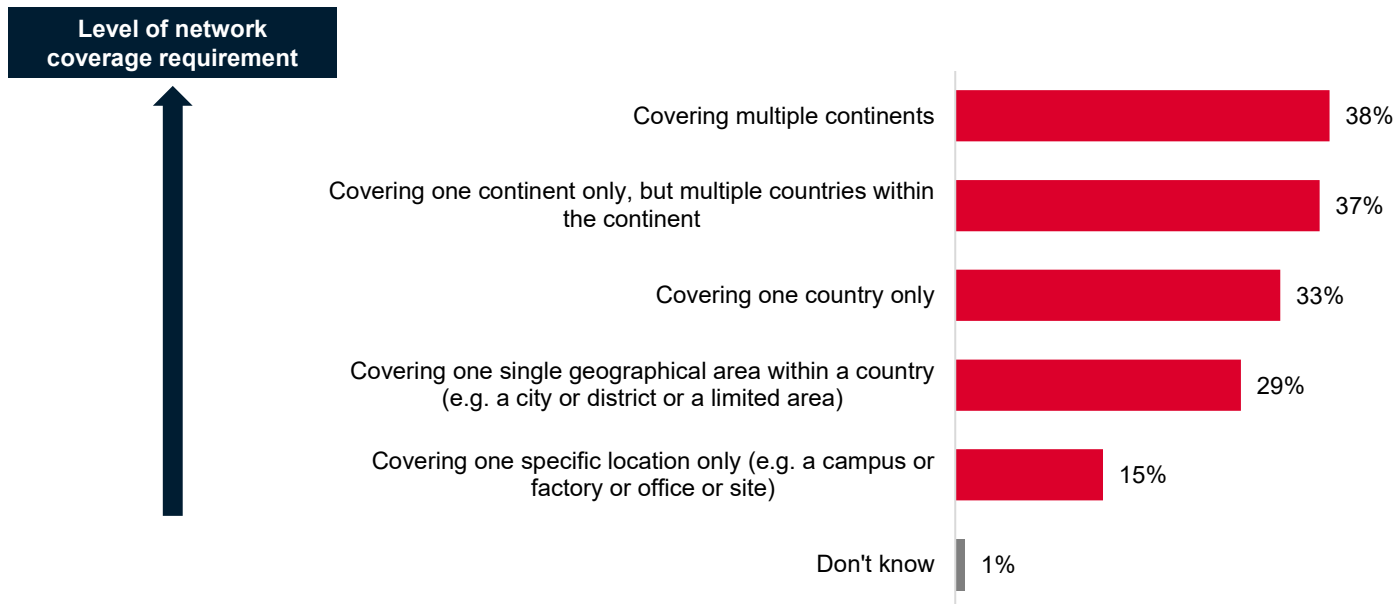
Multi-continent network coverage requirement is needed by 38% of enterprises deploying IoT

IoT network coverage requirements

What are the network coverage requirements of your company's IoT deployments?

Aggregate figures across all countries and vertical sectors surveyed. Base is all enterprises that are already using or testing/planning to use IoT technology.

Percentage of respondents. Respondents could select all that apply.



15% of enterprises deploying IoT require covering a specific location, which cellular connectivity is widely needed for

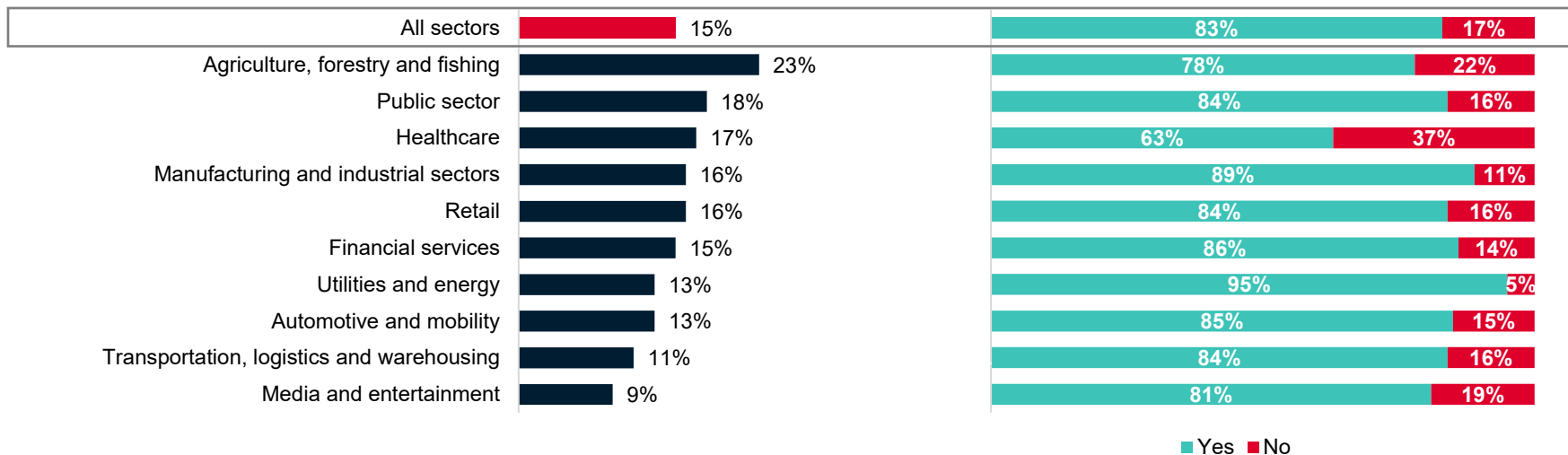
IoT network coverage requirements by vertical sector: requirement of covering one specific location and need for cellular connectivity

What are the network coverage requirements of your company's IoT deployments? Aggregate figures across all countries surveyed. Base is all enterprises that are already using or testing/planning to use IoT technology. Figures represent the percentage of respondents that selected covering one specific location (e.g. a campus, factory, office or site).

Do you need cellular connectivity networks for that specific location? Aggregate figures across all countries surveyed. Base is all enterprises that selected covering one specific location as an IoT network coverage requirement. Percentage of respondents. Percentages may not add up due to rounding.

**IoT network coverage requirement of covering one specific location
(e.g. a campus, factory, office or site)**

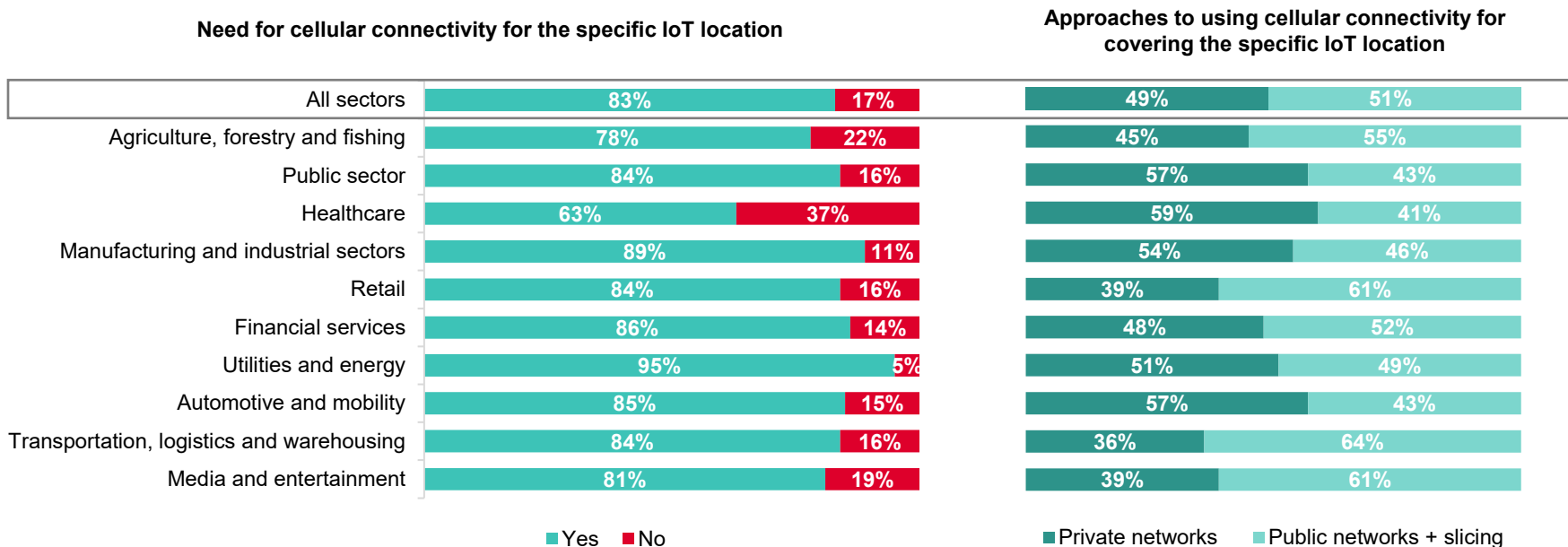
Need for cellular connectivity for the specific location



Mixed approach to using cellular connectivity for covering a specific IoT location: private networks or public with slicing

IoT network coverage requirement of covering one specific location with cellular connectivity: approaches to using cellular connectivity for covering the specific location

Which of the following best describes your approach to using cellular connectivity for the specific location? Aggregate figures across all countries and vertical sectors surveyed. Percentage of respondents. Base is all enterprises that need cellular connectivity to cover one specific IoT location. For both 'private networks' and 'public networks + slicing', figures represent the sum of 'already deployed', 'currently testing' and 'planning to test'. Percentages may not add up due to rounding.

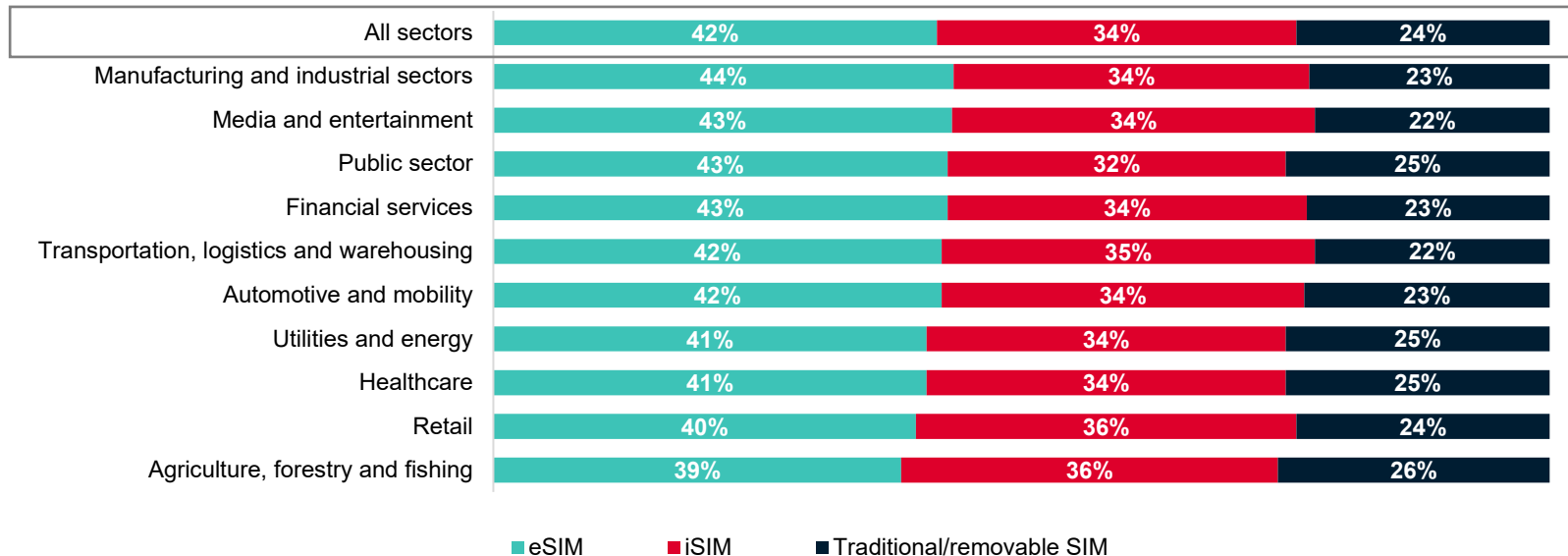


eSIM and iSIM will account for more than 75% of the total IoT cellular market by 2030

Cellular IoT: market share of SIM technologies in 2030 by vertical sector

Thinking about the number of IoT devices/connections that use cellular networks (within your IoT deployments), what share of the total number of IoT connections are expected to use the following SIM technologies?

Aggregate figures across all countries surveyed. Base is all enterprises that are already using or testing/planning to use IoT technology. Percentage of respondents. Percentages may not add up due to rounding.



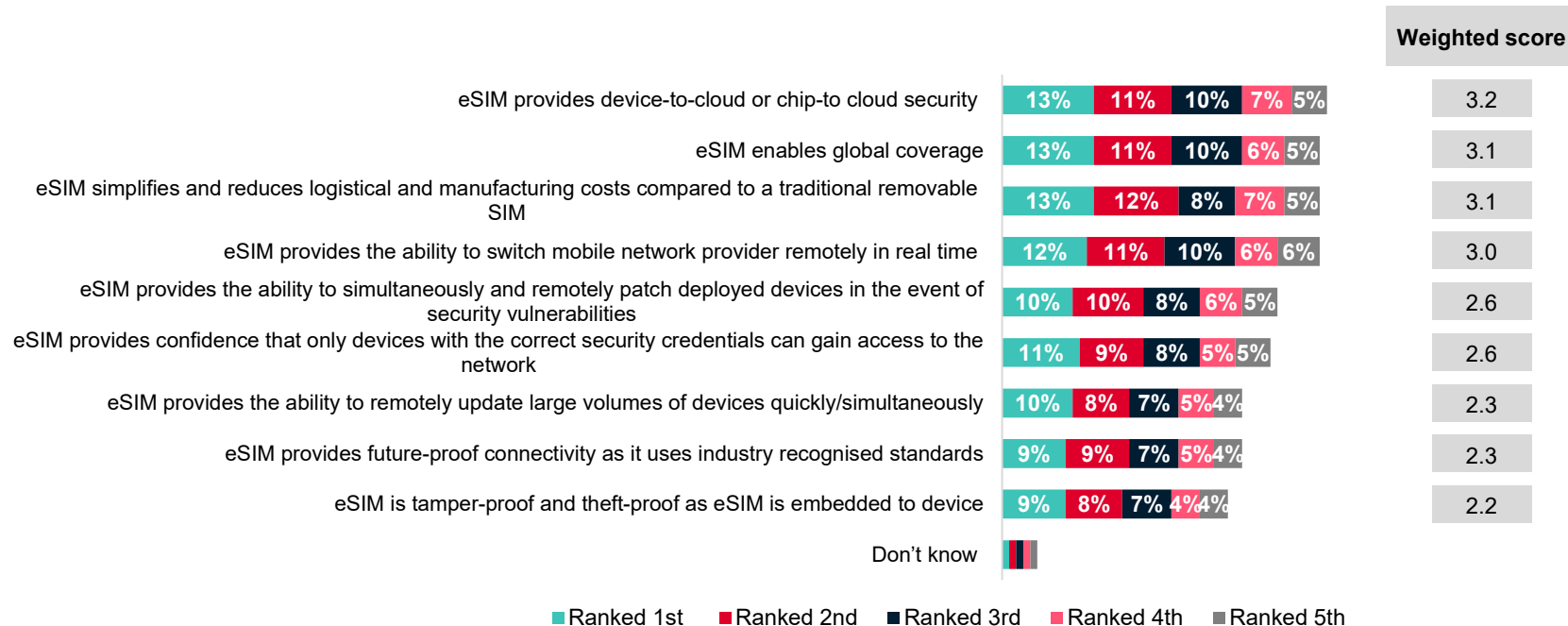
Enterprises see security and scalability as the top benefits of using eSIM technology for IoT deployments

Benefits of using eSIM technology for IoT deployments

What are the main benefits of using eSIM technology for your company's IoT deployments?

Aggregate figures across all countries and vertical sectors surveyed. Base is all enterprises that use eSIM in their IoT deployments.

Percentage of respondents. Respondents could select up to five benefits (ranked from 1st to 5th).



Top three benefits of using eSIM technology for IoT deployments vary by vertical sector

Top three benefits of using eSIM technology for IoT deployments by vertical sector

What are the main benefits of using eSIM technology for your company's IoT deployments?

Aggregate figures across all countries surveyed. Base is all enterprises that use eSIM in their IoT deployments.

	Manufacturing and industrial sectors	Transportation, logistics and warehousing	Automotive and mobility	Utilities and energy	Financial services	Healthcare	Retail	Media and entertainment	Agriculture, forestry and fishing	Public sector
eSIM provides device-to-cloud or chip-to cloud security	1	3	2		3	1	2	1	1	1
eSIM enables global coverage	2		1	3		3	3	2	3	
eSIM simplifies and reduces logistical and manufacturing costs compared to a traditional removable SIM		2	3	1	1					2
eSIM provides the ability to switch mobile network provider remotely in real time	3	1		2	2	2	1	3		
eSIM provides confidence that only devices with the correct security credentials can gain access to the network										3

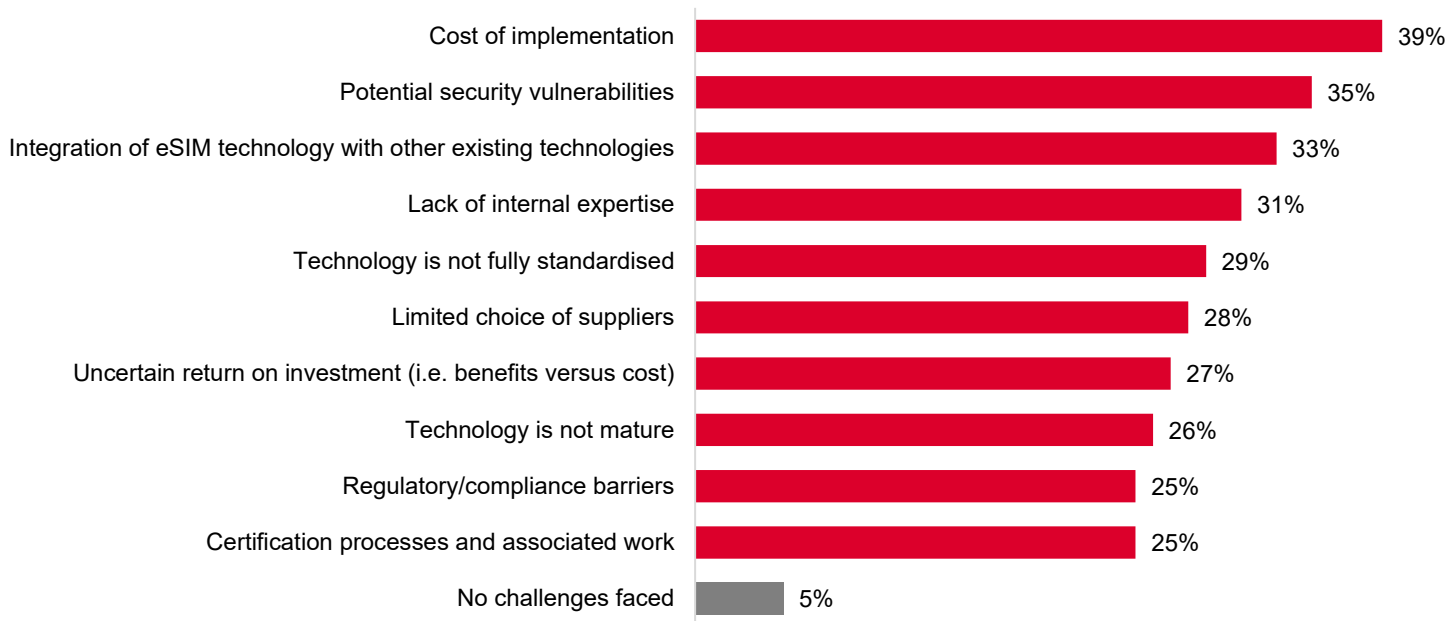
Cost of implementation is the top challenge faced by enterprises when deploying eSIM for IoT

eSIM for IoT: deployment challenges

What are the challenges that your company has faced, or currently faces, when deploying eSIM technology for your IoT deployments?

Aggregate figures across all countries and vertical sectors surveyed. Base is all enterprises that use eSIM in their IoT deployments.

Percentage of respondents. Respondents could select all that apply.



Top three challenges when deploying eSIM for IoT vary by vertical sector

Top three challenges for deploying eSIM for IoT by vertical sector

What are the challenges that your company has faced, or currently faces, when deploying eSIM technology for your IoT deployments? Aggregate figures across all countries surveyed. Base is all enterprises that use eSIM in their IoT deployments.

	Manufacturing and industrial sectors	Transportation, logistics and warehousing	Automotive and mobility	Utilities and energy	Financial services	Healthcare	Retail	Media and entertainment	Agriculture, forestry and fishing	Public sector
Cost of implementation	1	1	1	1	2	1	1	1	1	1
Potential security vulnerabilities	2	3	2	2	3	3	3			2
Integration of eSIM technology with other existing technologies	3	2	3	3	1	2		2	2	
Lack of internal expertise							2	3		3
Technology is not fully standardised									3	

IoT and eSIM: vertical sectors at a glance (1/2)

Use of IoT technology	
Top five vertical sectors	% of respondents already using IoT technology
Utilities and energy	93%
Manufacturing and industrial sectors	91%
Financial services	91%
Media and entertainment	90%
Healthcare	90%

Importance of IoT technology for digital transformation	
Top five vertical sectors	% of respondents rating IoT as extremely important to digital transformation success
Automotive and mobility	49%
Utilities and energy	48%
Manufacturing and industrial sectors	45%
Transportation, logistics and warehousing	45%
Media and entertainment	43%

Spend on IoT technology	
Top five vertical sectors	% of respondents placing IoT as a top five area of spend for 2024–2026
Utilities and energy	22%
Manufacturing and industrial sectors	20%
Transportation, logistics and warehousing	19%
Media and entertainment	16%
Retail	16%

Cost of implementation as an IoT deployment challenge	
Top five vertical sectors	% of respondents rating cost of implementation as a deployment challenge
Manufacturing and industrial sectors	44%
Public sector	42%
Retail	40%
Healthcare	39%
Financial services	39%

IoT and eSIM: vertical sectors at a glance (2/2)

Use of 5G for IoT	
Top five vertical sectors	% of respondents that expect to use 5G in their IoT deployments
Manufacturing and industrial sectors	78%
Media and entertainment	74%
Retail	74%
Utilities and energy	74%
Automotive and mobility	73%

Use of satellite for IoT	
Top five vertical sectors	% of respondents that expect to use satellite in their IoT deployments
Media and entertainment	21%
Transportation, logistics and warehousing	20%
Manufacturing and industrial sectors	19%
Financial services	17%
Healthcare	15%

Use of operators as suppliers of IoT technology	
Top five vertical sectors	% of respondents using operators as suppliers of IoT technology
Healthcare	10%
Manufacturing and industrial sectors	9%
Utilities and energy	9%
Transportation, logistics and warehousing	9%
Media and entertainment	9%

Adoption of eSIM (2030)	
Top five vertical sectors	% of cellular IoT connections that will use eSIM
Manufacturing and industrial sectors	44%
Media and entertainment	43%
Public sector	43%
Financial services	43%
Automotive and mobility	42%

