A photograph of two hikers on a rocky mountain peak. One hiker is standing on a higher rock, reaching down to help another hiker who is climbing up. The scene is set against a clear blue sky with a hint of sunset or sunrise. A large yellow frame is overlaid on the left side of the image, containing text.

If you don't trust
your 5G vision, how
will your customers
trust you?

Maximizing the 5G opportunity
for enterprise



The better the question. The better the answer.
The better the world works.

The EY logo, consisting of the letters 'EY' in a bold, white, sans-serif font, with a yellow triangle pointing upwards to the right of the 'Y'.

Building a better
working world

Maximizing

the **5G opportunity** for enterprise

Are 5G providers ready to deliver business outcomes in a hyperconnected world?

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Our survey of more than 1,000 organizations explores changing enterprise needs and attitudes as organizations evaluate the 5G opportunity. There are promising indicators of the critical role 5G will play in the next wave of the Internet of Things (IoT), but optimism is accompanied by anxiety. Organizations are looking for much more from their suppliers as 5G comes of age. Simply put, the old world of customer engagement is not fit for purpose — 5G providers must fundamentally adapt if they are to thrive.



Methodology

This report is based on an online survey of 1,012 enterprises worldwide conducted by EY in September and October 2019. Respondents from eight industry verticals and nine countries participated in a survey consisting of multiple-choice questions and agreement statements. Only respondents who self-selected as “moderately knowledgeable” or above about IoT or 5G initiatives who within their organizations are included in our sample.

The survey was designed to explore enterprises’ behaviors, attitudes and intentions toward emerging technologies, with a focus on the IoT, 5G and the intersection of the two. The themes explored included:

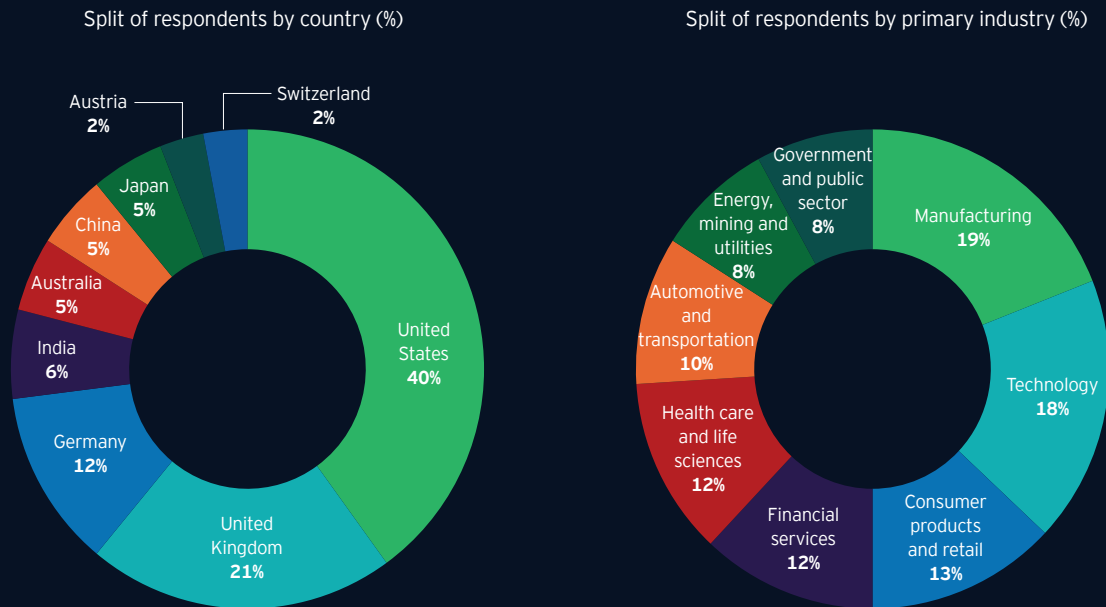
- ▶ Enterprise technology spending intentions
- ▶ Enterprise 5G-based IoT applications use case
- ▶ Organizational priorities with respect to 5G
- ▶ Internal and external challenges facing enterprises around 5G
- ▶ Enterprise relationships with Information, Communications and Technology (ICT) vendors

In this report, the survey findings have been analyzed and supplemented with additional insights and recommendations from our global Technology, Media & Entertainment, and Telecommunications team. This approach has enabled us to shed new light on the current and future state of 5G and IoT adoption among enterprises, and their evolving relationships with service providers.

Respondent profiles

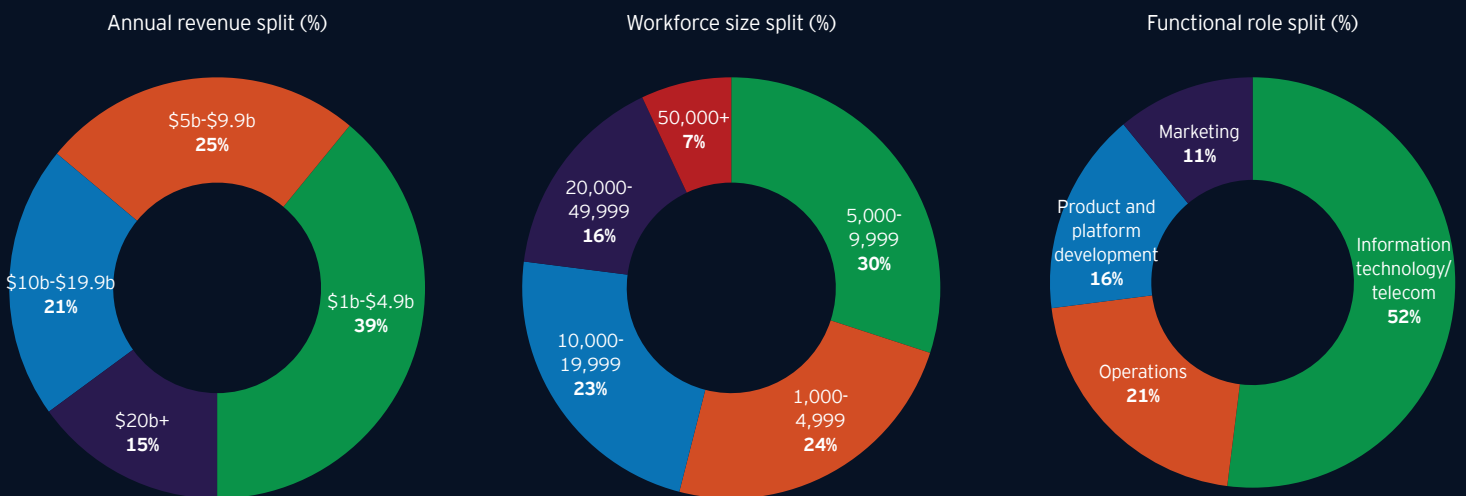
Respondents were located widely across the world, with 40% in the United States, 39% in Europe and the remaining 21% in Asia Pacific. A diverse range of industry voices is included, with manufacturing and technology the most heavily represented. An equal mix of organizational business models is present, with half of organizations providing business-to-consumer (B2C) services and half providing business-to-business (B2B) services.

Breakdown of respondents by country and industry



Large enterprises and multinational corporations (MNC) were the focus of our survey; all respondents represent organizations with at least 1,000 employees and with annual revenues of at least US\$1b. ICT functions account for half of our respondent base, with the remainder made up of respondents with product development, operations and marketing roles.

Breakdown of respondents by organization size and functional role





Key success factors for 5G providers

Our survey findings highlight the positive factors driving the enterprise opportunity in 5G. Future spending intentions are healthy, while enterprises recognize 5G's transformational potential and have a range of application scenarios in their sights.

Yet strategic, financial and operational challenges are mounting. Demand for end-to-end solutions is growing as organizations seek 5G upgrade paths in IoT, indicative of a wider shift in organizational attitudes to their technology and telecommunications suppliers.

We believe there are three important steps that 5G providers should take to help their business customers make the most of a 5G-IoT world:

1

Prioritize the reimagining of industries

Educate and inspire enterprises to think big in 5G

The investment outlook in 5G and IoT is fundamentally positive, and enterprises already have a range of 5G use cases in mind. However, overarching IoT drivers remain efficiency-driven while organizations are grappling with 5G's impact on their services portfolio and wider corporate strategy. In this light, service providers should articulate a more compelling vision of what 5G can offer organizations, one that is sensitized to vertical needs. Educating enterprise customers on the business value of 5G and how this can translate into game-changing use cases will be essential.



2

Sensitize 5G to the enterprise transformation agenda

Ensure that your 5G offerings are linked to wider emerging technology needs

Anxieties around technology integration and maturity stand out as 5G challenges for enterprises. As a result, 5G providers should help their customers formulate the right linkages between 5G and IoT access technologies, and between these and related developments in edge computing and artificial intelligence (AI). Only this kind of holistic perspective can help organizations surmount the pain points they feel amid a backdrop of ongoing budget pressure. The ability to create a 5G road map informed by the broader context of digital transformation is not just a nice-to-have – it's mission-critical.

3

Reinvent yourself as a partner, not just a provider

Deliver end-to-end solutions through more meaningful 5G ecosystems

Enterprise perceptions of service providers are undergoing a pervasive shift. The era of technology push and transactional interactions is disappearing, and enterprises want consultative dialogue that delivers business outcomes through end-to-end solutions. No single type of supplier is trusted to provide all the proficiencies that businesses need in a 5G world: telcos lead as IoT experts but underscore as authorities on digital transformation. 5G providers should prioritize access to an ecosystem of competencies that can deliver 5G-IoT at scale over the next decade. Delivering actionable solutions that embrace the full spectrum of enterprise needs – from business and use case creation to addressing cybersecurity and data protection – will be critical in the long term.



The road to enterprise 5G

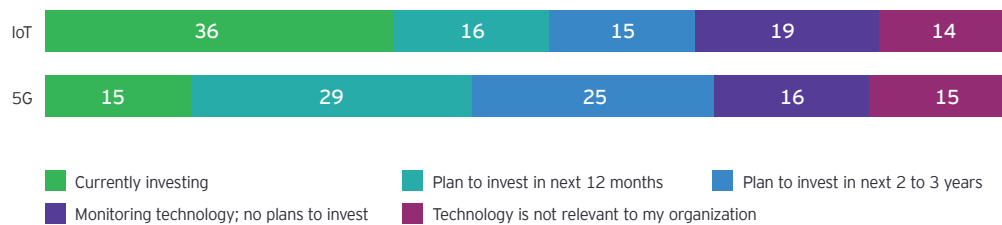
5G: the critical catalyst for the next wave of IoT

5G has the potential to reinvent industries across all geographies. While previous generations of mobile technology relied on consumer adoption to blossom, 5G can deliver a step change in growth and efficiency for businesses. By entering the very fabric of business processes, 5G can supercharge IoT to deliver the next wave of industrial transformation.

5G is only just now appearing in many markets, but adoption levels will grow substantially in years to come. Currently, 15% of enterprises are investing in 5G, with an additional 54% planning to invest in the next one to three years. By the end of 2022, the proportion of organizations investing in 5G will be on a par with IoT itself.

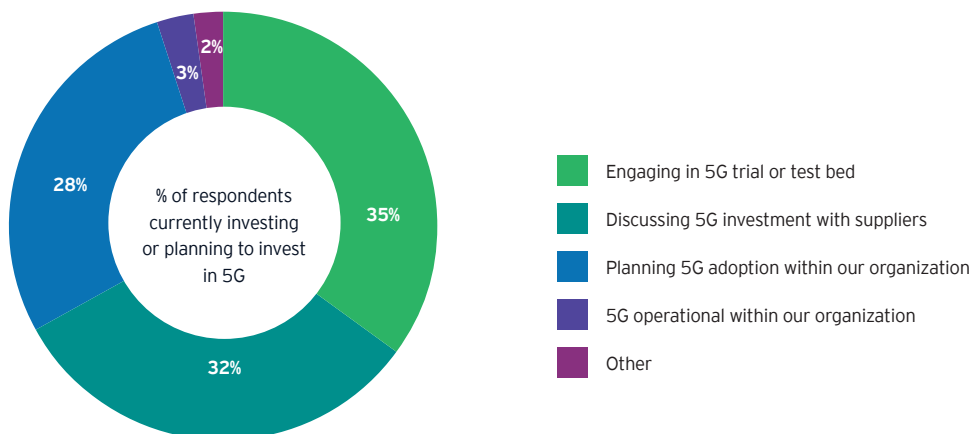
Enterprise spending intentions on 5G and IoT

% of all respondents



Yet despite positive investment intentions, most enterprises remain at the very beginning of their 5G journeys. Only 3% of companies with current or future 5G investment plans currently have 5G operational within their organizations; 67% are engaging in 5G trials or discussing 5G investment with their suppliers; and 28% are planning 5G deployment within their organizations.

Deployment status of enterprises with 5G spending plans



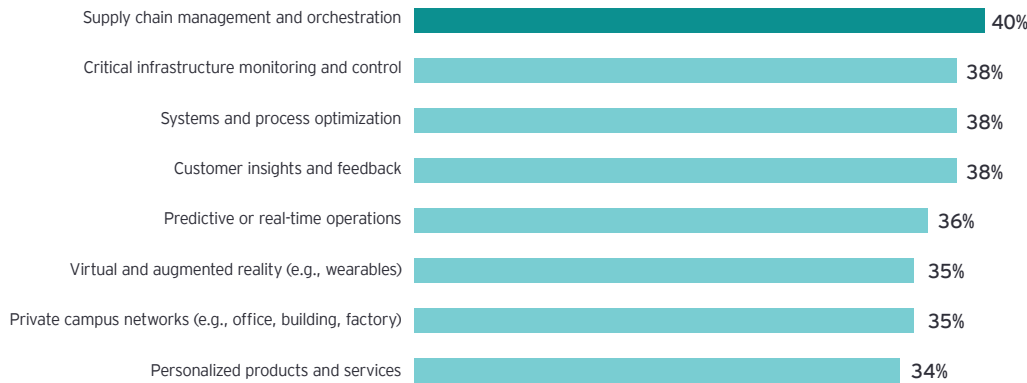
Organizations have a range of 5G-IoT applications in their sights

Enterprises are already conscious of the role 5G can play in unlocking new IoT propositions, and those currently investing or planning to invest in IoT cite a range of use cases. Supply chain management and orchestration lead the way, while personalized products and services rank further down, just below more nascent concepts such as private networks and virtual or augmented reality applications.

Priority application scenarios for 5G-based IoT

Which are or will be the most significant IoT application scenarios for your organization, delivered by 5G-based technology? (please select all that apply).

% of respondents currently investing or planning to invest in IoT



Limited ambition levels? Leading IoT rationales focus on efficiency gains

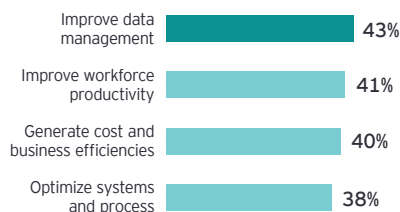
While enterprises are taking a broad view of the upside 5G can provide in terms of applications, overall drivers of IoT spend remain largely efficiency-driven. Improved data management, higher workforce productivity and cost control lead as IoT rationales, while objectives that enhance the top line – such as creating new services, overhauling business models or entering new markets – rank further down.

This could be interpreted as signaling a lack of ambition in enterprises' current IoT strategies, whereby the prioritization of efficiency gains may preclude focus on more growth-oriented use cases. 5G offers more scope for top-line growth, yet current IoT drivers have yet to reflect this.

Drivers of enterprise IoT spend

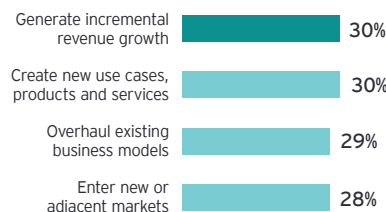
Efficiency and optimization gains lead as IoT rationales ...

% of respondents currently investing or planning to invest in IoT



... with top-line benefits less of a focus for business.

% of respondents currently investing or planning to invest in IoT





5G offers more scope for top-line growth, yet current IoT drivers have yet to reflect this.



5G-based IoT: pain points and priorities



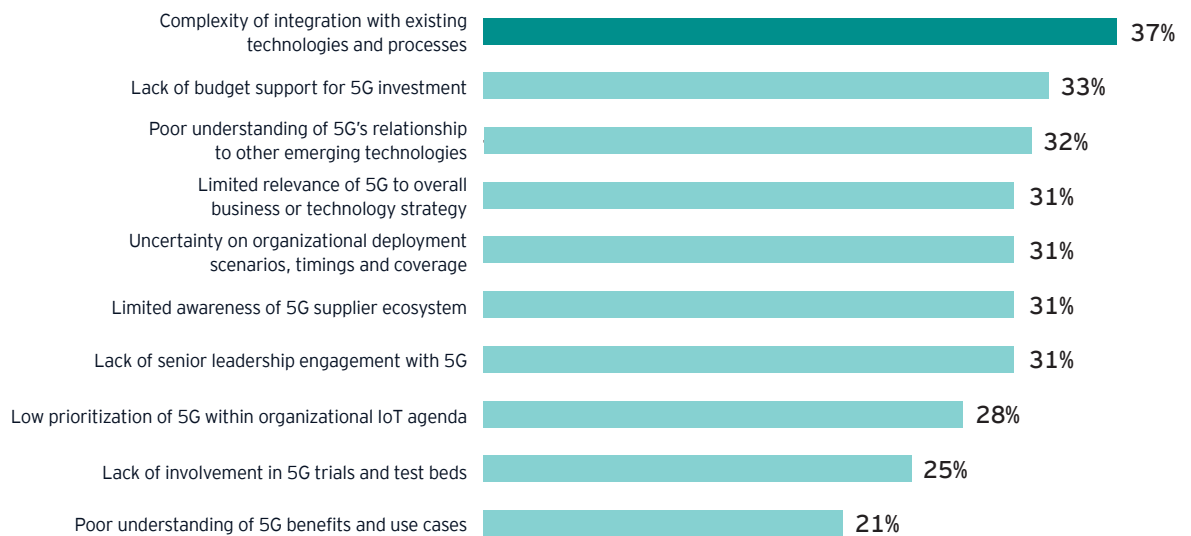
Among the internal challenges with 5G - those within organizations' control - operational, financial and strategic risks all feature prominently.

5G pain points: technology integration and maturity alongside limited budgets and awareness

Enterprises view 5G as an enabler of their evolving IoT agendas and have various application scenarios in mind. At the same time, obstacles complicate a positive prognosis. Among the internal challenges with 5G - those within organizations' control - operational, financial and strategic risks feature prominently. The perceived burden of integrating 5G with existing technologies ranks first, with budget support also a source of anxiety. Organizations are also grappling with the fundamental relationship between 5G and other emerging technologies, while deployment scenarios are also a cause for concern.

Enterprise 5G: internal challenges

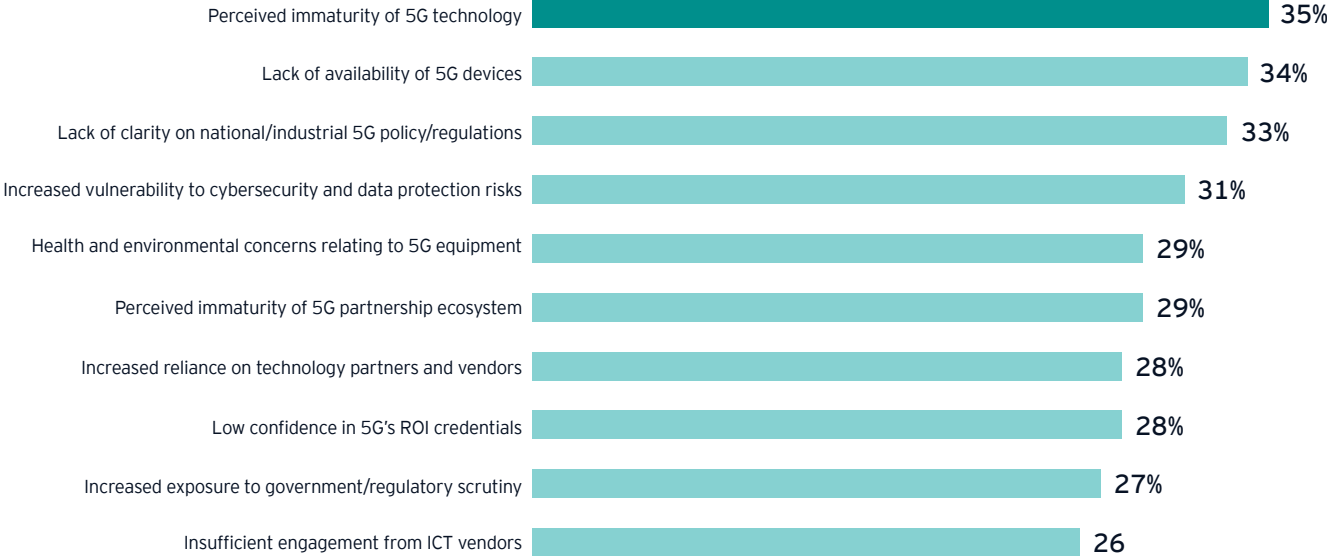
% all respondents



Leading external challenges present within the wider ecosystem include the perceived immaturity of 5G technology, with limited device availability a related supply-side concern. Question marks around policy and regulation rank third. This is illuminating: unlike previous generations of mobile technology, 5G now figures prominently within national industrial strategies. Concerns around cybersecurity, health and the partnering ecosystem are also in focus for many.

5G: external challenges

% of respondents

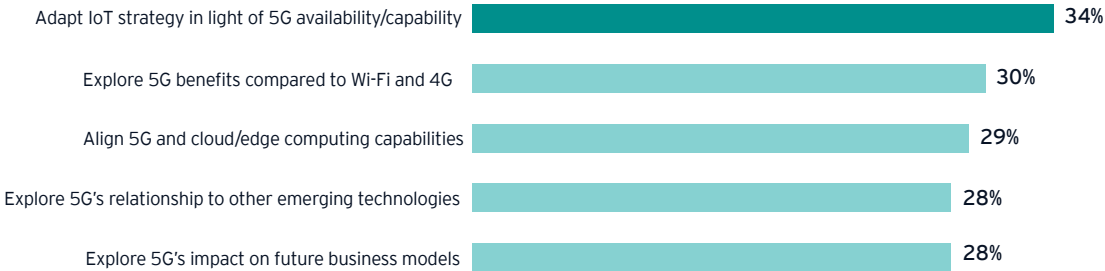


Enterprises are seeking a symbiotic relationship between 5G, IoT and other emerging technologies

With these challenges in mind, enterprises are already formulating a set of 5G priorities that can help them turn a nascent technology into the lifeblood of long-term transformation. Adapting their existing IoT plans to cater for 5G leads the list of priorities going forward, while exploring 5G's relationship to other emerging technologies is also a front-running consideration. As organizations move forward with IoT strategies sensitized to 5G, they are also eager to understand the specific advantages conferred by 5G compared to legacy mobile technologies such as 4G and Wi-Fi.

Leading 5G priorities for enterprises

% of respondents currently investing or planning to invest in 5G



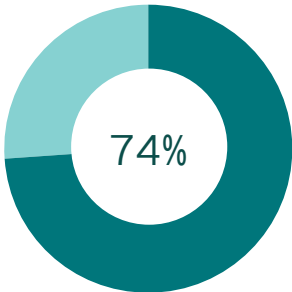
Enterprises are aware of 5G's transformational potential and believe organizational overhaul is critical to making the most of 5G but respondents lack faith in their organization's ability to execute.

Assessing how 5G can inform future business models also features as a top five priority. This is instructive since efficiency gains lead as current drivers of IoT investment with business model overhaul muted by comparison. 5G has the potential to put top-line growth at the heart of the IoT agenda, and organizations are starting to recognize this.

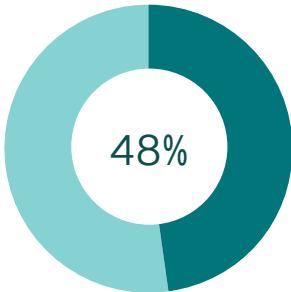
5G: an engine of far-reaching enterprise transformation

Enterprises are aware that 5G can fundamentally reshape their organizations. Alongside their interest in exploring 5G's impact on new business models, organizations foresee the need to overhaul their operating models in a 5G world. Yet this is another potential source of anxiety – while three-quarters of enterprises agree this is a prerequisite for successful implementation, less than half are confident that their organizations can successfully transition to 5G-based IoT.

Implementation uncertainties



Respondents who believe successful 5G-IoT implementation will require significant overhaul of their organization's operating model



Respondents who have confidence in their organization's ability to successfully implement 5G-IoT

Misgivings about their organizations' ability to execute is also partnered by concern around a lack of organization-wide understanding about what 5G can bring. Without greater knowledge of 5G use cases and concepts, 69% of respondents fear that their organizations will merely view 5G as an incremental improvement on existing 4G and Wi-Fi technologies, for example.



The changing view of the vendor

End-to-end solutions are coming to the fore

As enterprises refine their strategies to cater for the next wave of IoT fueled by 5G, their supplier needs are changing. Turning to the attributes that enterprises are looking for in their technology and telecommunications vendors, our research reveals an evolving picture.

Competitive pricing remains the most desired attribute sought in ICT vendors now and in the future. However, other attributes are gaining ground: notably, the ability to provide end-to-end solutions will rise relative to other attributes, while understanding of the broader business or vertical industry will remain a leading consideration, overtaking speed of deployment and execution. Geographic reach is also set to move to the fore in the future, reflecting the need to scale technology capabilities well beyond localized trials and test beds.

Top 10 attributes sought in ICT vendors now and in the future

	Now	Future	Change
1	Competitive pricing	Competitive pricing	▶
2	Speed of deployment and execution	End-to-end solution capabilities	▲
3	Understanding of broader business or industry needs	Understanding of broader business or industry needs	▶
4	Ability to co-create new products and services	Speed of deployment and execution	▼
5	End-to-end solution capabilities	Geographic reach	▲
6	Professional services capabilities	Ability to co-create new products and services	▼
7	Breadth of service offering	Ability to customize and tailor offering	▲
8	Geographic reach	Breadth of service offering	▼
9	Strength of SLAs	Professional services capabilities	▼
10	Ability to customize and tailor offering	Depth of ecosystem partnerships	▲

Enterprise mind share is split between different suppliers

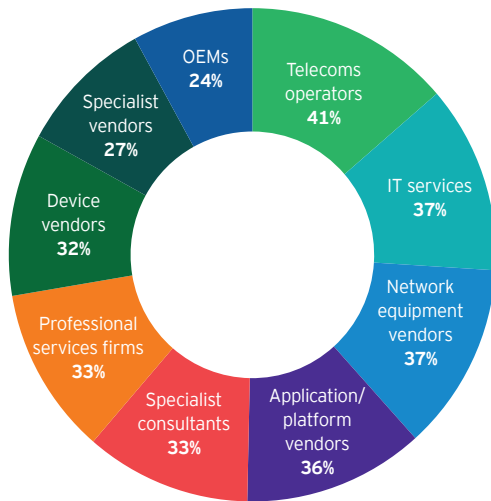
Despite the rising importance of end-to-end solutions, no single type of vendor dominates as a trusted provider across the different activities demanded by enterprises. Telcos rank ahead of other suppliers as trusted experts in IoT. However, IT services providers lead the way as digital transformation experts, with telcos ranking behind both these companies as well as equipment and application vendors.

Enterprise trust in suppliers for IoT and digital transformation

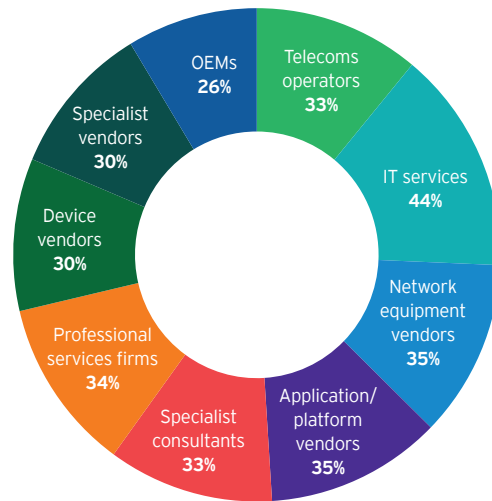
Q. Which types of ICT supplier are most trusted as experts by your organization? (please select three).

% all respondents

IoT



Digital transformation



Given enterprises' need for a holistic and integrated approach to 5G, IoT and other emerging technologies – and their growing desire for end-to-end solutions – these findings strongly underline the need for suppliers to collaborate and forge partnerships across the vendor ecosystem. 5G is much more than a new type of IoT connectivity solution, and suppliers must draw on a range of competencies to help enterprises take full advantage.

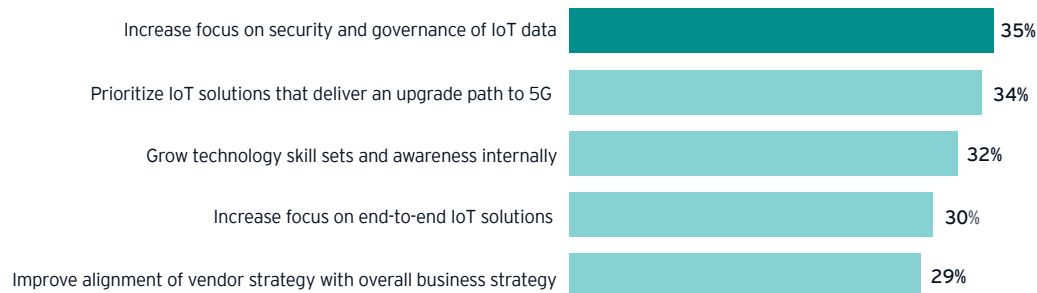
Data management and 5G upgrade paths will drive future IoT vendor strategies

Drilling down into the factors that will shape our respondents' vendor strategies for IoT deployments in the future, security and 5G upgrade paths emerge as the most influential factors, followed by the ability to grow technology skill sets and awareness internally. These findings throw down a challenge to vendors to develop these capabilities or access them through collaborative partnerships.

Factors informing enterprises' IoT vendor strategies

Q. Which will be the most significant factors informing your vendor strategy for IoT in the future? (please select three).

% of respondents currently investing or planning to invest in IoT

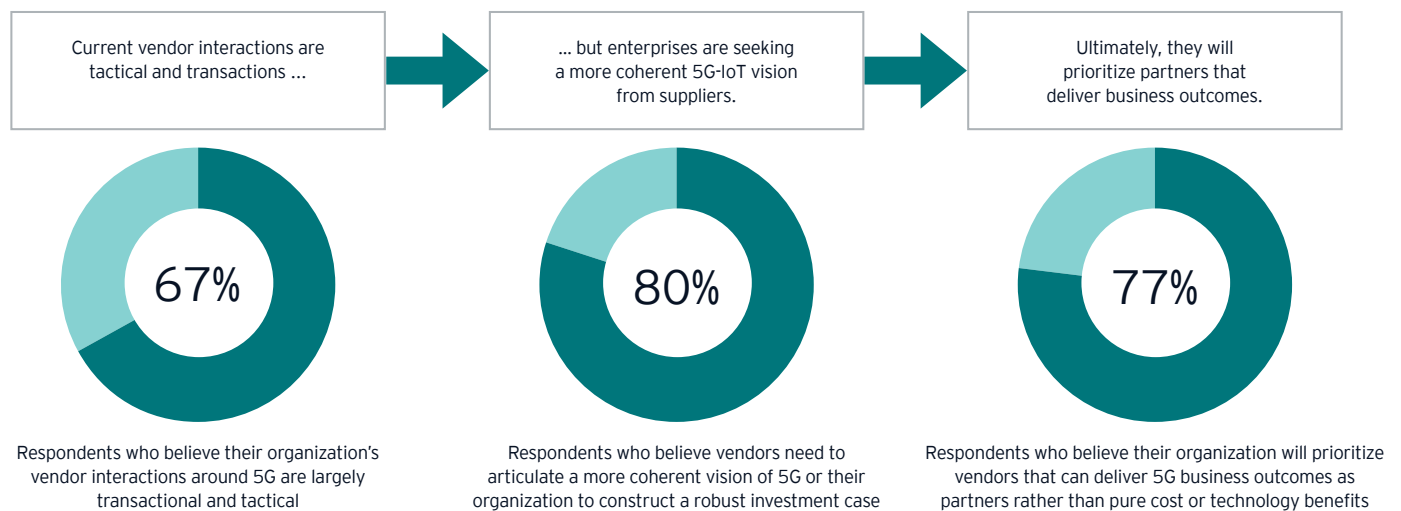


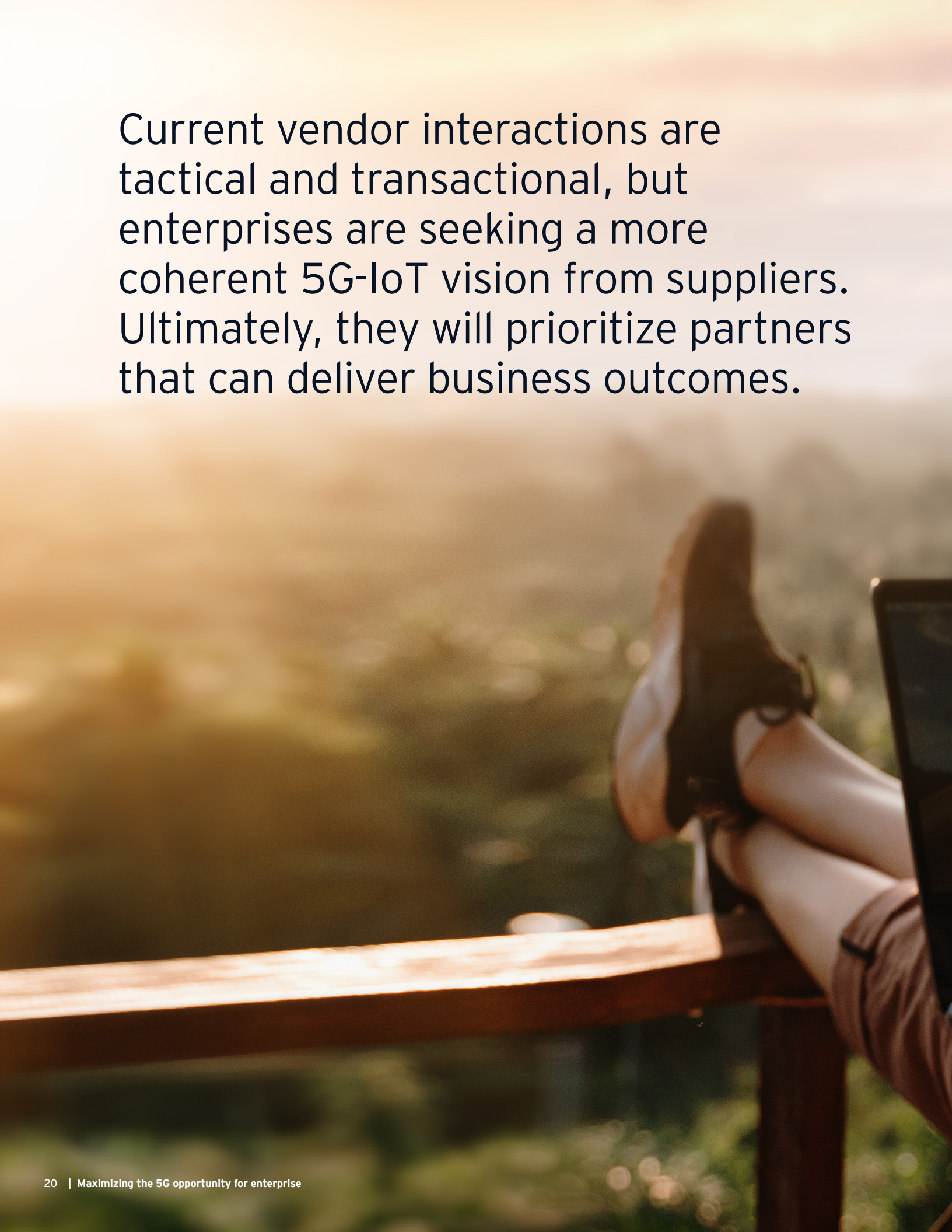
The enterprise ask: trusted partnerships that deliver business outcomes

Enterprise responses to the agreement statements in our survey underline the fundamental challenge facing 5G-IoT providers. Organizations are struggling to identify the right type of 5G providers. Two-thirds think their interactions with suppliers regarding 5G are too tactical and transactional, and 77% will prioritize vendors that can deliver business outcomes as partners.

Moving beyond the era of technology push is vital – our agreement statements also highlight that more than 7 in 10 organizations will prioritize vendors that have deep industry, financial, legal and risk management expertise. The onus on 5G-IoT providers to create a more purposeful and productive dialogue with their enterprise customers – one that is backed by specific skills in specific domains – is clear.

The journey from provider to partner



A person is sitting on a wooden railing, looking out over a scenic landscape at sunset. The person's legs are crossed, and they are wearing a light-colored top and dark shoes. The background is a soft, hazy landscape with greenery and a warm, golden light from the setting sun. The overall mood is peaceful and contemplative.

Current vendor interactions are tactical and transactional, but enterprises are seeking a more coherent 5G-IoT vision from suppliers. Ultimately, they will prioritize partners that can deliver business outcomes.



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EYG no. 000485-20Gbl
1910-3305070
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