Beyond 2020: What's ahead for 5G?

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Summary

The extraordinary events of 2020 have not dampened global market appetite for 5G but satisfying demand isn't a simple matter. Finding the most profitable and enticing applications for public and private 5G remains the top challenge for all market participants, according to a new survey from Informa Tech and Omdia. The 5G World 2020 Global Insights Survey gathered views and experiences from enterprises, network operators, network equipment vendors, integrators, and a range of other 5G market stakeholders across the world.

Most 5G suppliers are betting on real-time video streaming as the main draw for 5G while converging on large enterprises and consumers to drive the bulk of their revenue. But is this a credible game plan that can differentiate and recoup ongoing 5G investments? The good news for 5G service providers is that one in three enterprises has either accelerated their 5G plans or found new use cases as a result of COVID-19. The bad news is that more than a third of the very biggest enterprises are confident in their ability to execute their 5G strategy largely without assistance.

2020 has proven to be a tough year for the world's 5G market makers, but they must face market complexities and decisions in 2021 and beyond that won't be trivial either.

Key findings

- Nearly half of operators already have firm plans to deploy dynamic spectrum sharing, but only a third of operators have a committed date to deploy Open RAN and a third don't know when they'll deploy standalone 5G.

- More than half of operators that have already deployed 5G say that finding a profitable business case remains their top challenge.

- Seven out of 10 operators believe further investment in network functions virtualization and mobile edge computing will help them secure 5G success.

- Almost a quarter of enterprises want to DIY their 5G deployment, rising to more than a third of enterprises with $1 billion or more in revenues.

- When enterprises do use partners for 5G service rollouts, they are most likely to work with a network equipment vendor, but the largest firms prefer cloud hyperscalers while smaller firms trust operators most.

- Six out of 10 future enterprise 5G deployments are likely to be within a building.

Who took the survey?

The survey collected views among market stakeholders across all world regions, with respondents participating from 55 countries (see Figures 1 and 2).

Figure 1: Survey participants by type
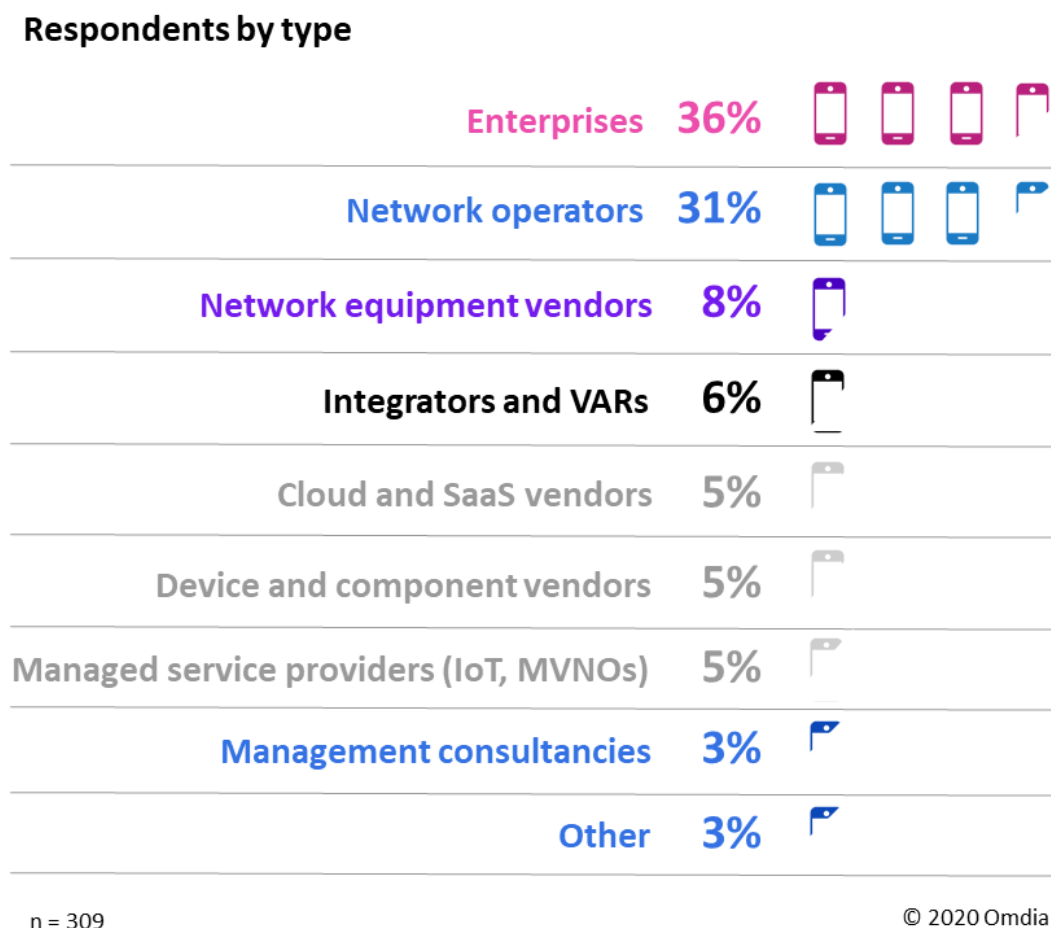
Figure 1: Survey participants by type

Respondents by type

Enterprises	**36%**
Network operators	**31%**
Network equipment vendors	**8%**
Integrators and VARs	**6%**
Cloud and SaaS vendors	5%
Device and component vendors	5%
Managed service providers (IoT, MVNOs)	5%
Management consultancies	**3%**
Other	**3%**

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Figure 2: Survey participants by geography

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Respondents by geography
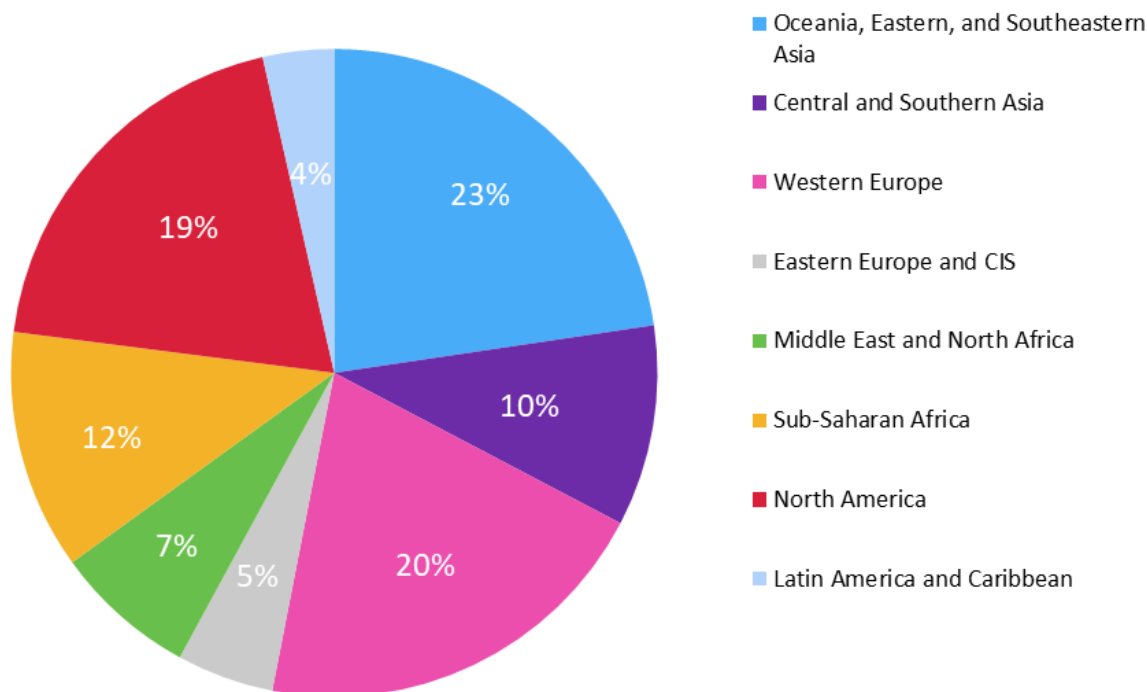
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Recommendations for 5G network operators

- **Assert value beyond speed.** Enterprises deploying 5G now have goals that differ fundamentally from past mobile user generations: they are investing to create new ways to interact, do business and make money—the offer of connecting faster doesn't cut it alone as a sustainable value proposition.

- **Support your superfans.** The survey found that operators' top 5G supporters are smaller firms—usually midmarket organizations with hundreds instead of thousands of employees. Productizing 5G solutions for this demographically populous segment may be a faster way to build revenues than custom deals with bigger enterprises.

- **Build a partner ecosystem.** Prior experience with the related Internet of Things market should have taught an important lesson: you can't do it all. Urgent work must be done to finesse the best and neediest targets among enterprise verticals and secure partners with deep vertical or domain expertise.

Recommendations for 5G equipment vendors

- **Don't squander market momentum.** Network equipment vendors are the most trusted 5G partners both for operators and enterprises currently deploying. Demonstrate technology excellence and secure your status by producing pragmatic go-to-market and implementation guidance on evolving industry best practice.

- **Sell solutions, not technology.** Avoid selling in product silos: operators and enterprises must be made to understand that operational 5G success depends on the interplay of technologies across multiple domains and systems.

- **Invest in the channel.** On-the-ground professional services expertise is critical to guide customers through the 5G lifecycle as demand scales up across the world. Design, build and implementation partners are the priority now, but those with managed services skills will become an important need to plan for.

Recommendations for enterprises

- **Beware 5G zealots.** The most valuable suppliers can make pragmatic decisions that suit your organization, not their technology bias. A brave leap into 5G may not be the right decision versus a staged migration in some cases. Favor those that take time to understand your business and strategic goals.

- **Value integration skills.** Enterprise digital environments are diverse and messy, particularly as operational and information technologies converge. Suppliers that can translate between the language of OT and IT—particularly for your industry—are likely to be rare, but very valuable to know.

- **Seek builders of ecosystems.** Success in enterprise 5G is about connecting the dots - between people, processes and technologies. For partner selection, who they know matters almost as much as what they know. Given the breadth of 5G's impact, the smartest suppliers have taken time to map out ecosystems and built partnerships across solution specialists and other market stakeholders.

Rising beyond 2020

The global pandemic: an unexpected catalyst for 5G

5G's diverse market stakeholders remain committed to the technology's promise. COVID-19 has touched everyone, but its effect is diffused across different organizations (see Figures 3 and 4).

Figure 3: Commitment to 5G remains strong (1)
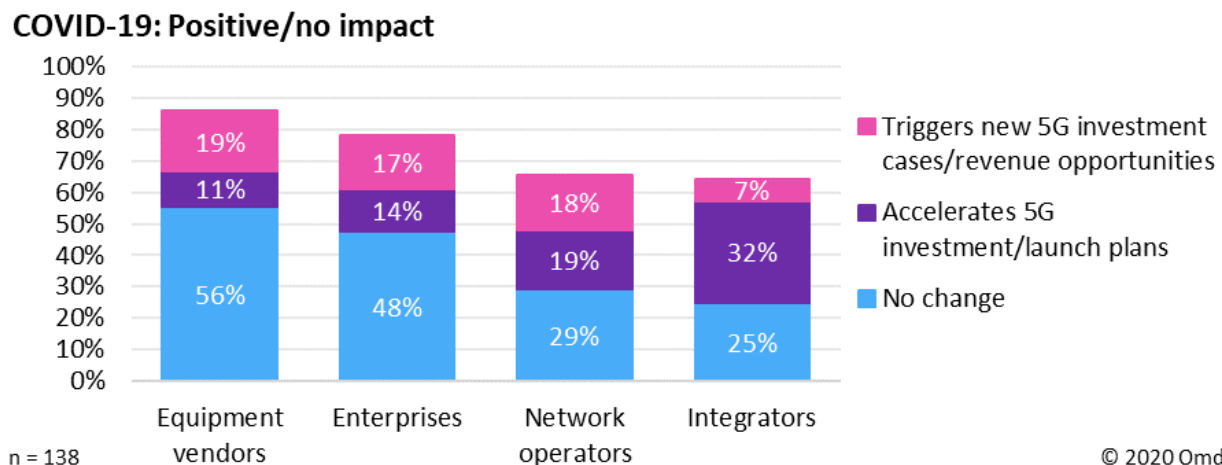
Figure 3: Commitment to 5G remains strong (1)

COVID-19: Positive/no impact

	Equipment vendors	Enterprises	Network operators	Integrators
Triggers new 5G investment cases/revenue opportunities	19%	17%	18%	7%
Accelerates 5G investment/launch plans	11%	14%	19%	32%
No change	56%	48%	29%	25%

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Figure 4: Commitment to 5G remains strong (2)

Figure 4: Commitment to 5G remains strong (2)

COVID-19: Negative impact

Delays 5G investment/launch plans
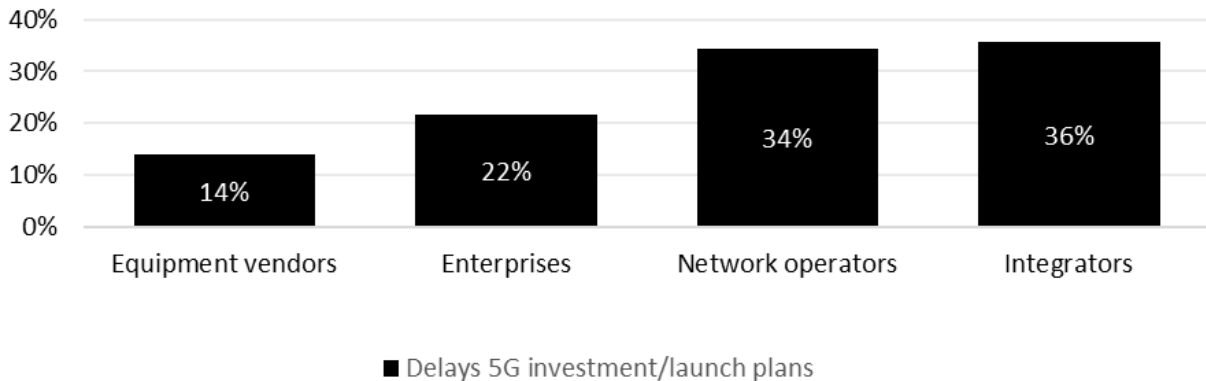
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Slightly more than a third of network operators—arguably the group with the biggest stake in 5G's success—state that the pandemic has affected their rollout plans or further investments.

Meanwhile, equipment vendors appear to be the most resilient: only one in 10 reports that their plans are delayed. This is partly because more vendors are diversifying risk by exploring enterprise vertical opportunities, reducing their reliance on winning operator expenditure.

Meanwhile, one in five enterprises says their existing plans are delayed, but a greater number say COVID-19 has helped them to identify new use cases or accelerated need for 5G. Integrators and other professional services firms appear to be the most affected: almost 40% are scaling back 5G activities. For many, their role in the 5G market remains exploratory.

Building the 5G network

5G service providers navigate complex choices

There is huge interest and activity in the disruptive area of Open RAN, which includes Telecom Infra Project's OpenRAN initiative and O-RAN Alliance's work on open RAN interfaces. Open RAN is a broad movement to change how the radio access network is sourced and built. This may include full base band virtualization, open fronthaul, and mixing of radio and base band vendors. Advocates say advantages for operators include a growing number of suppliers, best-of-breed solutions, and faster feature and service adoption. However, the survey suggests that many operators are still reluctant to make a public commitment to Open RAN, even if privately they are deeply engaged.

It is worth underscoring that variants of Open RAN do exist, and some respondents may have considered them in their responses. Technically some operators do have some Open RAN running today, but it isn't virtualized or using an O-RAN specified front haul. Open RAN can include network trials that have a closed fronthaul, single RAN vendor, but a third-party radio intelligent controller, as Nokia has announced with AT&T.

Nevertheless, the survey results are notable: a third of respondents said they are deploying Open RAN, but almost two thirds are undecided (see Figure 5).

Figure 5: A third of operators have already committed to Open RAN

Figure 5: A third of operators have already committed to Open RAN

Operators: Are you going to deploy Open RAN?

7.3%

30.2%

6.3%

56.3%

- Yes
- No
- Not Sure Yet
- Not Applicable
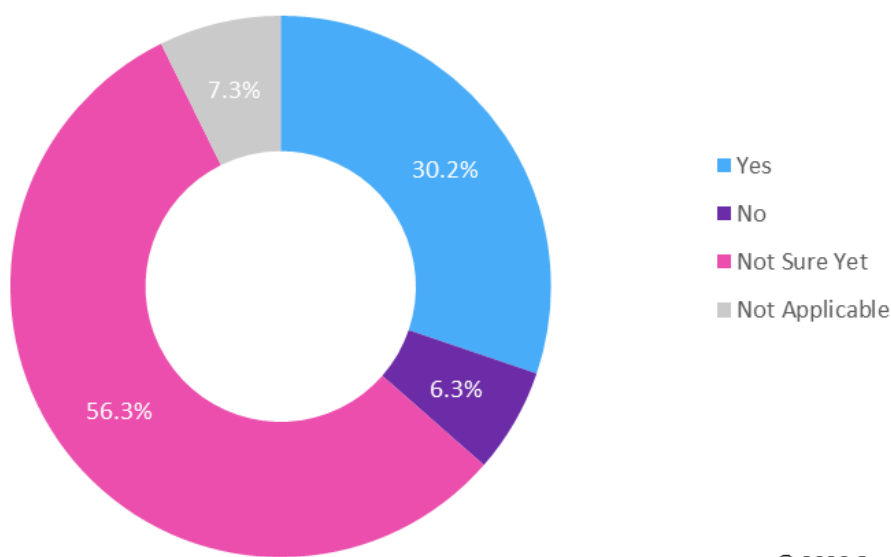
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But 54% of those committed to Open RAN do aim to deploy in 2021. One in five of Open RAN's supporters claims some degree of deployment. The remainder are split with adoption plans ranging between 2022, 2023, and beyond.

The most supportive region for Open RAN to date is the Americas, notably among North American operators (see figure 4). Almost nine out of 10 surveyed said they are committed to this approach. By contrast, one out of five operators in Europe, Middle and Africa and a third of Asia Pacific operators declared a firm timeline for Open RAN adoption in the survey.

Figure 6: Operators in the Americas and Asia lead Open RAN support

Figure 6: Operators in the Americas and Asia lead Open RAN support

By region, percentage of operators currently planning to deploy Open RAN

Europe
19%

Asia Pacific
33%

Americas
88%

Middle East
and Africa
17%
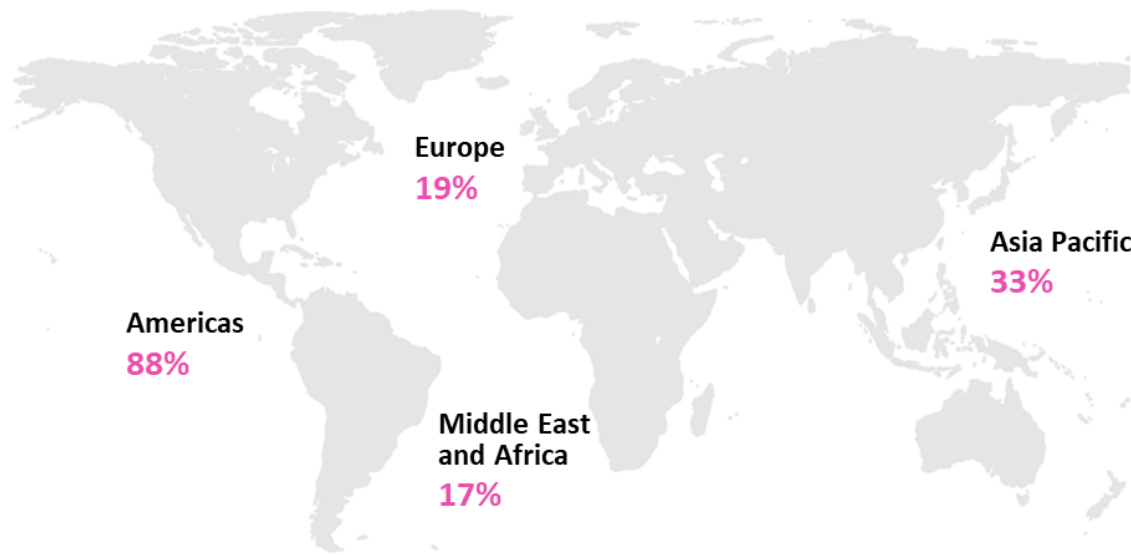
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Standalone 5G timeline extended

Also splitting the operators surveyed is the timeline to roll out standalone 5G: A third of respondents are not yet sure. Among those that are, measured uptake is likely: just shy of 20% are deploying in 2020, then 22% in 2021, and 28% by 2022. The results suggest that European an Asian operators will deploy standalone 5G fastest, with 45% and 43%, respectively, expecting to deploy by end 2022.

Dynamic spectrum sharing wins major support

Technology adoption can happen very swiftly once a proposition is validated. A case in point is the mass display of support for dynamic spectrum sharing. For 5G market makers this is a breakthrough development because it allows operators to use the same spectrum for different radio access technologies, such as 4G and 5G. It is an elegant and timely solution to an operator's perennial challenge: how to maximize return on investment for the finite spectrum at its disposal.

Almost half of the survey respondents (47%) have committed to a rollout date. But timelines vary widely. European operators are most eager: 45% want to deploy between now and 2023.
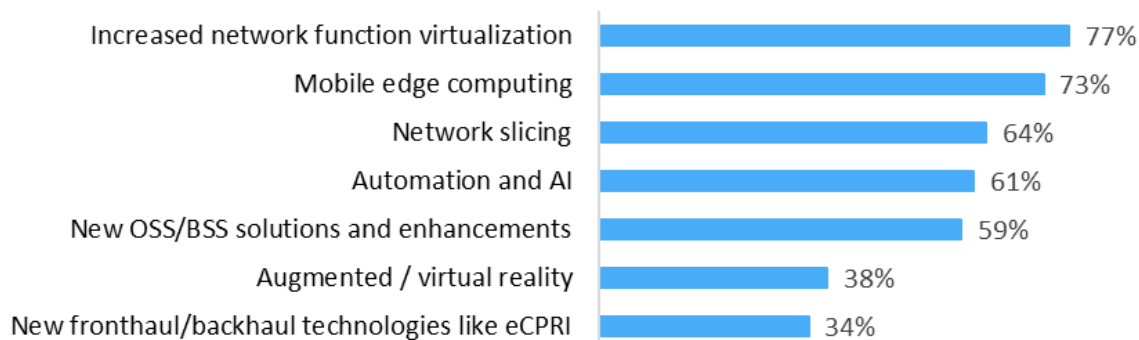
Operators highlight edge and NFV

Operators display a nuanced understanding that it will take more than simply 5G gear to make their 5G deployment a success. In terms of complementary technologies, two dominate among operators surveyed: network functions virtualization and mobile edge computing (see Figure 7).

Interestingly, while operators highlight the importance of edge services in 5G success, enterprises asked a similar question placed edge technology much further down among complementary technologies, compared to IoT, AI, and big data. Going forward, edge services may be an area for further enterprise education.

Figure 7: Operators identify NFV and edge as critical to 5G success

Figure 7: Operators identify NFV and edge as critical to 5G success

Operators: What do you view as complementary investments to maximize 5G network and services performance?

Increased network function virtualization	77%
Mobile edge computing	73%
Network slicing	64%
Automation and AI	61%
New OSS/BSS solutions and enhancements	59%
Augmented / virtual reality	38%
New fronthaul/backhaul technologies like eCPRI	34%

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Selling 5G services

Suppliers hunt for best prospects

The difficult truth is that despite the enthusiasm and commitment of many 5G stakeholders, how exactly to profit from 5G is still a puzzle. First there is the issue of where the money will come from. Across different stakeholder groups, there is some consensus on which general customer segments will prove most profitable.

For equipment vendors and integrators, network operators and large multinational enterprises share the top spot for expected 5G revenue generation (see Figure 8).

Figure 8: Everyone wants to court the multinational enterprise

Figure 8: Everyone wants to court the multinational enterprise

Which customer segment will generate the most 5G-related revenues for your organization?
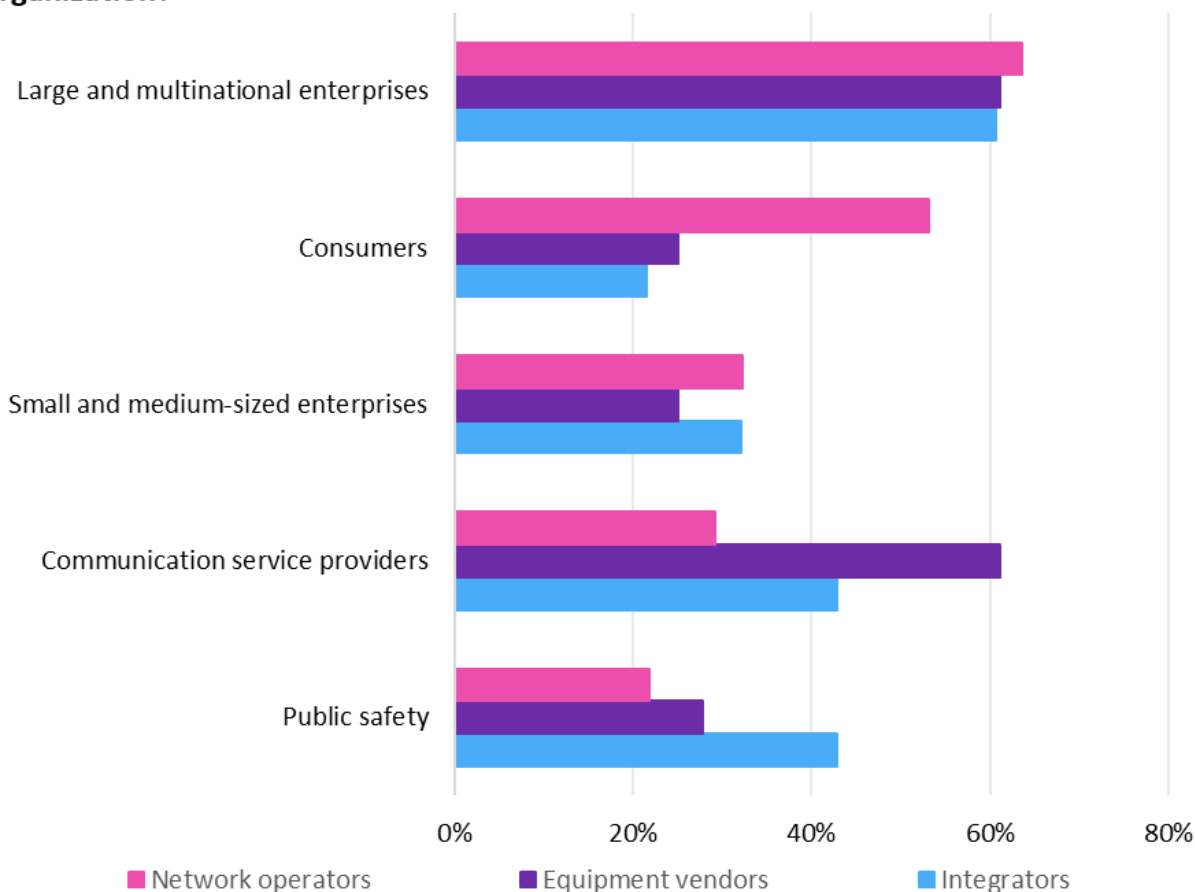
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To what degree this results in competitive conflict remains unknown. However, turning potential conflict into coopetition must be an issue for suppliers to anticipate as 5G market momentum grows, notably in the hot area of private mobile networks.

Multinational enterprises are a popular target

For operators, large multinational enterprises are also the top segment to target. Consumers are not too far behind in revenue-generating potential. B2B demographics are worth restating for further context on this survey finding: 60% of operators say that their 5G future depends on securing deals with companies that represent less than 1% of the enterprise universe. According to our survey, meanwhile, only a third of these large enterprises consider operators as credible 5G partners today.

Profitable business cases remain elusive

Operators that have already deployed 5G say that developing a profitable business case is still top of mind (see Figure 9).

Figure 9: Operators still need help with 5G business cases

Figure 9: Operators still need help with 5G business cases

Deployed 5G operators: key challenges

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Of course, other challenges listed are non-trivial: 5G devices are required to prime the market, network rollout has proven complex and spectrum availability can be a problem.

Arguably, none of these issues are unexpected; they are the same uncertainties and worries that appear when any new technology is launched. And yet the stakes are much higher now: the scope of social and economic impact that 5G promises, the diversity of beneficiaries and fierce competitors puts an even heavier load on the shoulders of those making decisions about 5G.

Shaping the value proposition

Operators are not placing the same bets everywhere. Look at how operators in different geographies rank consumer applications expected to drive 5G uptake (see Figure 10).

Figure 10: Operators place bets on consumer apps

Figure 10: Operators place bets on consumer apps

Operators: Which consumer applications offer your organization the best 5G revenue opportunities?
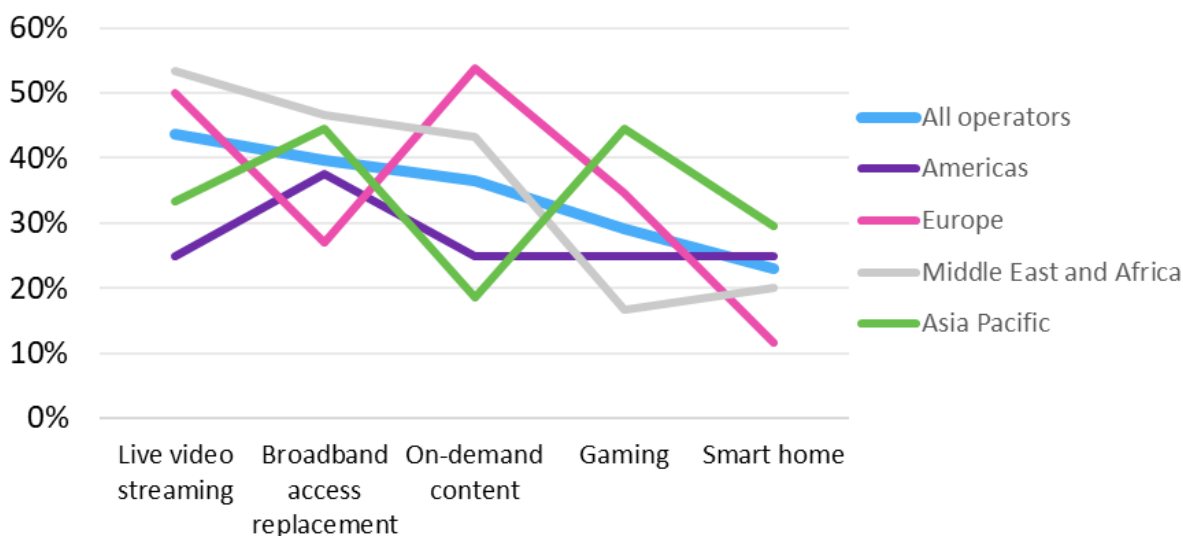
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In the Asia Pacific region where e-sports are highly developed, gaming receives a high ranking. But European operators - perhaps looking back on their recent experience of lockdown—cite on-demand content.

Manufacturing draws most attention

Making decisions about enterprise 5G presents challenges too. As other Omdia research has found, 5G's expected multi-trillion-dollar benefits are unevenly distributed by industry. But manufacturing usually places first. The survey replicated this view (see Figure 11), with IT, media, and broadband next.

Figure 11: Manufacturing is the top target for 5G pursuits

Figure 11: Manufacturing is the top target for 5G pursuits

Which industries offer the best 5G revenue opportunities?

Legend:
- ■ Deployed 5G operators
- ■ Equipment vendors
- ■ Integrators
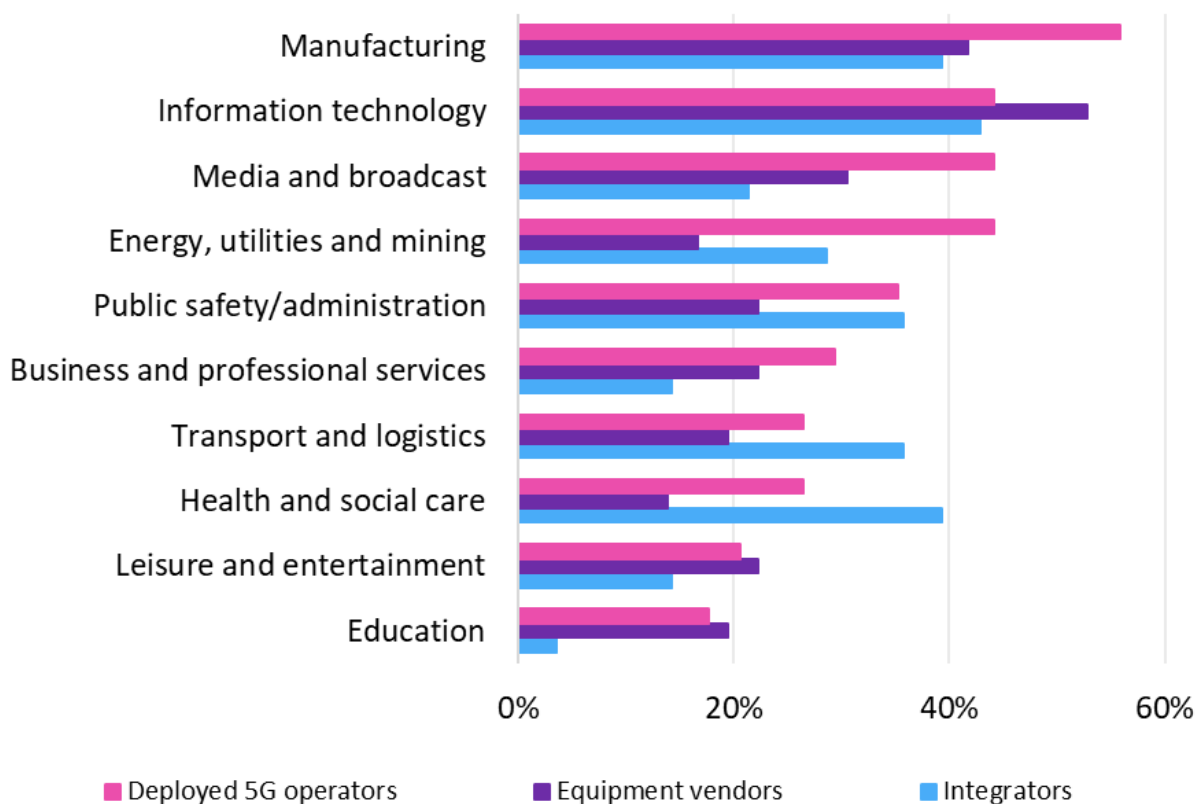
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Energy, utilities, and mining split respondents: operators are keen on these industries, but equipment vendors less so. Be wary of these results: views are in flux, and dependent on local conditions.

National context will determine 5G outcomes

Developing a successful 5G strategy is proving to be a complicated business. This is due in part to varying national spectrum policies, economic development and demographics as much as rollout complexity. Generalizing findings into global truths can be dangerous at this early stage.

For enterprise 5G, the composition of the local economy is particularly important. Mining is a dominant industry in Australia, Brazil and China yielding attractive opportunities, but this is not the case everywhere. Like it or not, 5G market makers must do their homework—and this will have to be on a country-by-country—and industry-by -industry basis.

Buying 5G services

Most enterprises still at exploratory stage

Although eight out of 10 enterprises say that COVID-19 has not deterred them from 5G, the reality is that the majority have yet to build concrete investment cases. Researching and evaluating the capabilities of 5G is still the main activity for the bulk of enterprises surveyed.
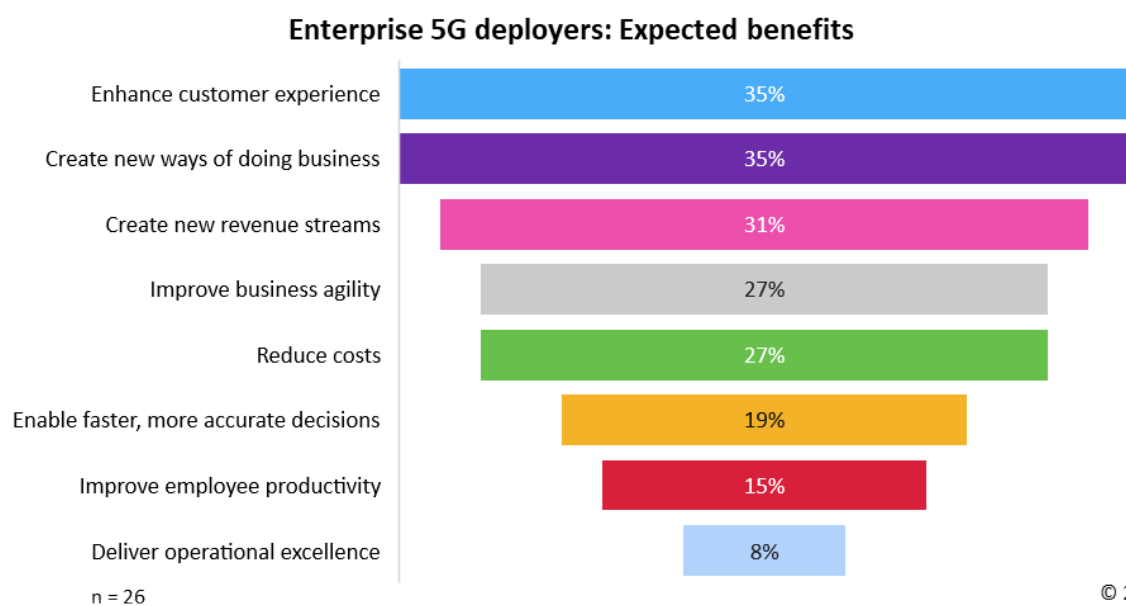
Early 5G adopters have high expectations

Meanwhile, the motivations of actual enterprise 5G deployers are important to highlight: Reasons to invest in 5G are focused on exploring new frontiers. These early adopters are seeking new ways to interact, new business models and ways to make money (see Figure 12). This is an ambitious and sophisticated set of needs for a technology to satisfy - far beyond what enterprise technology buyers usually desire.

5G suppliers should take heed: selling 5G successfully to enterprises like these will demand more than technology expertise. To satisfy expectations and win trust in an increasingly competitive market, a more intimate and nuanced understanding of the challenges, business processes and human workstyles in respective industries is required. And, not least, 5G suppliers must be willing to co-create in order to deliver business impact that enterprises want to achieve.

Figure 12: New ways of engaging and doing business are 5G's biggest draws

Figure 12: New ways of engaging and doing business are 5G's biggest draws

Enterprise 5G deployers: Expected benefits

Benefit	%
Enhance customer experience	35%
Create new ways of doing business	35%
Create new revenue streams	31%
Improve business agility	27%
Reduce costs	27%
Enable faster, more accurate decisions	19%
Improve employee productivity	15%
Deliver operational excellence	8%

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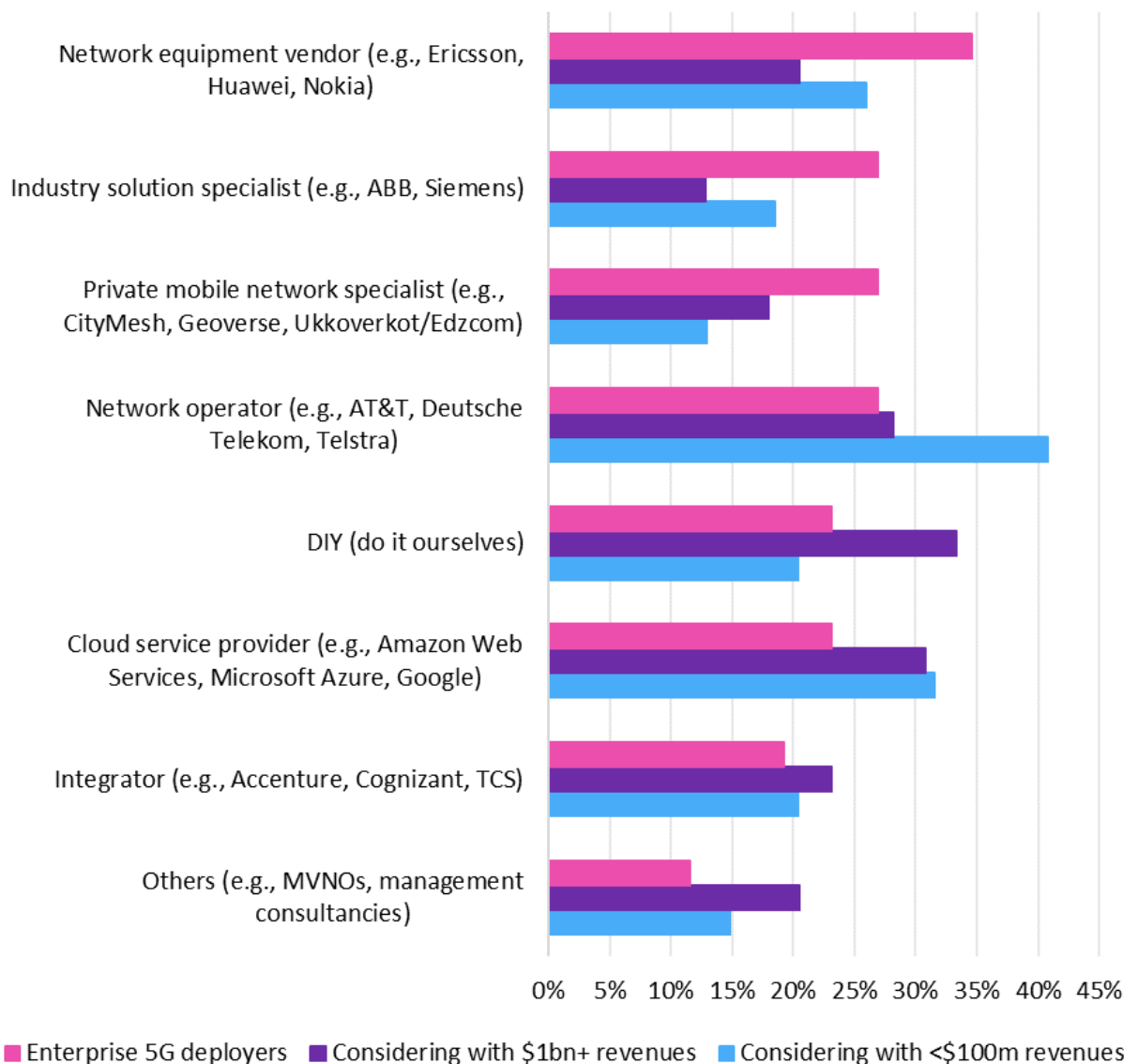
Choosing a trusted partner

The enterprise 5G ecosystem is fluid and evolving, but some patterns are emerging, notably in the selection of enterprises' preferred partners. This is a critical consideration given the growing democratization of spectrum across several countries that empowers enterprises to build their own private mobile networks. Will they do this alone? The survey's findings paint a mixed picture.

Network equipment vendors are currently the lead partners by far for enterprises that have taken the financial plunge to invest in 5G (see Figure 13).

Figure 13: Enterprises' preferred 5G partners vary by company size

Figure 13: Enterprises' preferred 5G partners vary by company size

Enterprises: Who do you trust most to execute your 5G strategy?

Network equipment vendor (e.g., Ericsson, Huawei, Nokia)

Industry solution specialist (e.g., ABB, Siemens)

Private mobile network specialist (e.g., CityMesh, Geoverse, Ukkoverkot/Edzcom)

Network operator (e.g., AT&T, Deutsche Telekom, Telstra)

DIY (do it ourselves)

Cloud service provider (e.g., Amazon Web Services, Microsoft Azure, Google)

Integrator (e.g., Accenture, Cognizant, TCS)

Others (e.g., MVNOs, management consultancies)

0% 5% 10% 15% 20% 25% 30% 35% 40% 45%

■ Enterprise 5G deployers ■ Considering with $1bn+ revenues ■ Considering with <$100m revenues

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What's also notable is the tight group of organizations that come next in line: it includes industry solution specialists, private mobile network specialists and (public) network operators.

This finding confirms—as previous Omdia research has suggested—that the current wave of enterprise private 5G deployments involves multiple partners working in concert, with the equipment vendor most likely to be the prime contractor.

Large enterprises favor do-it-yourself 5G

Among enterprises that have yet to deploy public or private 5G, different patterns are evident that may be troubling to some 5G market stakeholders. First, there is a distinct ambition for more command and control over 5G among the very largest enterprises, the top customer target for many 5G suppliers. More than a third of enterprises with $1 billion or more in revenues believe they are themselves the best placed to execute on their 5G strategy.

If they must partner, then their number one choice is a cloud hyperscaler like Amazon Web Services. The second-tier partners for large firms are operators and integrators. This may indicate a division of responsibilities (e.g., operators simply perform connectivity tasks) that may limit access to total contract value.

Midmarket firms are most loyal to telcos

Highly relevant also are the preferences of "Mittelstand" enterprises. This term describes the middle class of enterprises—typically with revenues of under $100 million and a few hundred employees. With complex needs, but fewer in-house technical resources than big firms, they are outward looking for assistance. For 5G, their top trusted partner choice is an operator—and by some distance.

Application-specific 5G-in-a-box solutions could be very attractive to this segment—and these are now appearing from service providers including Vodafone. Demographically, these midmarket firms include many manufacturing firms, commonly acknowledged as the top vertical for 5G.

Deploying enterprise 5G

People are the number one target for 5G today. Field force communication is the priority and industrial control comes second (see Figure 14).

Figure 14: In-building 5G is the future focus

Figure 14: In-building 5G is the future focus

Enterprises: How will 5G be deployed in your organization?
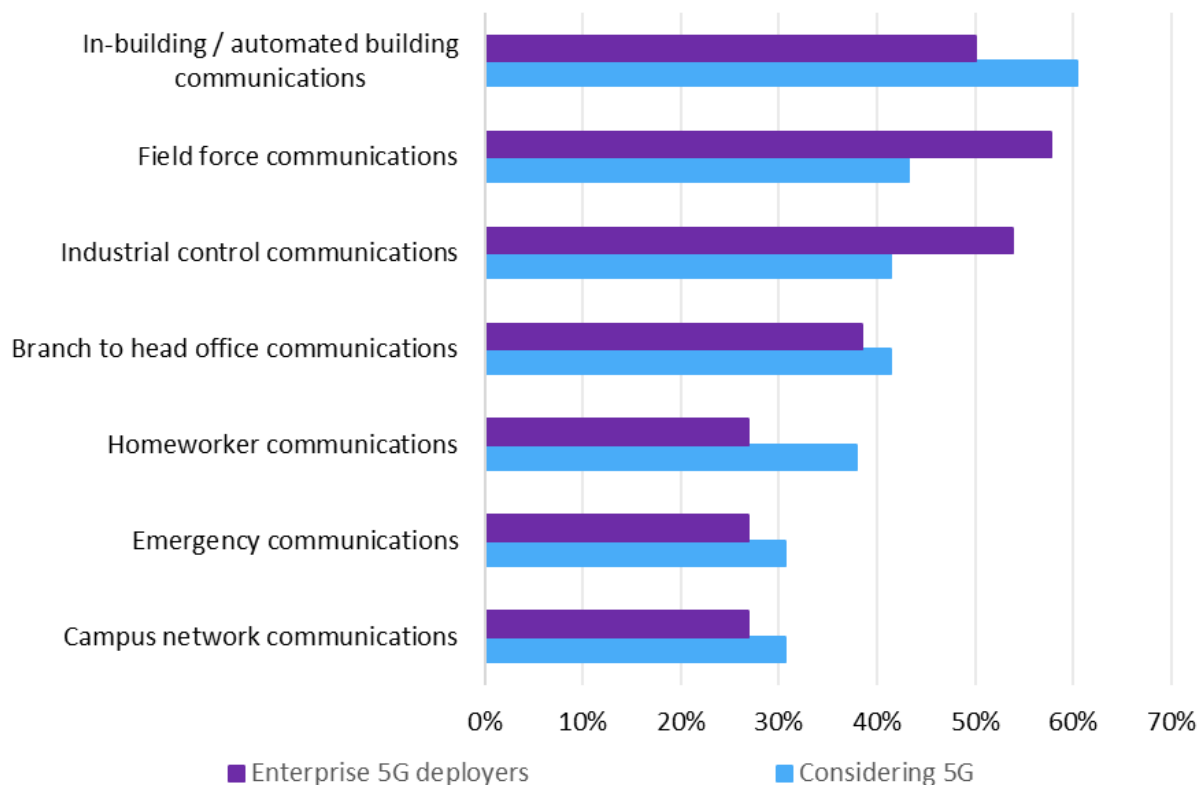
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However, those considering 5G in the future have another focus: improving in-building communications.

To entice crowds to return, more owners of offices, stadiums, stations and other venues will explore 5G to create safer, smarter and more enjoyable spaces. This is a major finding for established suppliers in the built environment, such as building automation firms Honeywell, Siemens and Schneider Electric. Like it or not, 5G is bringing change—but also the potential for new partnerships and service opportunities.

Don't overlook 5G's human factor

Wi-Fi is the main technology that 5G is supplanting according to enterprises surveyed, but some also cite private LTE and industrial protocols. Enterprises want 5G to support new applications: the top three are real-time video streaming, augmented reality and enhanced security and surveillance.

What's clear from deployment trends is that enterprise 5G is not just about connecting devices and machinery (e.g., things). It is also about helping workforces be safer, empowered and more creative. 5G suppliers must be as clued in about an industry's human workstyles as its operational processes.

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