

# Industries and enterprises are ready to reap the benefits of 5G

CSPs need to learn how to satisfy demand, in partnership

RESEARCHED BY

**OMDIA**

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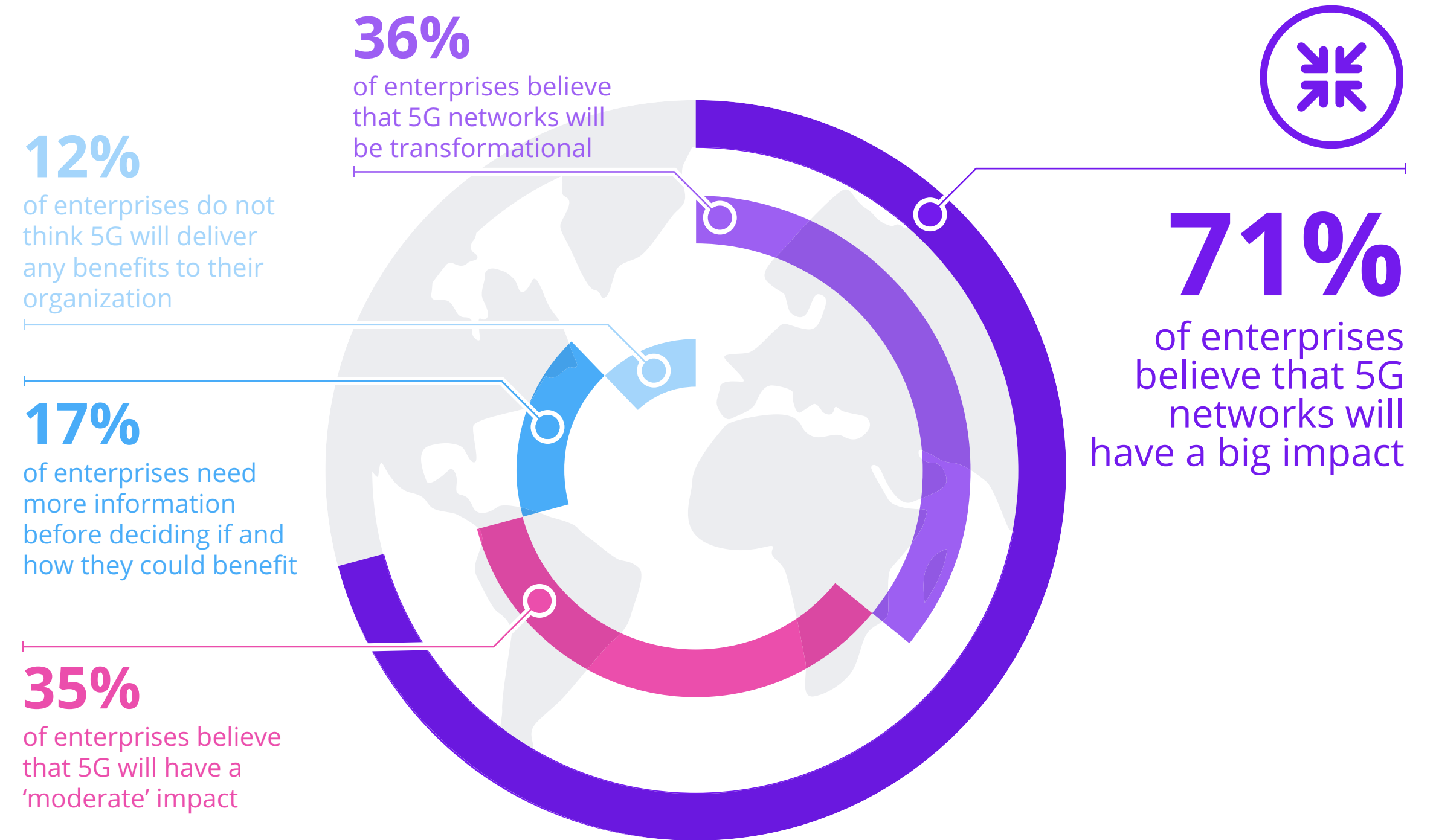
# Everyone is talking about 5G, and enterprises believe in its transformational potential

## 5G – GLOBAL EXPECTATIONS ARE HIGH

Enterprises take time to embrace new technologies, but 5G appears to have captured their attention at an early stage. Even though 5G was only introduced to the market for the first time in April 2019, 36% of enterprises already believe 5G networks will be transformational, according to the Omdia ICT Enterprise Insights 2019/20 survey.

Though 5G for enterprises is at an embryonic stage, the potential of 5G is substantial: businesses expect the technology to lead to productivity gains, enable automation, reshape customer experience, and facilitate product enhancements.

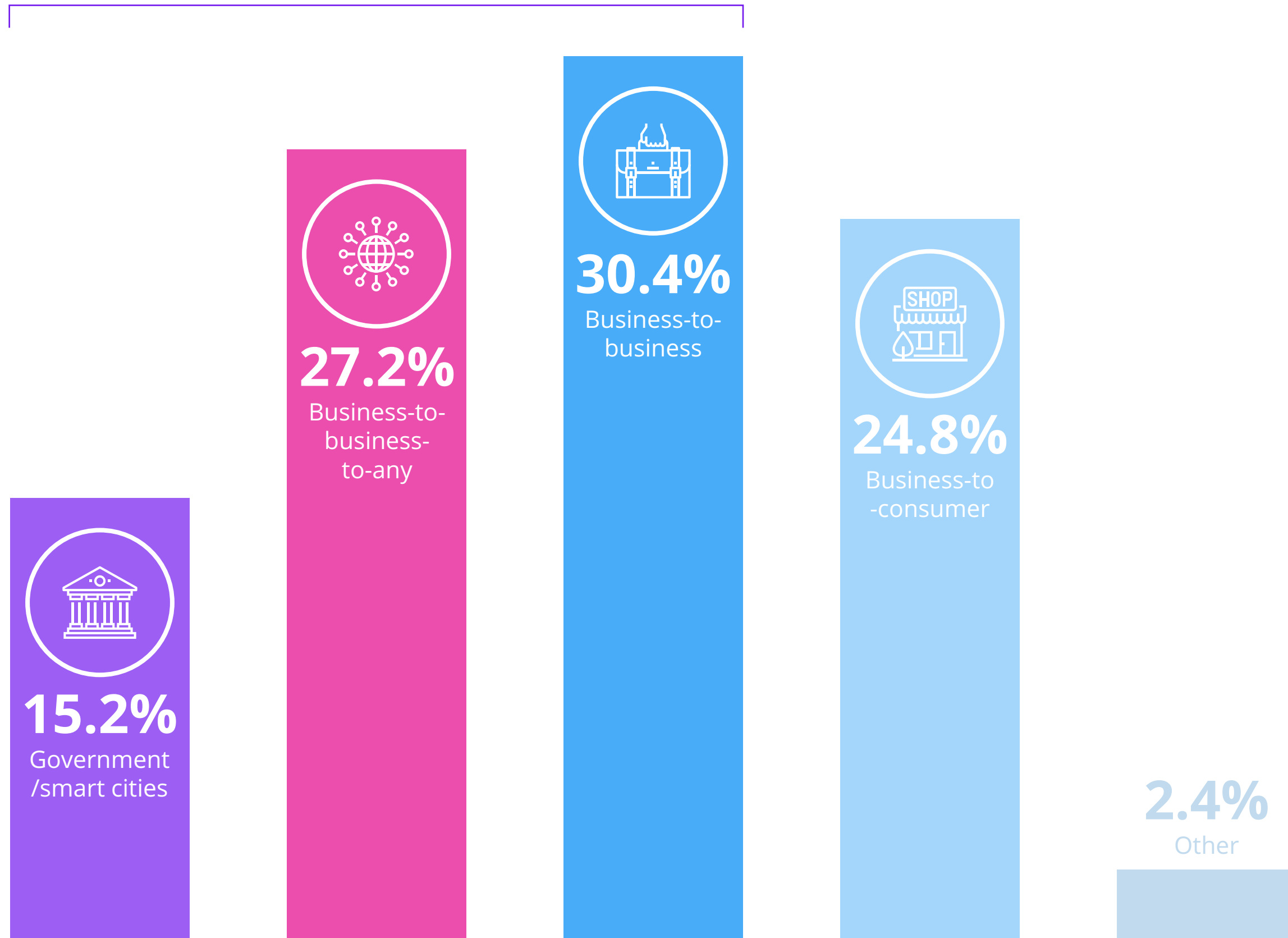
Omdia, believes that, more crucially than all of the above, 5G will be a catalyst for the creation of new commercial and business models. Mobile, platform-based businesses were made possible by 4G; 5G promises to do the same for a broader set of industries.



SOURCE: OMDIA ICT ENTERPRISE INSIGHTS 2019; GLOBAL; N = 465; HOW TRANSFORMATIONAL DO YOU CONSIDER 5G TO BE?

# 72.8%

of telcos believe that most 5G revenues will be derived from B2B, B2B2C or Government/smart cities opportunities



SOURCE: INFORMA TECH 5G WORLD SERIES MARKET SURVEY 2019; N = 125; IN WHAT AREAS DO YOU THINK TELCOS WILL GET THE BIGGEST REVENUE GROWTH FROM 5G (%)?

## 5G IS CLEARLY SEEN AS PRIMARILY A B2B OR B2B2X OPPORTUNITY

In 2019, CSPs started deploying their networks. There are now more than 40 CSPs offering 5G-eMBB and approximately 25 offering 5G-FWA. In 2020, 5G will go big across the globe. Currently, most of the propositions are aimed at consumers, but early experience suggests that consumer 5G has led to a slowdown in ARPU decline but not to an uptick in consumer revenue. This is why CSPs are abuzz with talk about the opportunity for enterprise 5G. And the news may be good: like enterprises, almost three-quarters of CSPs believe B2B is a huge opportunity. But there is a problem.

CSPs have, in general, not become strategic suppliers for enterprises: mobile connectivity is still perceived to be a commodity. Coupled with this, CSPs are still unable to offer tailor-made services in a timely, cost-effective, and scalable manner. Given that Omdia is already seeing signs that the focus of 5G will be on a combination of horizontal and industry-specific applications, CSPs may be bypassed by other ICT suppliers in a 5G world.

*“CSPs agree the greatest opportunities for new 5G revenues will come from B2B segments, but CSPs have a mixed track record monetizing enterprise opportunities”*

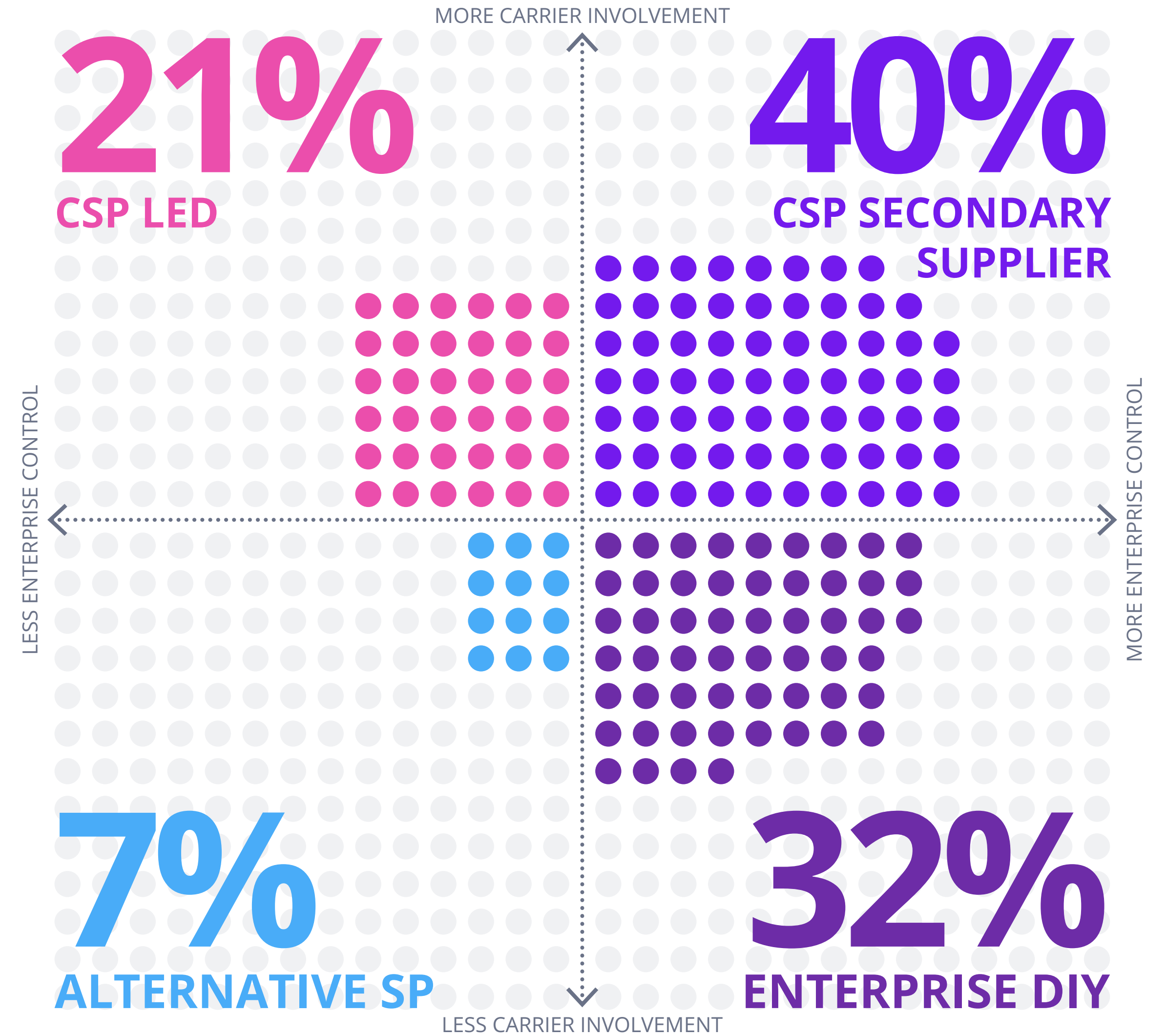
## NEW MODELS OF PROVISION ARE EMERGING

Omdia's Enterprise 5G Innovation Tracker reveals a worrying trend for CSPs:

- The most popular model, at nearly 40% of deals, is for vendors to work with enterprises and CSPs, assisting enterprises with the business case and in solution design, with the CSPs relegated to providing connectivity.
- The second-most popular model is for enterprises to do it themselves, selecting a vendor and brokering for CSP connectivity. This is most typical of early adopters, the businesses keenest to invest in new technology.
- Of all deals captured to date, CSP-led deals, where a carrier sells and manages the service for the enterprise without the equipment vendor or other parties having a role in the customer relationship, are in a small minority (just 21%).

The bottom line is that CSPs are already being cut out of strategic engagement and solution building with enterprise partners. For them to fully profit from enterprise 5G, this situation needs to change. CSPs are in danger of taking the wrong approach to the enterprise 5G opportunity.

*“The enterprise opportunity is already slipping through the fingers of CSPs”*



SOURCE: OMDIA

# Don't think 5G first; think business-first

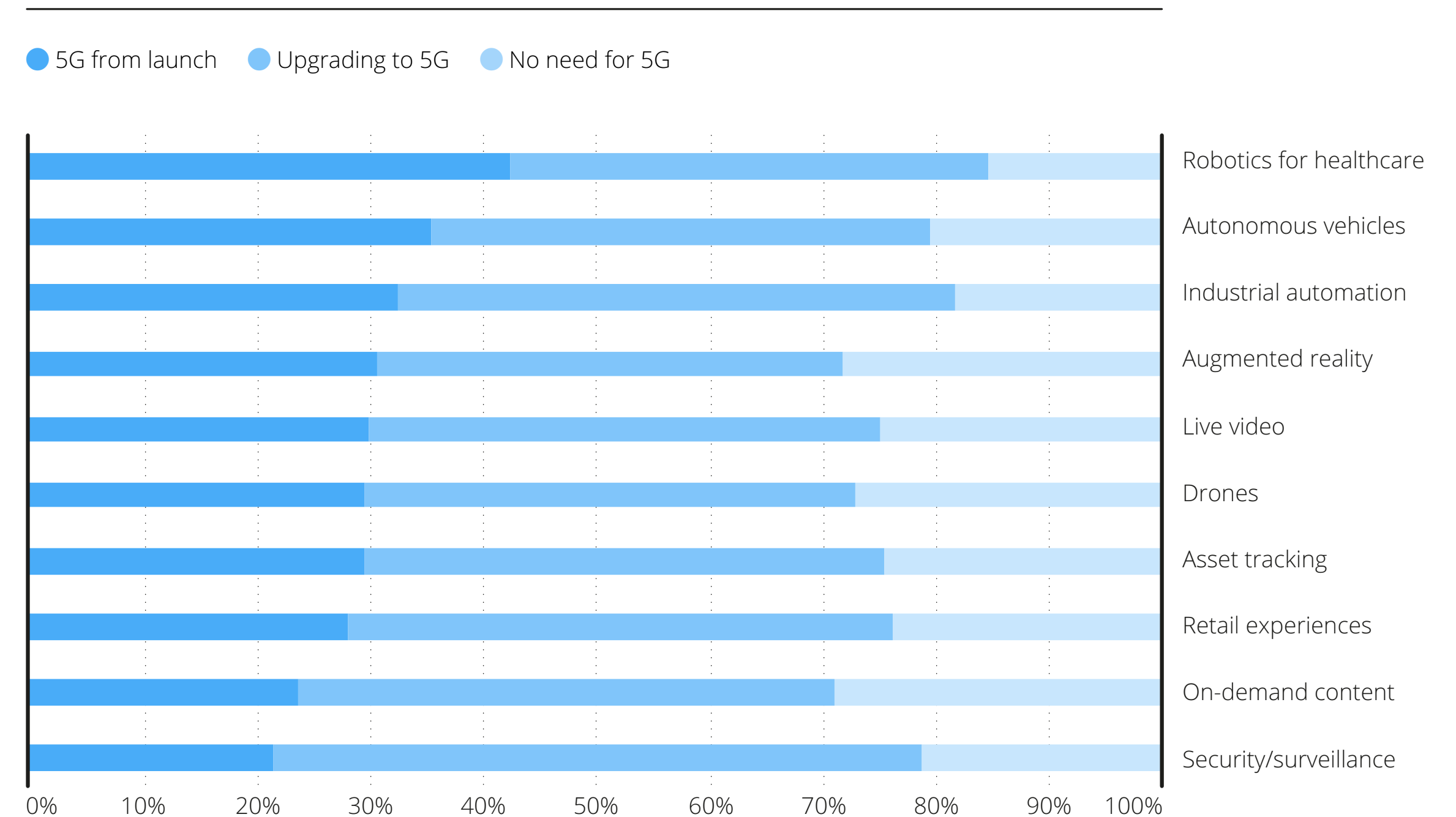
## 5G AS DIGITAL ENABLER OF CRITICAL ENTERPRISE SOLUTIONS

Enterprises have already made the connection between 5G and applications. Overall, 5G will have two positive effects: it will act as a catalyst for those enterprises that are still hesitant about the deployment of specific applications, and it will enhance certain applications that are going to be deployed anyway. The result is that 5G will push decision-makers over the line, not only to invest more in connectivity but to invest more in applications that will perform better as a result of 5G connectivity.

For some applications, CSPs have little traction with enterprise decision-makers. Applications such as physical security and monitoring, asset tracking, and industry-specific machinery, for instance, are areas in which CSPs will rarely lead the discussion with decision-makers. However, these applications, and others like them, will form part of new solutions to business problems that may be transformational for the customer. Realizing this potential depends on the integration of multiple technologies and providers and a combined approach between technologists and industry specialists.

The upshot is that CSPs will only realize value from 5G if they can identify, partner, codevelop, implement, and run a proposition with application-specific and industry-specific specialists. CSPs that can orchestrate such a complex web of relationships will be capable of capturing a greater share of the market and will not be relegated to being one of many connectivity providers competing solely on price.

Which of these applications are you planning to deploy, with which technology?



SOURCE: OMDIA

*CSPs will need to adopt a new way of solving problems – applications first and ecosystem centric.*

## 5G VALUE WILL BE REALIZED IN THE CONTEXT OF THE VERTICAL INDUSTRIES...

As an enabler of business solutions, 5G's value will be realized through industry-specific processes, supply chains, partnerships, and applications. Globally, the economic value of 5G will account for \$13.2tn, or 5% of global output.

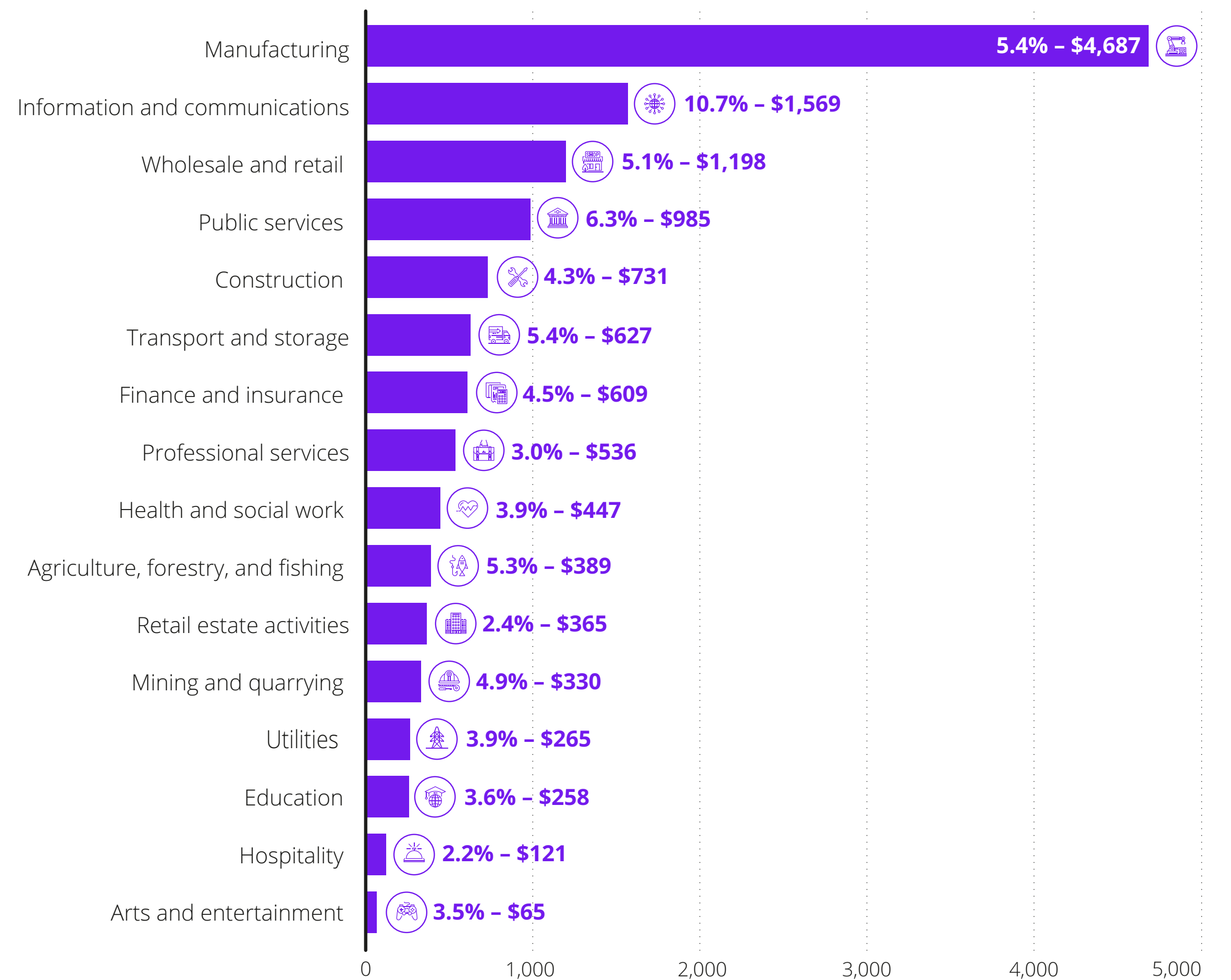
Omdia's Enterprise 5G Innovation has revealed that in this early stage of 5G development, manufacturing, transport, utilities and energy/mining account for nearly 80% of enterprise deals. As illustrated in the previous chapter, CSPs are not necessarily taking a central role in this deal-making.

Omdia expects this activity to continue, especially as enterprises in Europe and North America begin to access alternative forms of spectrum not controlled by CSPs, such as CBRS in the US and local-use in countries such as Germany, Netherlands, Sweden, Finland, Japan, and the UK.

Manufacturing stands to realize more 5G value than any other industry, representing 5.4% of output, the joint fourth-highest percentage, tied with transport and storage.

*"Many claim 5G will have a transformational impact on industries. In Omdia's view, this transformation is already starting to happen."*

Value attributable to 5G by industry (\$bn and % of total)












SOURCE: OMDIA

## ...AND DELIVERED BY 5G-ENHANCED DIGITAL EMPLOYEES

The digital employee is an opportunity, often ignored, for CSPs to make a start in enterprise 5G. The shift to service jobs is well known, but it is, perhaps, less well understood that manufacturing and trade jobs are changing as well, incorporating more skills from the domain of knowledge workers. The key challenge is providing the digital tools to serve these upskilled digital employees.

As a result, CSPs need to look at mobile-first productivity apps, extending access to information and enterprise systems out into the field, and advanced media experiences such as virtual reality (VR) and augmented reality (AR). VR/AR and haptic applications are demanding in bandwidth, and even more so in latency, and therefore stand to benefit most of all from 5G.

.....  
*“The challenge for CSPs going into 2020 is to turn 5G into a tool to enhance employees’ efficiency. Relevant use cases and vertical solutions will be important in realizing these opportunities, but most of these 5G-boosted tools will only be cocreated and delivered in partnership.”*  
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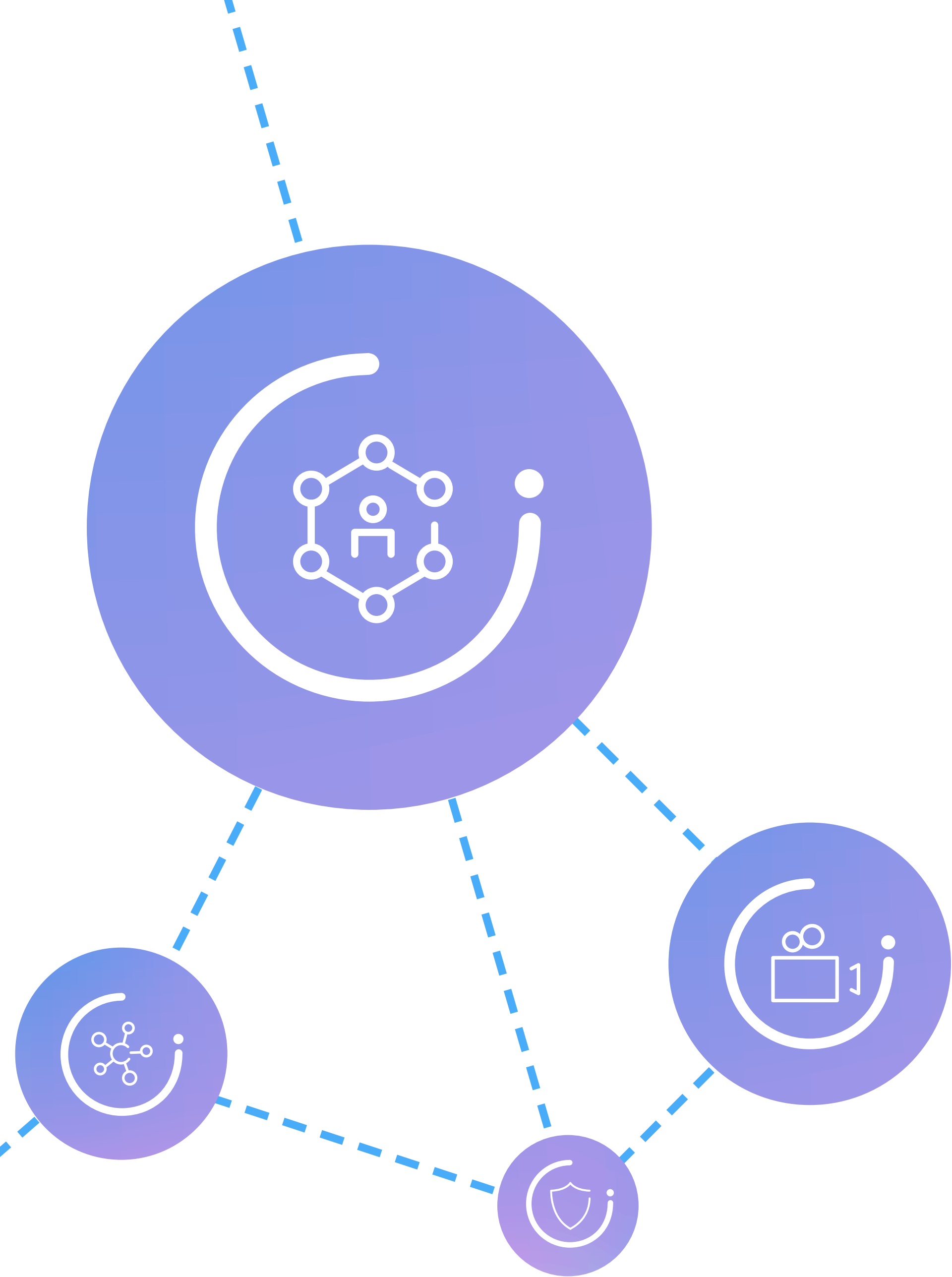
	 <b>Work surfer</b>	 <b>Free mover</b>	 <b>Holster nomad</b>
<b>Description</b>	Job requires a fixed position to perform tasks in multiple ad hoc locations	Job tasks are both stationary and mobile in multiple locations	Job requires high mobility to work in multiple locations
<b>Task mobility</b>	Ⓜ Stationary	Ⓜ Hybrid	Ⓜ Mobile
<b>Environment</b>	 <b>Mainly indoors</b>	 <b>Indoors/outdoors</b>	 <b>Indoors/outdoors</b>
<b>Occupations</b>	Freelance web developer, virtual assistant, IT contractor	Architect, photographer, surveyor	Field service engineer, skilled trades, home health aide
<b>5G impact</b>	 <b>High</b>	 <b>High</b>	 <b>High</b>
<b>5G enrichment examples</b>	<ul style="list-style-type: none"> <li>• Rapid data processing</li> <li>• Secure ideation platform</li> <li>• Augmented visualization</li> </ul>	<ul style="list-style-type: none"> <li>• Live data sharing</li> <li>• Augmented visualization</li> <li>• Drone data capture</li> </ul>	<ul style="list-style-type: none"> <li>• Live safety monitoring</li> <li>• Sensor data access</li> <li>• Voice-controlled apps</li> </ul>

SOURCE: OMDIA

## CSPS ARE TRAPPED BY THEIR THINKING

“What’s the opportunity for 5G?” they ask. This is the wrong question. They should be asking how they can help key industries to achieve their digital transformation by offering new solutions to their business problems.

In the Internet of Things, CSPs tended to concentrate too much on pure connectivity while also insisting they owned the value chain. It is imperative that they do not repeat the same mistakes in 5G. An ecosystem of partners is crucial to deliver the full value of 5G connectivity.





# A brave new world, with partners at the center

## DELIVERING THE PROMISE: WHAT IT TAKES

Making these impressive numbers (5% of global output) a reality is a major challenge and one that will change the industry and how it does business. Enterprises need more than just connectivity, but connectivity remains at the heart of the problem, and CSPs will need to face up to new competitors and learn how to deliver in different ways. At the same time, enterprise customers usually want connectivity in order to deploy applications of one sort or another, and with very few exceptions, these will come from outside the telecoms industry. Service platforms, management tools, and data-centric applications will all be important.

Tailored, customer-specific solutions are likely to be increasingly important, challenging the classic telecoms business model in which mobile networks are built on a national scale by major CSPs on a one-size-fits-all basis to deliver a product defined centrally by CSP marketers and implemented in CSP BSS/OSS systems. Instead, solutions will be cocreated and jointly delivered by service providers, their suppliers, and their specialist partners. This will require CSPs to transform their BSS/OSS to a digital platform that enables them to orchestrate these ecosystems.

As well as working with partners for the applications and service-enablement layers, CSPs will have to increasingly work with the customer as a partner to cocreate tailored solutions, or they will be squeezed out by players that are willing to do so. These might be network vendors, whether the classic big names or a new generation of startups, or a new class of alternative service providers.

.....  
*“The promise of enterprise 5G is there for the taking, but CSPs must realize they will need to master ecosystem orchestration, including joint go to market with vendors and cocreation with customers.”*  
.....

## CSPs WILL NEED NEW STRATEGIC PARTNERS TO SUCCEED, EVEN IN CONNECTIVITY

Omdia survey data suggests enterprises see CSPs as connectivity providers, period.

In late 2019, Omdia asked businesses in Asia-Pacific which players they trusted to deliver the different elements of an Internet of Things project.

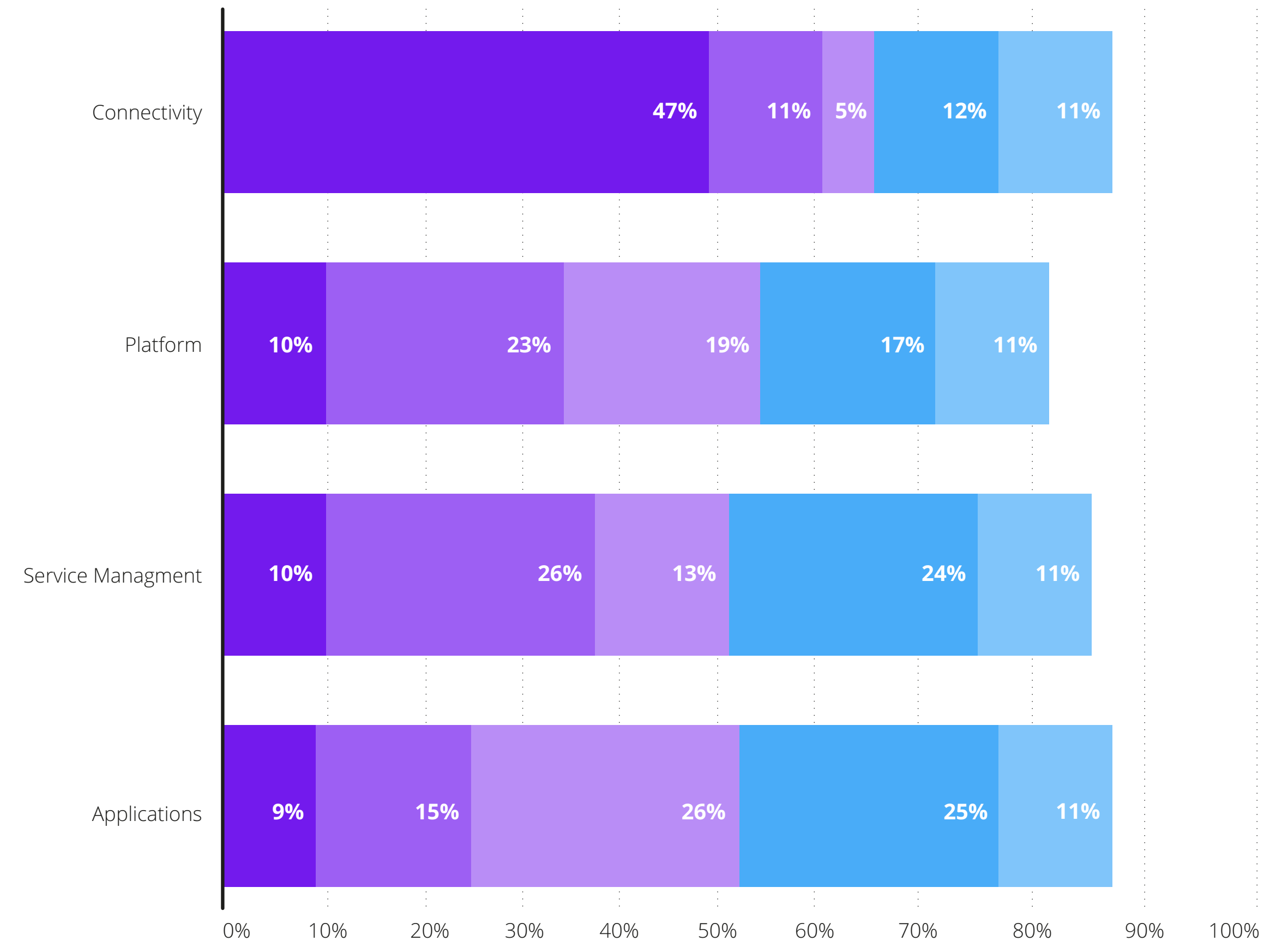
Not surprisingly, connectivity was the only element where the CSPs came top. The applications and service management domains, widely considered the higher-value segments, are already dominated by other players.

Worryingly though, half the respondents were willing to turn to some other player than a CSP for this connectivity. It seems that connectivity provision is being democratized in mobile as it was earlier in the fixed domain.

*“Being number one in connectivity is no longer guaranteed; partnering is necessary both in the connectivity and the added-value layers.”*

### Which players do you trust to deliver the different elements of an Internet of Things project?

● CSPs ● System Integrators ● Software Vendors ● IoT Specialists ● Don't Know



SOURCE: OMDIA EMERGING ENTERPRISE SERVICES SPOTLIGHT: 5G IOT SERVICES IN ASIA-PACIFIC 2019; N=229

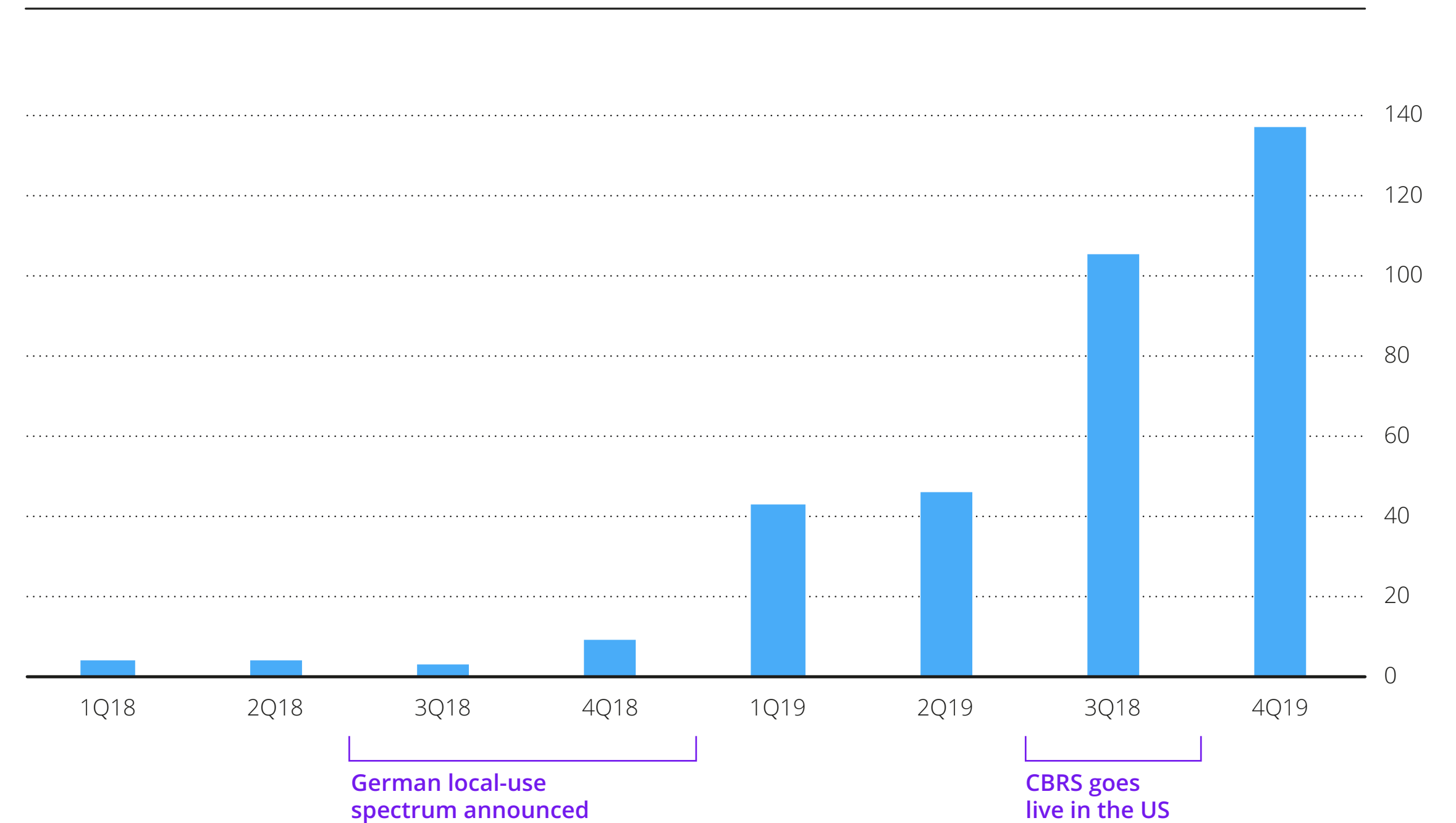
## THOUSANDS OF OPPORTUNITIES DEPEND ON CSPs LEARNING TO BE PART OF AN ECOSYSTEM

The launch of local-use spectrum in Germany and the US drove a massive surge of testing and trials activity as a wide range of enterprises, CSPs, technology vendors, and others flocked to access free radio spectrum. Omdia expects this phenomenon to repeat itself as more countries open up local-use spectrum.

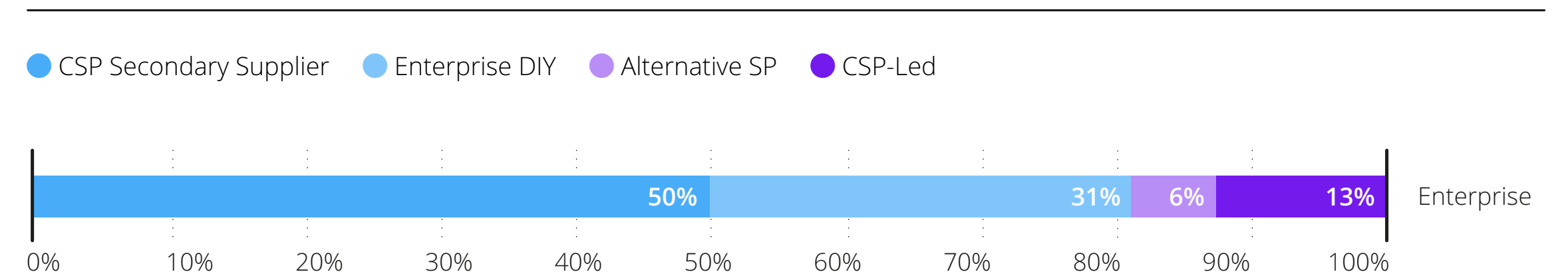
Half the rollouts initiated by enterprises use the “CSP secondary supplier” model, while 31% pursued “enterprise DIY.” Evidently, CSPs are allocating too much development and marketing effort to unilateral CSP-led projects, while their enterprise customers want more access to vendors and others, in short, more control.

*“As enterprises are increasingly actors in their own right, CSPs will increasingly become dependent on a broader ecosystem to reach them.”*

Total Enterprise LTE & 5G Projects, Quarterly



Projects by Customer Type



SOURCE: OMDIA ENTERPRISE 5G INNOVATION TRACKER

## A MORE DIVERSE SUPPLIER LANDSCAPE IS AN OPPORTUNITY, NOT A THREAT

### Who will make up the future enterprise 5G ecosystem?

These results should not be surprising. Omdia’s ICT Enterprise Insights 2019/20 survey suggests that alternative service providers and network vendors are beginning to rival CSPs. However, they were much more trusted than alternatives such as DIY or using a systems integrator, at least for the connectivity element.

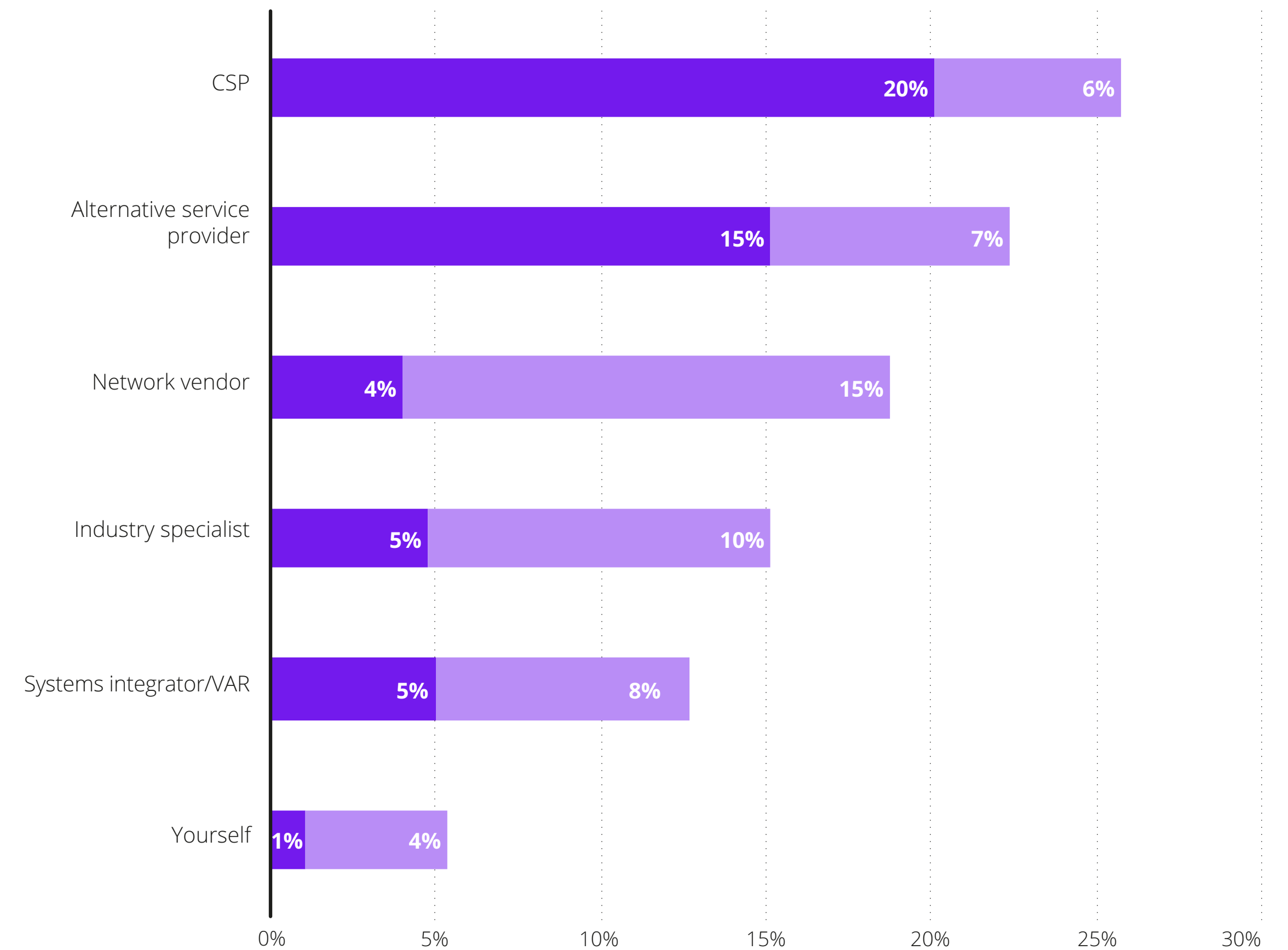
This is reassuring, but a score of 26% globally is still not anywhere near what CSPs, companies whose core business is connectivity, should be getting.

Putting it all together, the conclusion is that the future supplier landscape is likely to be much more diverse. CSPs currently see this as a threat, if they see it at all; it has to become an opportunity if they are to make a success of 5G.

*“The future industry landscape will be very different. Vendors are more diverse, enterprises are players in their own right, and CSPs will have to make a virtue of working through a broader ecosystem.”*

### Which type of supplier would you trust most to deliver the benefits of 5G for your organization?

● First Choice ● Second Choice



SOURCE: OMDIA ICT ENTERPRISE INSIGHTS 2019/20: GLOBAL; N=328

# The brave new world means being brave

## THE ECOSYSTEM IS THE KEY TO SUCCESS IN ENTERPRISE 5G

CSPs, and indeed vendors, need to act now in order to secure their share of the opportunity. Deutsche Telekom, for example, has signed a strategic partnership with Ericsson to deploy its enterprise 5G solutions into German industrial companies, very often working with industrial vendors such as Bosch Rexroth or Siemens in multisided partnerships.

On the vendor side, Ericsson is pursuing a strategy of marketing to enterprises through a partner channel including both CSPs and key industrial service providers such as Ambra Solutions of Canada, while some players have begun to sign up key actors from the IT industry. Nokia has a global strategic agreement with Microsoft Azure to cross-promote Nokia's private 5G and SD-WAN products, Microsoft's

Azure Stack on-premises cloud/edge computing solution, and Nokia's own Digital Automation Cloud applications. It is also working with Japanese industrial vendors such as NS Solutions and Hitachi Kokusai Electric.

CSPs can do it too: Verizon and Vodafone are founding partners for Amazon Web Services' Wavelength edge computing product, which integrates the AWS Outposts on-premises cloud solution into a 5G network. But the key issue here is the partnership with the enterprise customer: it has to be more than a simple provider/customer relationship.

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*"Be brave and act now: an ecosystem strategy is crucial both for applications and connectivity."*

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## ...AND PARTNERS ARE CRUCIAL

Major enterprise DIY projects such as that at Audi VW are the nightmare scenario. Audi is deploying as many as 122 private 5G networks without CSP involvement and is getting its digital expertise direct from a cloud provider.

Meanwhile, a new class of micro network operators is emerging, focused on customer intimacy with the enterprises and empowered by new spectrum policies and new vendor technology. Ukkoverkot is the defining example of these new players.

One option is to accept the offer from some of the vendors and act as a channel partner. Ericsson's Industry Connect product, just launched with Telia, is a case in point. The problem here is that CSPs expected better than just a wholesale discount when they embarked on the 5G project, and the risk exists that the vendors – not the CSPs – will build valuable relationships with digital and industrial specialist partners.

Despite this, case studies exist of CSPs getting it right, using connectivity to position themselves as preferred partners for digitization. Verizon Wireless's relationship with Amazon Web Services (AWS) and Telefónica's joint project with Nokia at Minera Las Bambas are proof points here.

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*“With the right ecosystem strategy, CSPs can lead the development of enterprise 5G.”*

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## AUDI VW PREPARES FOR PRIVATE 5G, PARTNERING WITH AWS FOR DATA ANALYTICS

### Private 5G across 122 production plants, but no sign of a CSP

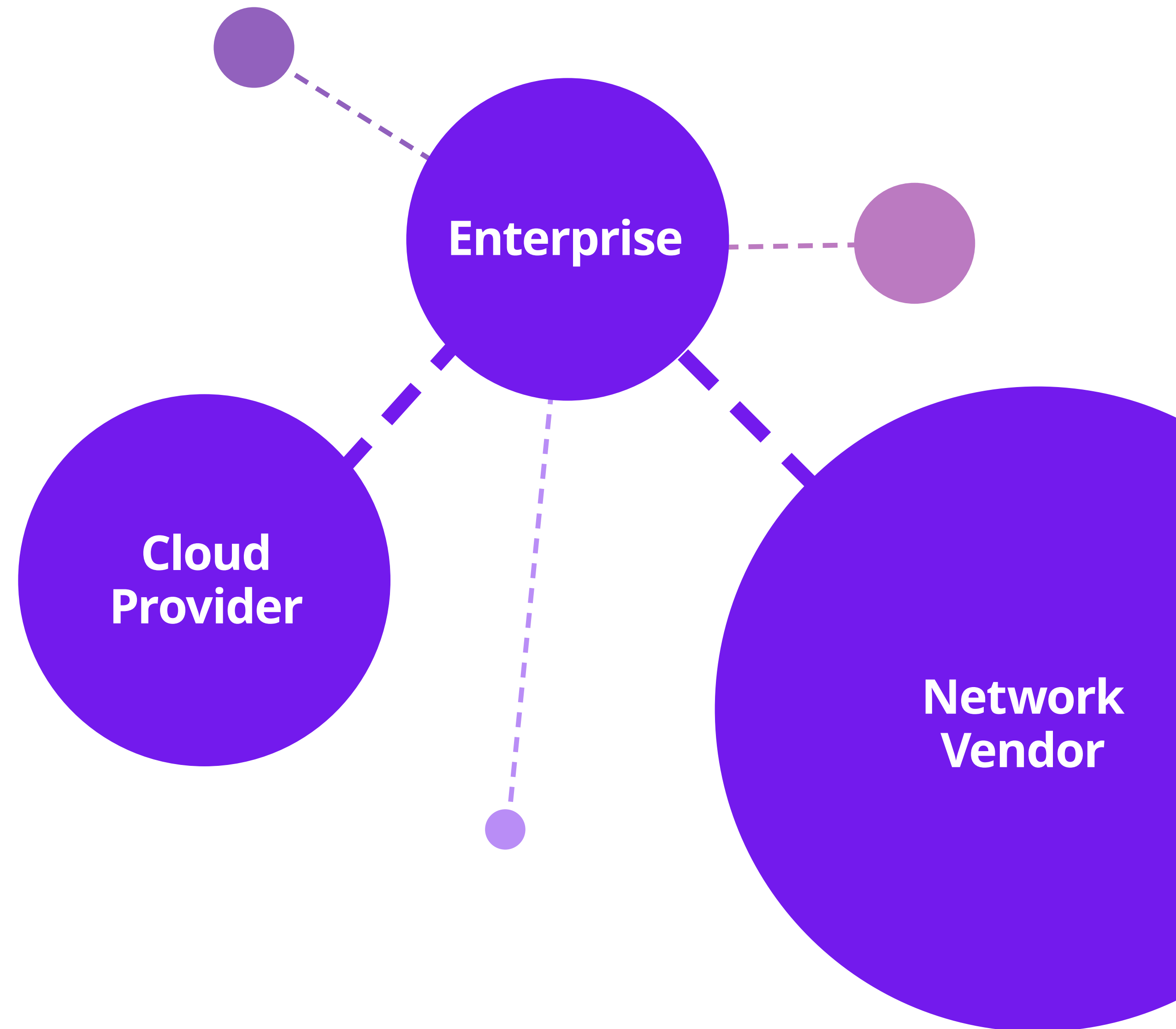
The Volkswagen group has issued an RFP for private 5G networks across its 122 factories, in the context of Germany’s local-use spectrum policy.

VW’s project is part of a much wider “Digital Production Platform” (DPP), intended to create a common architecture for IT and operational technology throughout the company and its supply chain.

The company intends to run its own independent networks, but the data analytics and applications in the DPP are being built as part of a global contract with Amazon Web Services.

It is still open whether the networks will be managed by a CSP, by an alternative provider, or internally, but the pilot deployment uses Ericsson equipment, and Amazon’s role speaks for itself.

*Is there a CSP role here at all?*



## A NEW THREAT: UKKOVERKOT, A NEW MODEL OF PROVISION THAT MIGHT SPREAD

A new kind of “micro network operator,” focused on being the best partner it can be

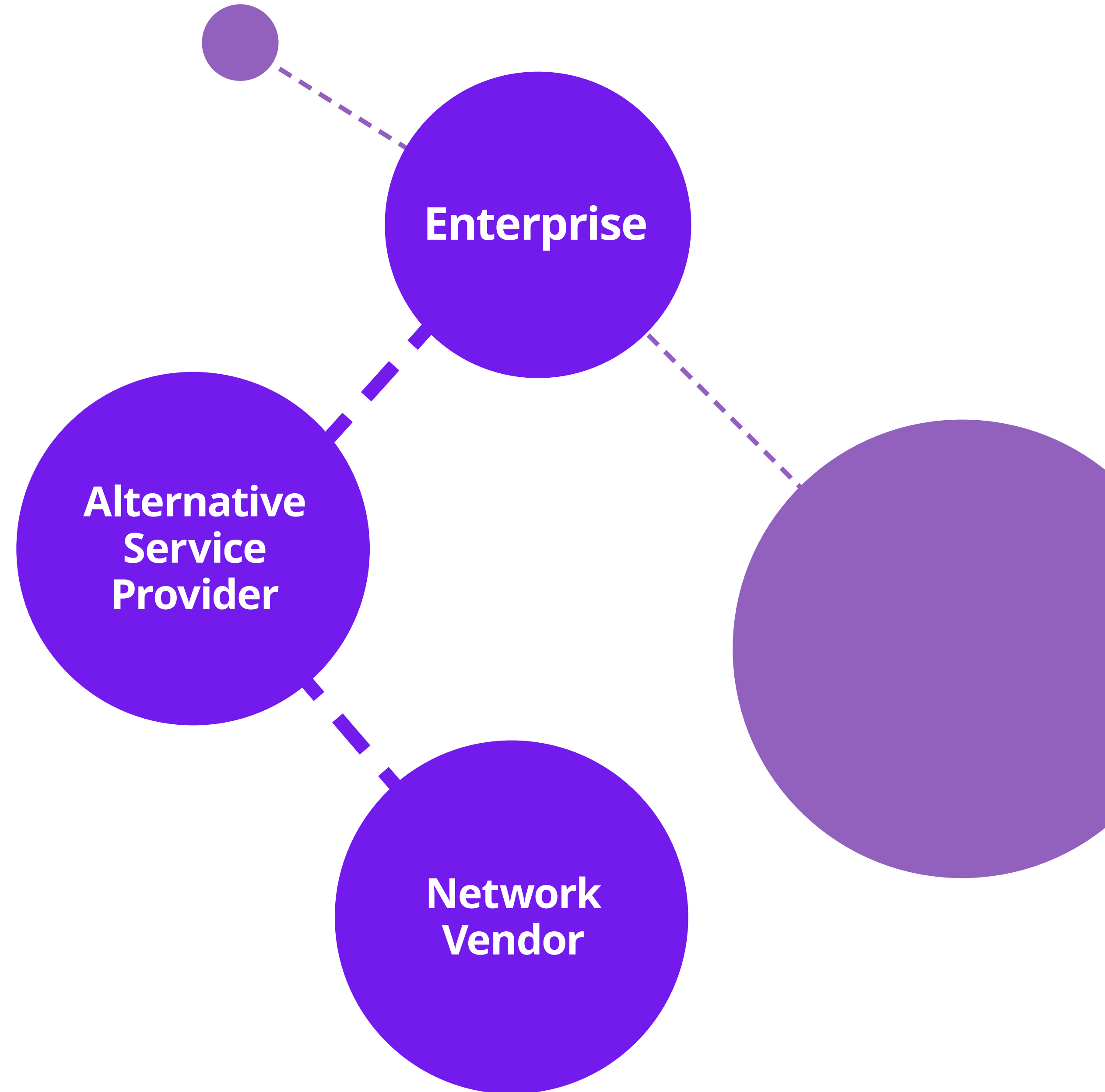
Ukkoverkot of Finland specializes in designing, building, and operating private LTE and 5G networks for industrial and government customers.

These include ports, airports, and the Finnish Defence Forces as well as Kone Cranes, port-automation vendor Kalmar, and Swedish mining-equipment maker Sandvik.

The Sandvik project required Ukkoverkot to lease spectrum from 3 Sweden, clearing an important hurdle to rolling its model out internationally.

Omdia is aware of some other potential players here, including Silicon Valley startups such as Federated Wireless, and German machine-tool manufacturers, Weidmüller Group.

*Increasing availability of local-use spectrum for enterprises around the world is likely to create more opportunities for players like this, focused on close partnership with the enterprises themselves.*





## PARTNERING AS A COMPETITIVE STRENGTH: NOKIA SIGNS UP KEY IT AND INDUSTRIAL VENDORS

### Nokia is adding more and more IT-world and industrial partners

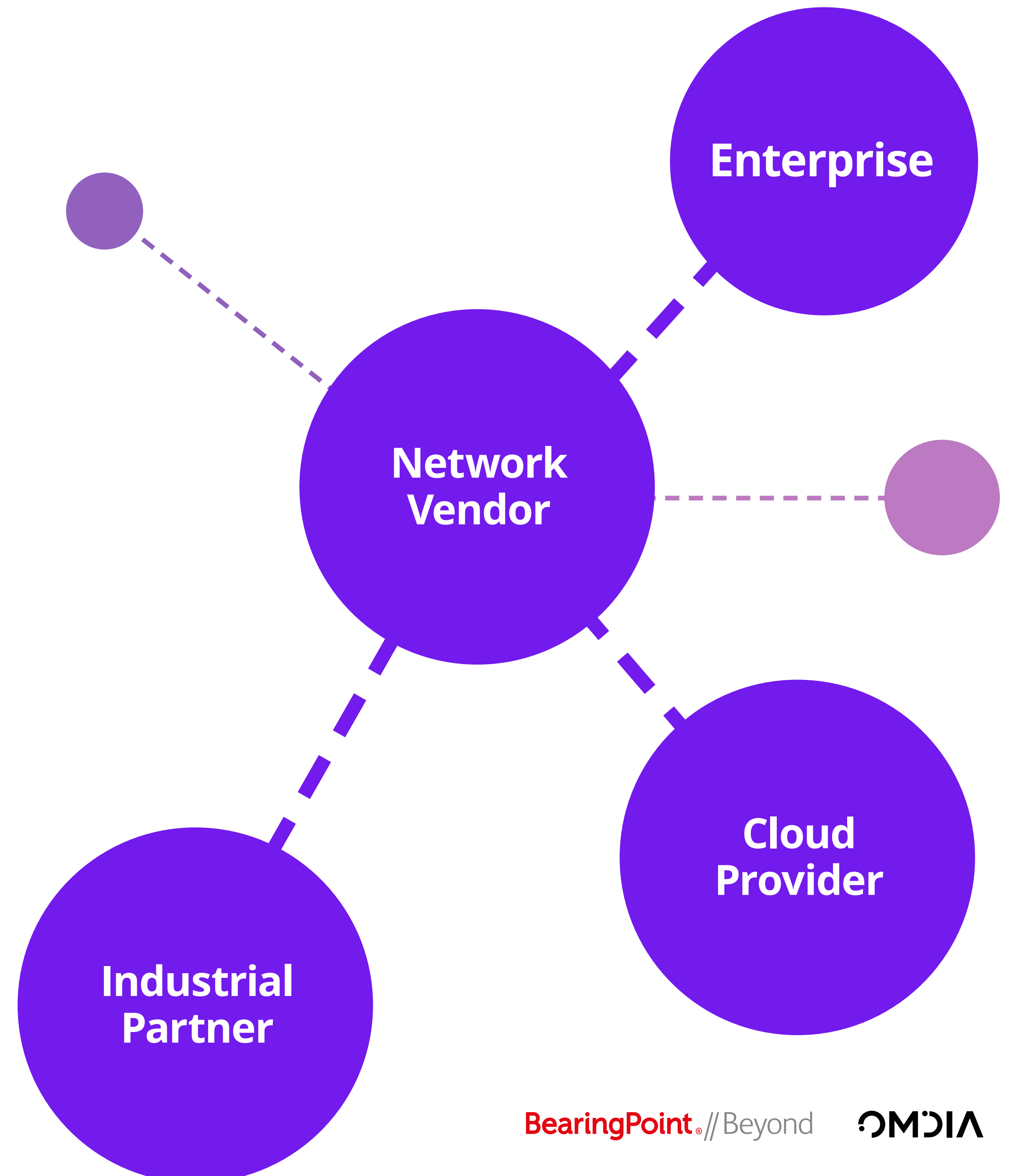
Nokia Networks' strategy emphasizes direct sales to enterprises and their DIY projects more than its competitors' do, although it expects to start more joint venture projects this year.

One way the company is trying to differentiate itself is by adding key digital players and industrial specialists as partners, helping it to access the applications layer.

One of these is Microsoft. Starting in November 2019, Nokia and Microsoft are cross-promoting Nokia private 5G and SD-WAN products with Microsoft's Azure Stack on-premises cloud and its public cloud machine learning products.

In Japan, Nokia prepared for the launch of local-use spectrum by signing up a team of local industrial partners, Hitachi Kokusai Electric and NS Solutions key among them.

*The richness of its applications-level partner network is an important strength.*



## THE CSP AS A CHANNEL PARTNER: TELIA'S PROJECT WITH ERICSSON AND SCANIA

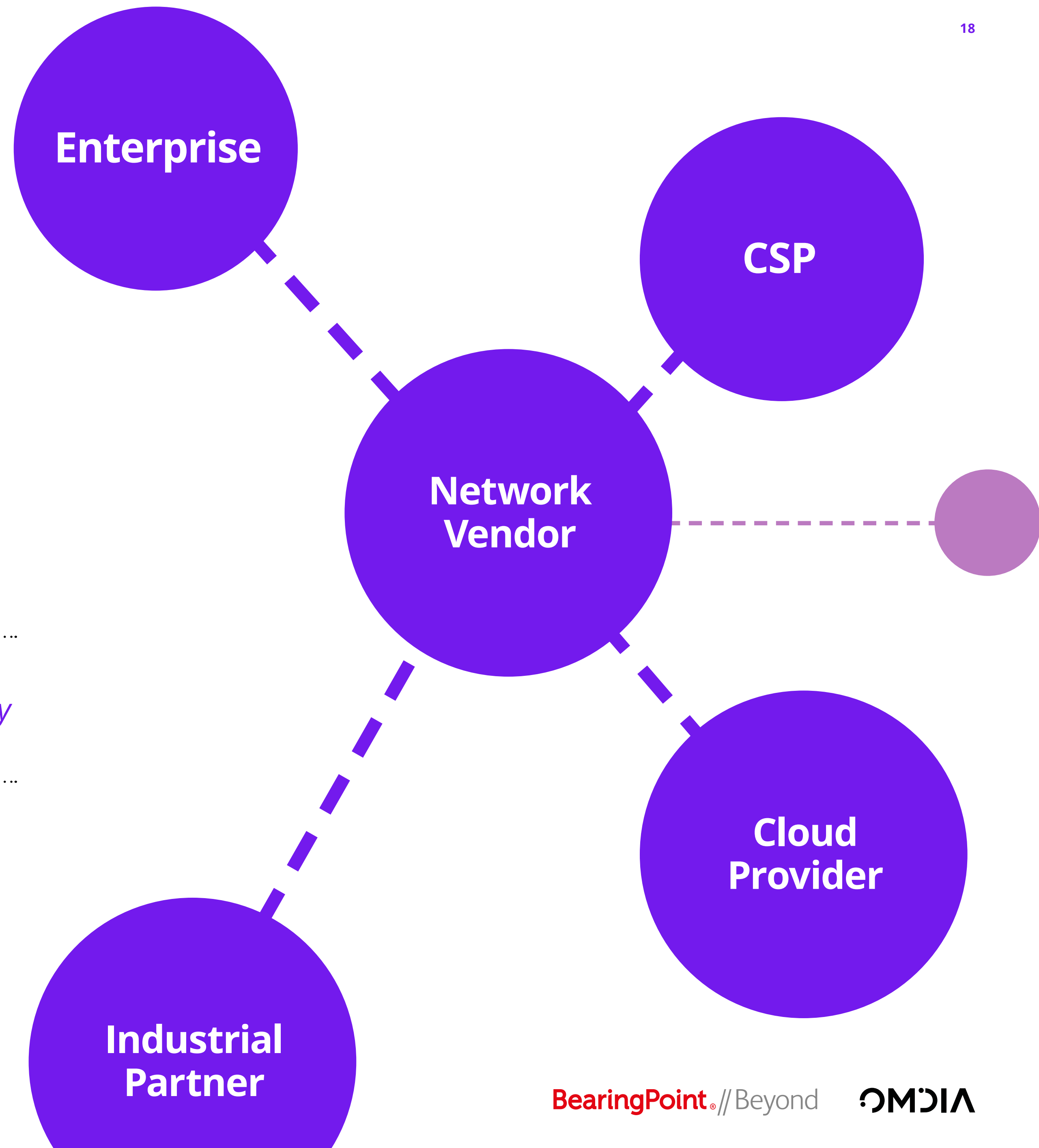
### Delivering enterprise 5G through the CSP as a value-added reseller channel

Telia and Ericsson are providing private LTE and 5G for Scania's Södertälje truck factory under Ericsson's Industry Connect program. Participating CSPs, such as Telia, act as value-added resellers, providing first-line support, interconnection, and any higher-layer services they think fit.

The network solution is standardized, focusing on an autonomous network model, and Ericsson provides an online quoting and ordering tool for CSP employees to use.

Ericsson also uses specialist providers such as Ambra Solutions (a Canadian provider of connectivity for oil, gas, and mining operations), systems integrators, and industrial partners such as Hitachi Vantara as well as the CSPs.

*This maintains a CSP role, but CSPs might hope for better than just a channel discount, and the relationship between the vendor and the industry partners implies limits to what the CSP can offer beyond connectivity.*



## TAKING THE INITIATIVE: VERIZON WIRELESS AND AWS

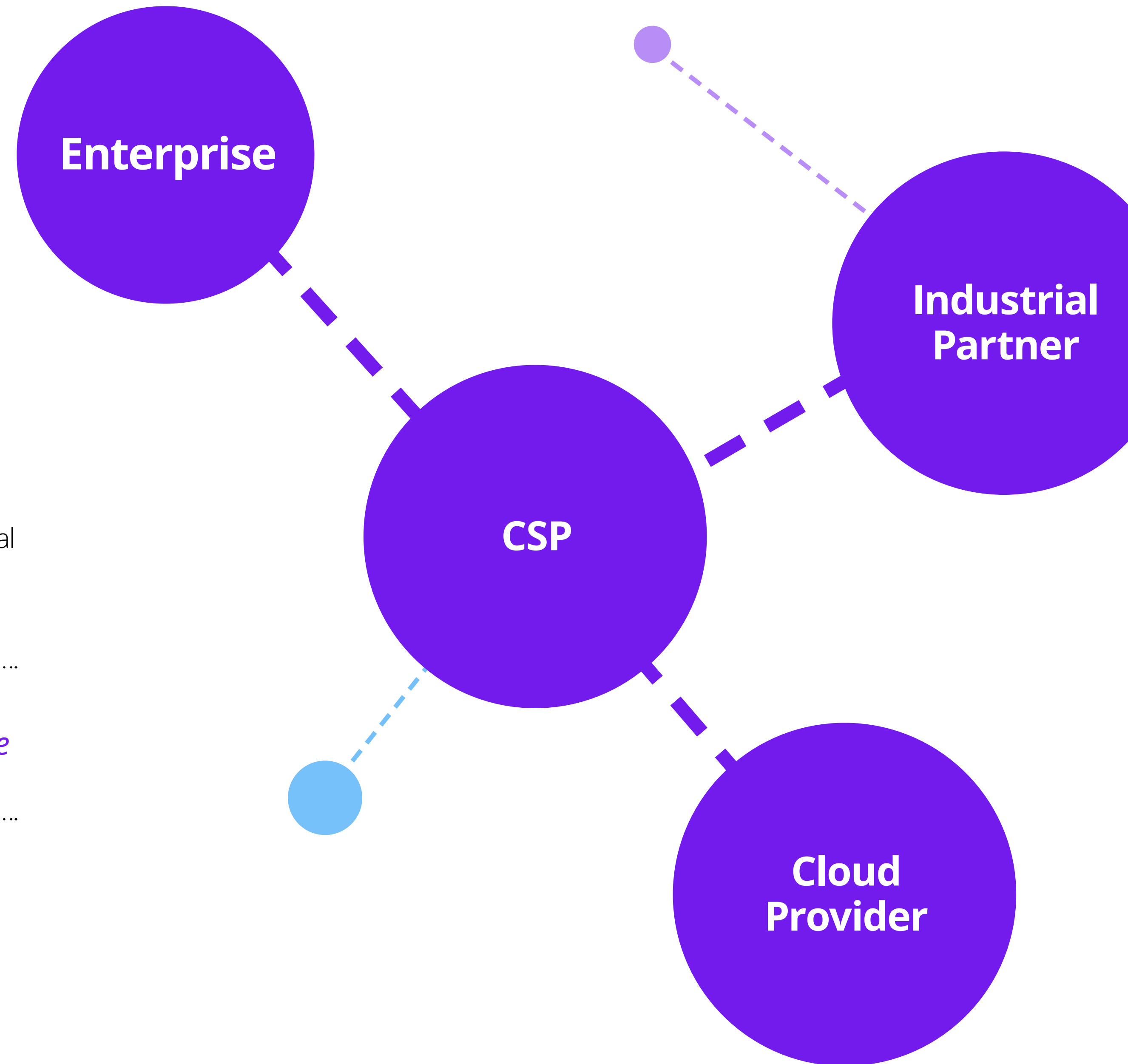
There is no reason why CSPs should hang back in partnering with digital leaders

AWS's Wavelength product provides a localized version of its cloud computing environment, deployed as a multi-access edge computing (MEC) system within its partners' mobile networks so that applications can take advantage of low-latency connectivity.

Verizon chose to be a first-wave partner for the rollout of Wavelength, providing facilities for its deployment and using it to enrich the value of its 5G network.

Wavelength is based on Outposts, AWS's on-premises product analogous to Microsoft's Azure Stack. A key use case for MEC is on-premises processing of critical enterprise data; this will be a significant advantage for Verizon in selling to enterprises.

*Getting an industry-leading partner such as AWS on board is an advantage, because it increases the value of each project and also because it helps to sell more of them.*



## MINERA LAS BAMBAS: A CASE STUDY OF THE CSP AS DIGITAL PROVIDER THROUGH PARTNERING

### Mining with Telefónica and Nokia for copper, or gold?

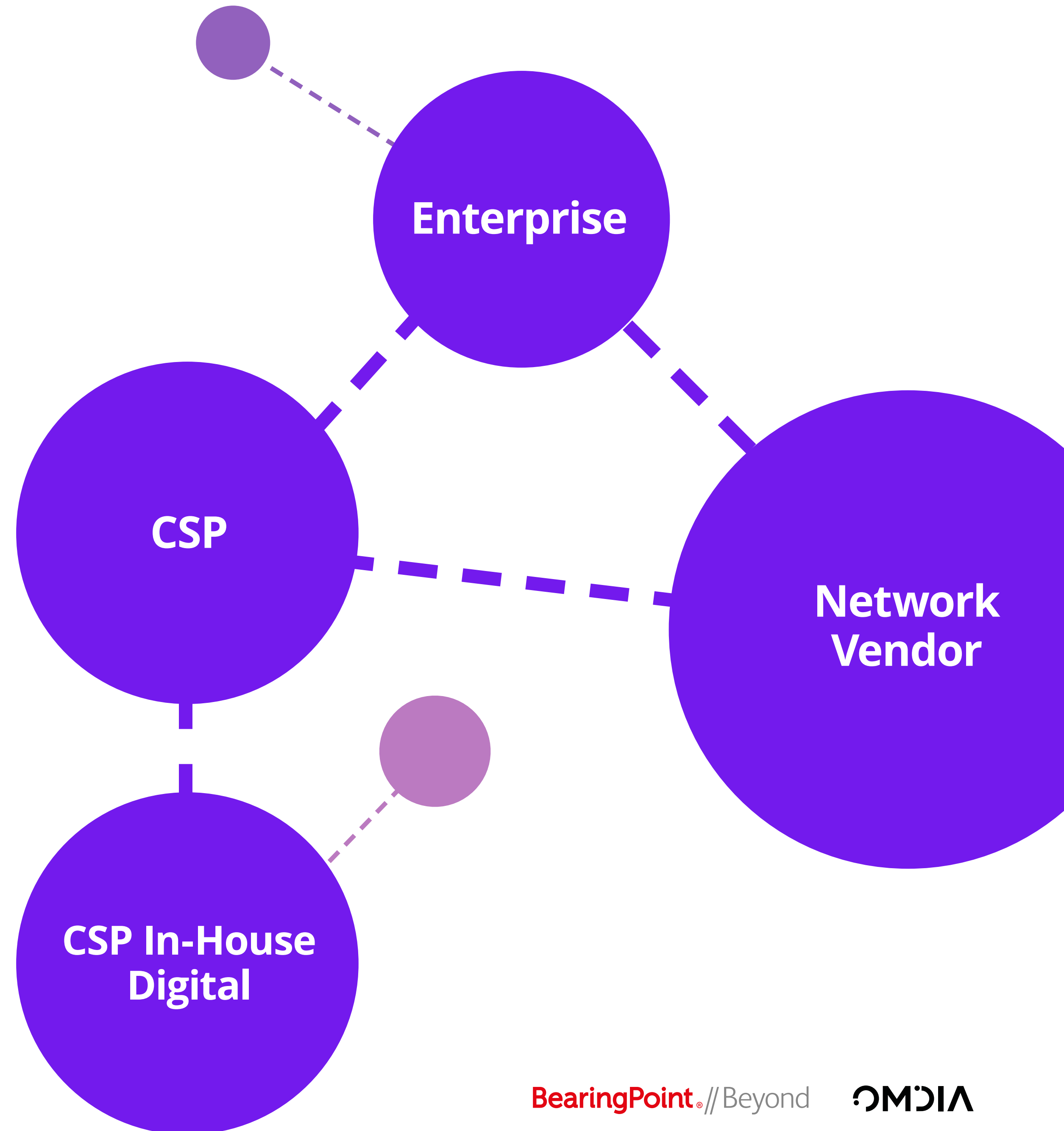
Las Bambas, a copper mine 4,600 meters up in the Peruvian Andes, is deploying a private LTE network, upgradable to 5G in the future.

To begin with, the project replaces an existing Tetra 2G network, providing mission-critical voice, push-to-talk, and safety applications.

In a second phase, the aim is to “digitize” the mining operation, deploying more Internet of Things sensors, task-specific productivity apps, automated machinery, and robotics.

To achieve this, the mine turned to a joint five-year project with Telefónica Peru and Nokia Networks. Nokia provides hardware, technical support, and training.

*Telefónica, meanwhile, contributes the design and build, manages the network, and carries out the high-value digitization project itself.*



# Conclusion

## **SMARTER SERVICE PROVIDERS HAVE GRASPED THAT AN ECOSYSTEM STRATEGY IS ABSOLUTELY NECESSARY FOR SUCCESS IN ENTERPRISE 5G**

To take full advantage of the opportunity 5G presents, CSPs need to make a cultural shift. Instead of adopting a monolithic approach focused only on their own services and capabilities, they should prepare to address enterprise demand in conjunction with an ecosystem of partners.

CSPs need to learn that, while their core product (5G connectivity) might be essential for the delivery of outcomes, businesses are seeking a complete set of services, applications, and IT systems in order to fully realize the benefits of 5G. Many of these requirements can be addressed by alternative providers, systems integrators, and applications developers. If CSPs do not have partner relationships with these, they will miss out on the full spectrum of opportunities.

By 2022, 5G is expected to have reached viable functional maturity, and enterprises are not waiting. They are already forming ecosystems to help them address their needs; if CSPs do not formulate a strategy and invest, they will likely miss out.

If they are bold, CSPs can become 5G ecosystem orchestrators and be the anchor provider of solutions that will indeed include traditional core connectivity but which will extend and encompass applications and services required in the 5G era.

Do not repeat the same mistakes in 5G. An ecosystem of partners is crucial to deliver the full value of 5G connectivity.

## **COVID-19 IMPLICATIONS**

Currently, all eyes and minds are on the impact of COVID-19 and its implications for our industry and our customers. Omdia analysts have conducted a comprehensive review of the impact of the virus on service provider markets forecasting fixed and mobile service revenues to decline by 1.8% in 2020. While we do expect service provider revenues to recover overall by 2023 (it could be 2022 but not finalized yet), there will still be areas of significant growth in H2 2020 and 2021 in key sub-segments, despite the headwinds presented by COVID-19. If anything, the virus is pushing the “fast-forward” button on many of the issues and trends discussed in this report such as 5G and Enterprise demand for technology solutions, automation and digitalization. For example, 5G investment is already recovering in China, exactly because the country recognizes the importance of accelerating digitalization of industries to guard against future risk. We expect this trend to unfold on a global scale, as connectivity becomes a national infrastructure priority. If anything, the virus makes digitizing the physical, enabling a work-anywhere economy and mitigating risk in supply chains through an ecosystem play more relevant than ever.

# About

## BearingPoint//Beyond

BearingPoint//Beyond is a rapidly growing SaaS-based BSS and digital platform solution provider helping organizations to reinvent their business model and grow revenue by utilizing digital platforms and partner ecosystems.

Our digital platform solutions are designed to help businesses experiment, launch and monetize new offerings at speed, with minimum risk and cost; building connections between technologies and partners, enabling them to collaborate, co-innovate and expand reach with an ecosystem of partners while taking advantage of new technologies such as cloud, IoT AI, 5G and more. This brings organizations closer to their customers, helping drive higher efficiency and automation, to become more agile in the face of competition.

We serve customers across Asia-Pacific, Europe, Middle East, Africa and the Americas, spanning industries from telecommunications, media and entertainment, to tech and IT, financial, and automotive.

BearingPoint//Beyond is owned by BearingPoint, an independent management and technology consultancy with European roots and a global reach. A worldwide consulting network with more than 10,000 people, BearingPoint supports the world's leading companies and organizations in over 75 countries, engaging them to achieve measurable and sustainable success.

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## Omdia

Omdia is a global technology research powerhouse, established following the merger of the research division of Informa Tech (Ovum, Heavy Reading, and Tractica) and the acquired IHS Markit technology research portfolio\*.

We combine the expertise of more than 400 analysts across the entire technology spectrum, covering 150 markets. We publish over 3,000 research reports annually, reaching more than 14,000 subscribers, and cover thousands of technology, media, and telecommunications companies.

Our exhaustive intelligence and deep technology expertise enable us to uncover actionable insights that help our customers connect the dots in today's constantly evolving technology environment and empower them to improve their businesses – today and tomorrow.

\*The majority of IHS Markit technology research products and solutions were acquired by Informa in August 2019 and are now part of Omdia.



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Singapore  
South Korea  
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