



# Telecom strategies for a 5G future

*The new imperative  
for value creation*

# Experts on this topic



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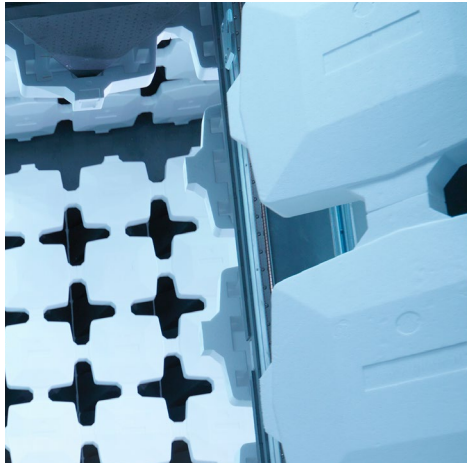
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*To compete in an era of transformation, telecom operators must evolve.*

## Key takeaways

### ■ Rethink value creation and delivery

The telecom industry is undergoing a foundational transformation that is a catalyst for operators to rethink the roles they play in driving value in addition to connectivity.

### ■ Choose a deliberate approach

Each telecom operator will need to choose a strategy that enables its role in creating business value in concert with providing connectivity services.

### ■ Live your strategy

The unique value creation strategy chosen by each operator will require that they align their business operations, network operations, and go-to-market functions to support their strategic direction.

# The future of connectivity-enabled industry solutions

With the advancement of 5G, the telecom business model is facing foundational changes. To compete in an era of transformation, telecom operators must evolve.

Over the past decade, connectivity has grown in importance—yet the industry has seen steadily declining average revenue per user. In fact, consumer revenues are projected to be roughly flat through 2030.<sup>1</sup>

Looking to the near-to-midterm future, operators have a clear incentive to find new and disruptive sources of revenues. It seems unlikely the industry will be able to drive significant growth from consumer service revenues alone. And yet, telecom operators need to invest heavily in network advancements—including 5G and fiber.

Operators are also investing significantly to meet higher, more customizable performance expectations. This is enabled by the evolution to a telecom network cloud, with Software-Defined Networking (SDN) functions and Multi-access Edge Computing (MEC) platforms. These technologies can increase network agility, flexibility, and spectrum efficiency; reduce network congestion; and meet the requirement to support more traffic and devices.

However, operators are hard-pressed to charge premiums for consumer services enhanced by these technologies. For example, in 2020, Verizon abandoned plans to charge consumers \$10 more for high-end 5G service plans—and no other vendor in the US has successfully charged a premium for 5G.<sup>2</sup>

Fortunately, the market for connectivity-enabled industry solutions is burgeoning—offering operators a way to expand their businesses and revenues. The connectivity needs of enterprises are vast and growing. And while industry connectivity demands extend well outside of what 5G alone provides, 5G’s unique performance capabilities offer significant global economic potential.

5G is an important lever specifically designed to address scalability and enterprise performance requirements, enabling use cases that couldn’t previously be addressed with global wireless technologies. 5G’s lower latency, increased reliability, ability to support massive machine-to-machine interactions, and greater availability are catalysts for rethinking the role of connectivity in value creation and delivery.

A recent report from Beyond Now by Bearing Point and Omdia found that 72% of telecom operators expect the majority of incremental 5G revenues will come from business-to-business (B2B), business-to-business-to-consumer (B2B2C), or government/smart city opportunities.<sup>3</sup>

Use cases range from enabling enterprise digital and cloud transformations to solutions that combine networks with other technologies, enabling radical new efficiencies, ways of working, and business models. Here are just a few examples:

- *In healthcare*, near-real-time telemetry from medical devices may be analyzed to monitor chronic diseases and intervene while edge cloud keeps sensitive data in place to manage security and regulatory requirements.
- *In manufacturing*, cameras capturing and processing real-time visual data can identify and directly respond to a range of potential issues in manufacturing plants, industrial equipment, and transportation logistics.
- *In energy and utilities*, smart meters may be used for automated billing, loss detection, and quality management. Lines and equipment may be monitored in real-time for leaks, pressure sensing, and maintenance, with AI driving automated response.
- *In public transportation*, vehicles and infrastructure may be automated with the use of continuously connected and analyzed sensors.

Through these potential use cases—and many more—5G is expected to enable \$13.1 trillion in annual sales across all industry sectors by 2035, according to IHS Markit.<sup>4</sup> However, for telecom operators to extract the most value from emerging opportunities, operators must make strategic choices about the capabilities they will provide and the roles they will play in value-creating ecosystems.

# The rise of advanced connectivity

One lesson: economic value is created by activating the business value that is enabled by connectivity.

While operators can still bring in sizable revenues by providing connectivity, it is not expected to be a primary driver of future growth. Nokia says only 13% of Internet Communications Technology (ICT) revenues from enterprises are expected to come directly from basic connectivity.<sup>5</sup> And according to IDC, the connectivity and communications market, valued at \$1.53 trillion in 2020, is expected to grow only 5% by 2025<sup>6</sup>—well below the current rate of inflation.<sup>7</sup>

Consumer services and connectivity should continue to constitute a large share of industry revenues. However, a sizable portion of the growth opportunity arising from communications networks will likely come from the digital applications and services layer enabled by connectivity—not directly from connectivity services.

A 2020 Institute for Business Value (IBV) analysis compared the capital expenditures (CapEx) of the top 10 global telecom operators by revenue to that of the top 10 internet companies. We found telecom operators spent twice as much as internet companies on CapEx, while the market capitalization of the internet companies was 6 times that of the telecom operators.<sup>8</sup>



Since then, even as operators ramped up 5G-related investments, the gap in enterprise value between operators and internet companies has grown markedly. This is not surprising, given that Amazon, Apple, Facebook, Google, and Microsoft increased their combined profit by 55% in 2021.<sup>9</sup> One lesson: economic value is created by activating the business value that is enabled by connectivity.

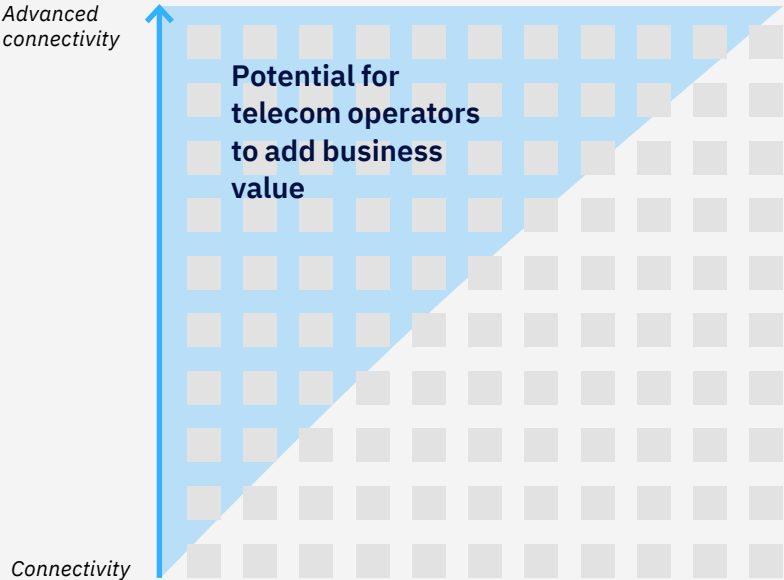
The unique requirements of enterprise use cases can guide how technology is applied to add value—but these needs are often dynamic and call for a very different form of “advanced connectivity.” Advanced connectivity is IT-centered, virtualized, and software-defined, making it programmable so it can adapt—often together with compute—to the purposes and consumption models demanded by end users (see Figure 1).

FIGURE 1

**A new go-to-market approach**

Providing advanced connectivity can help operators deliver more business value and capture opportunities.

Source: IBM Institute for Business Value



In its most evolved forms, this type of advanced connectivity enables dynamic solutions by integrating connectivity with IT-based technologies such as AI, automation, and the provisioning, deployment, and orchestration capabilities of hybrid cloud. Network functions and cloud functions are uniting into integrated platform-based solutions that merge connectivity with compute, demanding systems with high levels of integrated intelligence.

Although advanced connectivity may involve 5G, it is about much more than 5G. It may contain multiple forms of SDN, MEC, WiFi, fiber, and other components. A good example comes from Lumen Technologies, which has built a combined connectivity and cloud computing platform on its

fiber network. Lumen has also partnered with T-Mobile to provide 5G infrastructure and licensed spectrum for specific use cases targeting enterprises and government organizations.<sup>10</sup> (See “Lumen Technologies: Combining business-grade fiber and edge computing to enable low-latency use cases,” pg. 7.)

Delivering value to enterprise customers in this evolving landscape requires operators to take a new approach to how they go to market, including how they develop and support services, add value in addition to connectivity, and engage with customers. This shift will require the emergence of new business and organizational models that align with specific value creation approaches.





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## Lumen Technologies: Combining business- grade fiber and edge computing to enable low-latency use cases

Lumen offers global communications, network services, security, cloud solutions, voice, and managed services. To create business value with low-latency use cases including IoT, video gaming, and virtual training, Lumen has built a SDN-enabled fiber network with services that sit on top of the infrastructure. Lumen's fiber network covers 95% of enterprises in North America and can achieve 5 milliseconds latency via 44 distributed edge locations.<sup>11</sup>

Services layered into the network include bare metal compute, network storage (allowing data to be located closer to applications), edge orchestration, and private cloud offerings with on-premises options. Lumen Edge Orchestrator allows applications to be deployed both to public cloud and the edge with a common control plane.

Lumen offers professional services for implementation and managed services and has formed an agreement with T-Mobile in the US to deploy private wireless edge use cases with licensed spectrum, including virtual training for worker safety.

Both companies plan to drive co-innovation through the Lumen Edge Experience Center and T-Mobile's labs and Tech Experience Center.

# Telecom transformation is essential

We believe creating new value will require substantial change to the telecom enterprise—and in some cases holistic transformation.

The shift in focus toward industry enablement is not temporary. Given the new market opportunity outlined above, we believe it is a permanent evolution of the traditional telecom model.

Unlike markets for connectivity, where differentiation can be hard to achieve, emerging advanced connectivity markets can create new and distinct kinds of telecom operators, some with deep horizontal and vertical specialties. How operators transform to add value, and the pace at which they do so, depends on the value-creation roles they choose to play. Often this choice will be made through direct collaboration with stakeholders that may include end customers, industry bodies, and even regulators.

We believe creating new value will require substantial change to the telecom enterprise, and in some cases holistic transformation. It will also require a clear understanding that collaboration creates combined effects. We believe ecosystem engagement and multi-stakeholder collaboration is essential to solving complex problems by providing a path to multi-component integrated solutions.

In some cases, telecom operators may partner with tech companies and more publicly recognized tech brands to form innovation labs, incubators, and other arrangements to co-develop advanced technology and accelerate innovation. Such an approach may expand access to customer relationships, data and insights, research and development, and specialized industry expertise.

Each operator will need to be positioned to add value to end users and partners in a specific way. Some operators can achieve success by specializing their connectivity offering, while others may become more akin to technology companies by integrating technologies and capabilities. What is important is that each forms a deliberate value creation strategy centered around sustainable value delivery and scalable business models—and that they align the entire organization to support their strategic direction.

When we explore what it means for an operator to add incremental value to B2B and B2B2C solutions, 2 primary variables emerge (see Figure 2). One is the degree to which the operator contributes the technological and operational support responsible for business outcomes, and the other is the degree that it leads go-to-market activities, including sales, marketing, consulting, ecosystem management, delivery, and support.

An operator that provides advanced connectivity has more potential to drive business value. Those falling in the middle of the connectivity spectrum might tailor connectivity, for example, by using network slicing to enable specific use cases on a

corporate campus, manufacturing floor, university, or a stretch of highway. At the high end of the spectrum, operators can provide intelligent end-to-end solutions that marry connectivity with compute and involve high degrees of automation.

Go-to-market leadership refers to the capabilities and level of specialization assumed by the operator. Those on the rightmost side of the axis have transformed their organizational cultures, skills, and technology to support a variety of go-to-market activities, including solution development, consulting, sales, marketing, delivery, support, and other services to lead the go-to-market process and surrounding ecosystem.

FIGURE 2

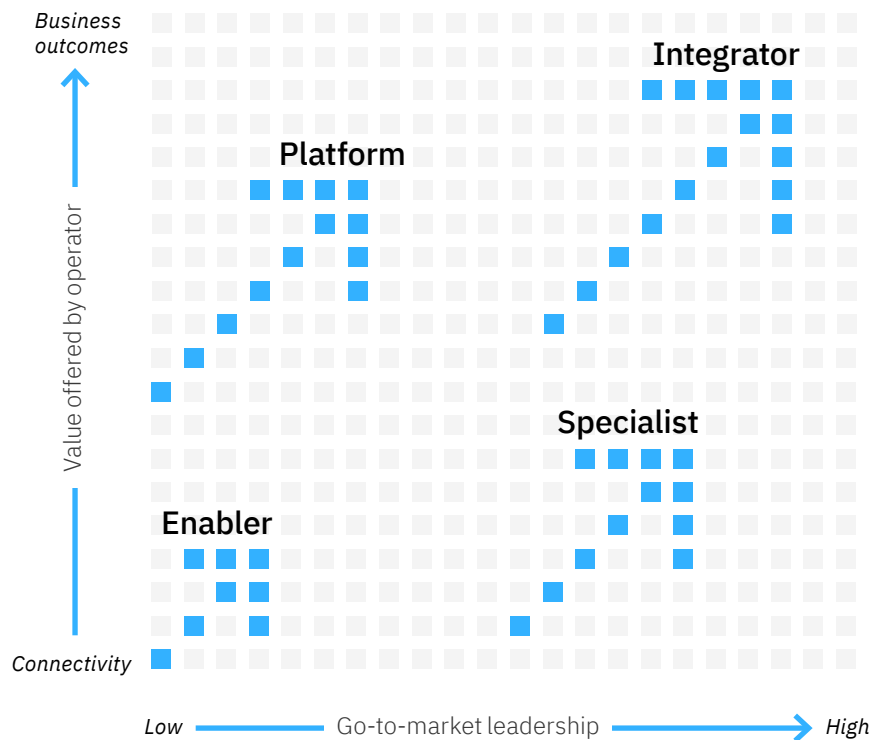
**A divergent future for telecom operators**

Each operator will need to develop a specific value creation strategy



Market potential for operators to create business value

Source: IBM Institute for Business Value



# 4 emerging telcom archetypes

Market forces are likely to drive each operator to define itself primarily within one of these quadrants.

To help telecom leaders plan future options for serving enterprise clients, we've developed a forward-looking industry framework based on our experience working with telecom clients and ecosystem partners. We believe our 4 archetypes can help conceptualize options for how capabilities and channel investments can be evolved.

Because the enterprise opportunity for advanced connectivity is still emerging, the market has not yet produced many pure representations of these archetypes. As the new landscape comes into focus, our archetypes can help telecom leaders envision possible value creation vectors. While a single operator may see success with offerings across the framework, market forces are likely to drive each operator to define itself primarily within one of these quadrants.



**The enabler.** This operator enables third-party applications, platforms, solutions, and services by sticking mainly to connectivity services. It may tune its network to a specific offering and provide horizontal technology support, such as security and automation. Typically, partners are responsible for IT-based elements relating to customer experience, scaled delivery, and standards-based interfaces. An example would be an operator that packages or passes through an enterprise SaaS or PaaS offering, such as Salesforce.com, SAP Cloud Platform, or Adobe Experience Cloud.

**The platform.** Like the name implies, this operator provides the horizontal platform upon which third-parties develop, market, and scale vertical solutions. It may deliver significant business value by providing advanced connectivity—but it cedes control over most of the solutioning, customization, and services (for example, managed services). The

operator may offer tools to help configure customized connectivity, as well as horizontal technologies to those developing solutions, such as infrastructure, analytics, IoT, AI, and end-to-end security. It may evolve to provide a marketplace for ecosystems to connect hardware and software components.

This archetype requires extensive self-service and automation capabilities. It includes an emerging breed of 5G connectivity platform operator that offers tools and capabilities that can be used by third parties to tailor and scale solutions. (See “DISH Network: Building a greenfield cloud-native 5G network.”)

Vodafone offers another example of this archetype in the role it is playing with its Global Data Service Platform (GDSP), which lets customers manage connected IoT deployments through a centrally hosted, security-rich, self-service platform.<sup>12</sup>

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## DISH Network: Building a greenfield cloud-native 5G network

DISH is building the first greenfield cloud-native 5G network platform in the US.<sup>13</sup> It will combine 5G capabilities with the customization and intelligence of the cloud, enabling its end users to directly manage bespoke networks and build use-case-specific solutions spanning hybrid networks and hybrid clouds.

DISH intends to leverage IBM’s AI-powered automation and network orchestration software and services. Network slices, managed by customers to set service levels, are planned. The platform design includes intent-based orchestration and AI to further drive operational efficiencies.

**The specialist.** This operator specializes in solving problems for enterprise customers by leading solution development, including integrating and customizing components from third parties. Connectivity will typically play a crucial role in these solutions—including domain-specific connectivity—but it can often be a catalyst for broader value creation. An example would be an operator that works closely with an enterprise customer to understand their vertical pain points and assembles a solution including significant third-party components. The specialist may lead the formation of complex business and IT strategies and their corresponding architectures. It may also lead systems integration and offer solutions as managed services.

This option requires the development of specialist vertical B2B capabilities, and forming partnerships that can support them in complex solutioning efforts involving end customers and a diverse set of stakeholders. Such partnerships may involve equipment manufacturers, Global Systems Integrators (GSIs), hyperscale cloud companies, and any number of vertical specialists.

**The integrator.** This operator is an end-to-end vertical solution provider directly responsible for driving most of the business value powering a use case. It takes the lead go-to-market role, including complex solutioning, and may also provide key technology enablement from in-house technology platforms.

The most evolved of these operators should develop and nurture skilled, multi-functional teams operating on differentiated and flexible technology platforms—often orchestrating customized vertical solutions across hybrid network and cloud environments. They may also offer deep capabilities that include in-house innovation, consulting, deployment, and managed services. Lumen Technologies offers a good example of a telecom organization that is well-equipped to be the integrator. (See “Lumen Technologies: Combining business-grade fiber and edge computing to enable low-latency use cases,” page 7.)

# Fundamentals for a successful telecom transformation

Changes typically take place across 3 dimensions: people, technology and data, and partners.

There is no right or wrong archetype for an operator to choose. How each decides to create value is an individual choice determined by factors including regional market size, competition, current capabilities, strategic objectives, and access to capital. What matters most is that each operator develops a clear understanding of how it can create differentiated value—and that it aligns its operations to execute its strategy.

While there are different economic equations driving each of the 4 archetypes (see Figure 2), the integrator archetype isn't always the optimal path. Organizations must be prepared to completely align business, operational, and go-to-market capabilities if they intend to compete with technology companies on their terms.

The degree of transformation each operator must undergo may also vary based on the value creation strategy it selects—and how far the organization is from that target state. Our interactions with customers have led us to observe that changes typically take place across 3 dimensions: people, technology and data, and partners. Operators should focus on the following fundamentals as they transform:

## 1. Empower and develop talent

Talent lies at the heart of any successful transformation. Operators may need to create an environment that empowers and develops talent, cultivating the right mix of skills and encouraging cross-functional collaboration.

Each operator will need to assess its current talent pool and evaluate skill gaps. Some archetypes, such as the specialist and integrator, may need to develop entirely new functions, for example, vertical sales and consulting.

Delivering on the new value model will require some operators to make substantial changes to their operating models, simplifying and streamlining end-to-end functions and workflows. Some may also need to make cultural changes to embrace the innovation needed to develop new business models and service offerings. This can require putting platforms in place that make it easier to communicate, standardize processes, and share insights.

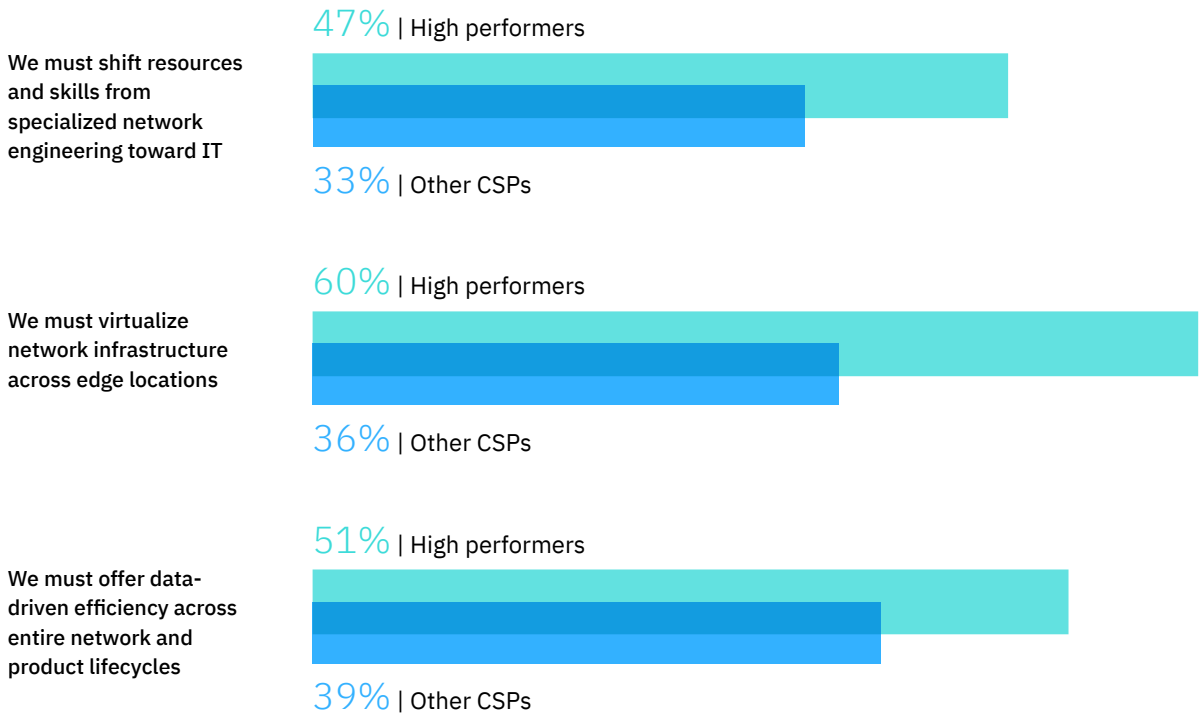
Operators providing advanced connectivity will need to put IT at the center of the business. This places a premium on software engineers, vertical sales and engineering specialists, data scientists, specialized support capabilities, and cloud security experts. In this vein, a recent IBM Institute for Business Value (IBV) study found that 47% of high-performing communications service providers (CSPs) said they must shift skills from specialized network engineering to IT—which is 42% more than other CSPs (see Figure 3).<sup>14</sup>

Some of these skills are hard to come by. They may be developed internally or could be provided by way of partnerships and collaboration. Deploying enterprise platforms that aid in reskilling or upskilling employees and foster continuous learning can assist with talent development. Operators may also consider outsourcing skills that have temporary or variable demand.

FIGURE 3

**Preparing for network cloud**

Most high performing CSPs understand the strategic importance of cloud-native networks



Source: 2020 IBM 5G and edge computing survey; Q: “To what extent do you agree or disagree with the following statements as they pertain to your organization’s ability to grow future revenues and profits from edge computing?”



## 2. Enable next-gen solutions with technology and data

Cloud computing, AI, and automation are essential change drivers as operators evolve. In fact, half of high-performing CSPs say that to grow they must become strategic cloud platforms blending diverse partner ecosystems.<sup>15</sup>

Adopting cloud-native and hybrid cloud technologies throughout network and business operations can lead to cost efficiencies, greater flexibility, and other advantages. With a programmable and automatable network, operators may be able to get sophisticated services and solutions to market faster than with alternative vertical systems and processes. This should be increasingly important as traffic and infrastructure density, as well as the sheer number of use cases, expand.

The primary way to avoid a correspondingly exponential increase in manual intervention is to apply intelligent automation. In a recent IBV study, nearly 4 in 5 (79%) high-performing CSPs agreed that, to grow profits, they must automate their decisions related to infrastructure, network functions, and operations. And more than half (51%) of high-performing CSPs said they must offer data-driven efficiency across the entire network and product lifecycle.<sup>16</sup>

Data is a gateway to developing AI, machine learning (ML), and automation solutions. Operators should make data skills a core competency, perhaps even forming a center of excellence. Organizing to understand the value of data inside and outside of the organization can help operators assess and develop use cases, experiment, and improve related data models, processes, and platforms. It can also help them define key performance indicators, which may, in turn, assist in aligning incentives with desired outcomes.

## 3. Enable an ecosystem of partners

Solutioning is a team sport. More often—especially with the specialist and integrator archetypes—operators will need the capability and infrastructure to bring stakeholders together to lead assessments, co-creation, co-innovation, and end-to-end delivery.

Each operator should establish partnerships to broaden capabilities, deepen industry expertise, and gain relevance in the markets they aim to address. They should also assess and clarify the business, technological, and operational value they can bring to ecosystems, services partners, and vendors—and how they can monetize that value.

For example, some operators may deepen their relationships with enterprise customers and ecosystem partners by teaming or developing the in-house capabilities to integrate systems to support modern 5G and edge computing deployments. Such an operational alignment may lead to better functional understanding that enables more effective services and product development, as well as better solutions to the end customers.

In addition, operators could assess the opportunity to offer enabling horizontal technologies to ecosystems. In recent research, the IBV found that 54% of high-performing CSPs said they expect to take the lead role in providing infrastructure to developing ecosystems. Half said they plan to take the lead role for analytics, AI, and ML, and two-thirds said they expect to take the lead role for software (see Figure 4). 61% of high-performing CSPs also agreed they must provide automation capabilities to the ecosystems they partner with.<sup>17</sup>

Integration will likely be increasingly important as partnerships become more intertwined. However, we found that CSP executives named the need to guarantee service level agreements as their

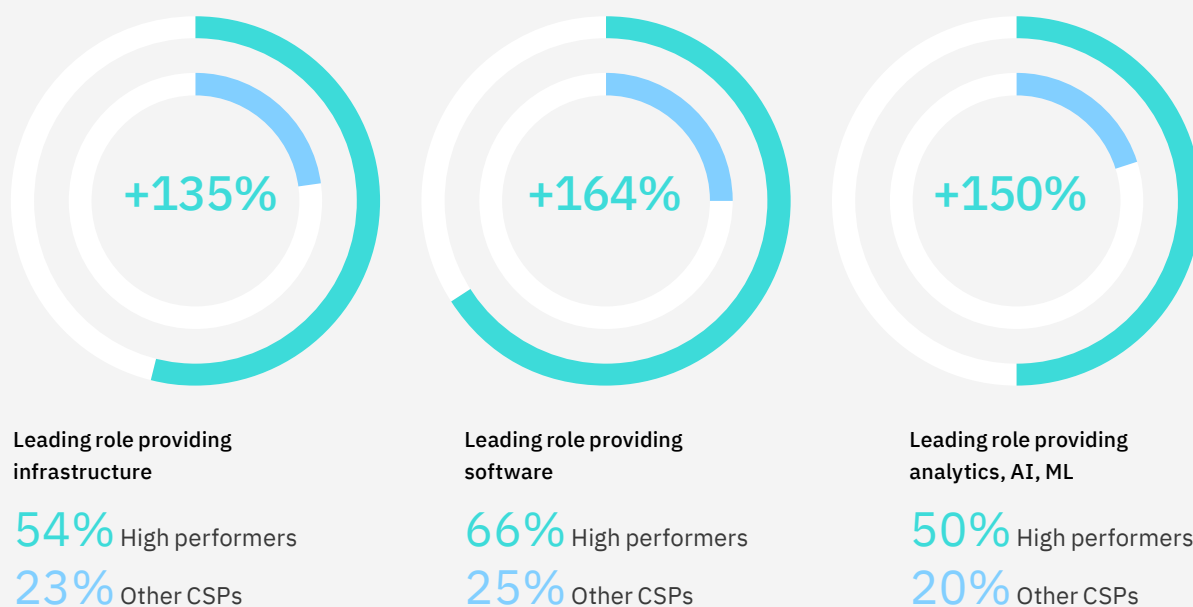
number one internal and external challenge to scaling 5G edge. Other top challenges included the need to lead complex IT strategies and IT architectures, as well as related integrations.<sup>18</sup>

We have seen the right systems integration partners can assist in all areas of transformation—lending expertise in network and IT architectures, industry verticals, data architectures and AI, and complex regulatory environments. They may also have deep relationships with enterprise business operators and solution buyers, and may provide access to incremental skills and global coverage. In some cases, these integrators may have their own technology assets and pre-integrated ecosystems, providing critical complementary capabilities.

FIGURE 4

**Value in offering IT-based technologies to emerging partner ecosystems**

High performers see themselves taking a more active role in providing technologies to 5G ecosystems



Source: 2020 IBM 5G and edge computing survey; Q: “To what extent do you agree or disagree with the following statement pertaining to your organization’s role in developing 5G ecosystems?”

What matters most is that each telecom organization defines and executes a clear value creation strategy.

## Many paths to prosperity

Connectivity is a catalyst for change across industries. And telecom operators have an opportunity to play a valuable role in the next phase of enterprise digital transformation.

However, each operator must chart its own path to growth. To meet the diverse needs of industry use cases while also delivering on strategic goals, operators must make deliberate choices.

We anticipate that new types of operators will emerge to create differentiated value to complement connectivity—and the degree of transformation required will vary.

To demonstrate how operators may need to evolve, we've plotted forward-looking strategies against 2 axes (see Figure 2). The first axis is the degree of advanced connectivity each operator chooses to provide. This defines the direct business value the operator has the potential to deliver beyond connectivity. Operators offering advanced connectivity can deploy and scale programmable networks that are virtualized and software-defined on hybrid clouds.

The second axis is the degree of go-to-market leadership the operator assumes. Operators seeking to increase their ability to lead vertical go-to-market functions may need to make substantial organizational changes and form new partnerships to acquire domain-specific knowledge, expertise, and skills.

In this landscape, 4 representative archetypes emerge. However, in summary, we believe there are multiple viable paths that operators can take to prosper. What matters most is that each telecom organization defines and executes a clear value creation strategy—and organizes its network and technology, as well as its business and go-to-market operations, to achieve a scalable and sustainable market position.

# Action guide

By looking both within and outside of their organizations for opportunities to evolve, telecom operators can position themselves to take advantage of the growth opportunities on the horizon—as long as they’ve mapped out a strategic path forward. Each path requires strategic

decision-making and some degree of transformation, together with partners, to provide value in addition to connectivity.

Here are 4 areas where telecom operators need to plan, act, and transform the organization to deliver the intended business value:

## 01

### Strategy

- **Ideate.** Explore how your organization could create and sustain unique value in addition to connectivity.
- **Innovate.** Assess and clarify whether organizational, cultural, and technological changes are needed to improve your ability to collaborate, co-create, and experiment.
- **Formulate.** Define a primary value creation strategy that considers the direct contributions you can make to solution formation, development, and delivery.
- **Execute.** Center your focus and energy on executing your strategy, while aligning business, network, and go-to-market decisions to support that strategy.

## 02

### People

- **Adapt.** Assess skills gaps and address them by hiring talent, developing skills internally, or obtaining them through partnerships.
- **Nurture.** Create an environment that empowers talent, cultivating the right mix of skills and encouraging cross-functional collaboration. Deploy enterprise platforms that aid in reskilling or upskilling employees, and that foster continuous learning.
- **Streamline.** Where possible, seek to eliminate redundancies, address silos, and flatten organizational structures. Look to outsource skills with temporary or variable demand.

## 03

### Technology and data

- **Modernize.** Adopt hybrid cloud for internal IT and operations to deliver cost savings, reduce complexity and redundancy, and enable operational efficiencies. Improve your ability to monetize your network by making it programmable with cloud-native and hybrid cloud technologies deployed across network and business operations.
- **Automate.** Reduce costs and manual interventions by applying intelligent automation for workflows related to infrastructure, network functions, and operations.
- **Predict.** Organize to understand the value of data from inside and outside your telecom organization; assess and develop use cases for AI; experiment; and improve related data models, processes, and platforms. Make data and AI skills a core competency.
- **Secure.** Adopt key security principles from design through implementation of infrastructure and applications.

## 04

### Partnerships

- **Enhance.** Seek ecosystem partnerships that broaden capabilities and offset weaknesses. Partner to gain vertical domain knowledge and go-to-market capabilities.
- **Amplify.** Assess the business, technological, and operational value you can bring to ecosystems, services partners, and vendors—and how you can monetize it. Evaluate the opportunity to provide horizontal technologies—such as infrastructure, software, analytics, AI, and ML—to ecosystems.
- **Integrate.** Consider developing the in-house capabilities to integrate systems that support modern 5G and edge computing deployments. Learn how partnering with a systems integrator could allow you to better navigate complex IT architectures, industry verticals, data and AI, and complex regulatory environments.

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## Notes and sources

- 1 “5G for business: a 2030 market compass.” Ericsson. October 2019. <https://www.ericsson.com/en/5g/5g-for-business/5g-for-business-a-2030-market-compass>
- 2 Dano, Mark. “Verizon kills plans to charge \$10/month for 5G.” Light Reading. August 17, 2020. [https://www.lightreading.com/5g/verizon-kills-plan-to-charge-\\$10month-for-5g/d/d-id/763238](https://www.lightreading.com/5g/verizon-kills-plan-to-charge-$10month-for-5g/d/d-id/763238)
- 3 “Industries and enterprises are ready to reap the benefits of 5G.” Beyond Now. July 2020. <https://www.beyondnow.com/en/industries/5g/5g-insights/5g-enterprise/>
- 4 “The 5G Economy in a Post-COVID-19 Era.” Qualcomm Technologies, Inc. November 2020. <https://www.qualcomm.com/media/documents/files/the-5g-economy-in-a-post-covid-19-era-report.pdf>
- 5 “5G powers global business growth and productivity.” February 2021. Nokia 5G readiness report. <https://www.nokia.com/networks/5g/readiness-report/>
- 6 Morris, Lain. “The Big Tech elephant is squashing telecom.” Light Reading. October 26, 2021. <https://www.lightreading.com/services/the-big-tech-elephant-is-squashing-telecom/d/d-id/773045>
- 7 Bartash, Jeffrey. “U.S. inflation rate climbs to 7.5% after another sharp increase in consumer prices.” MarketWatch. February 10, 2022. <http://marketwatch.com/story/coming-up-consumer-price-index-11644498273>
- 8 Gadloff, Doug, Warwick Hill, and James Thornhill. “CSPs and the intelligent back office advantage: Gaining an edge through AI and automation.” IBM Institute for Business Value. October 2020. <https://ibm.co/csp-intelligent-automation>
- 9 Owens, Jeremy C., and Therese Poletti. “Opinion: \$1.4 trillion? Big Tech’s pandemic year produces mind-boggling financial results.” MarketWatch. February 7, 2022. <https://www.marketwatch.com/story/1-4-trillion-big-techs-pandemic-year-produces-mind-boggling-financial-results-11644096594>
- 10 Hardesty, Linda. “T-Mobile and Lumen court joint enterprise, government customers.” Fierce Telecom. July 15, 2021. <https://www.fiercetelecom.com/operators/t-mobile-and-lumen-court-joint-enterprise-government-customers>
- 11 Kusterer Ziser, Kelsey. “Lumen’s Chris McReynolds on edge computing.” Light Reading. February 2, 2022. <https://www.lightreading.com/the-edge/lumens-chris-mcreynolds-on-edge-computing/v/d-id/775021>
- 12 “Vodafone named as a Leader by Gartner in the 2022 Magic Quadrant for Managed IoT Services, Worldwide.” Vodafone Business. February 4, 2022. <https://www.vodafone.com/business/news-and-insights/analyst-views/vodafone-named-a-leader-in-2022-gartner-magic-quadrant-for-managed-iot-connectivity-services>
- 13 “DISH Selects IBM’s AI-Powered Automation and Network Orchestration Software and Services for New Cloud-Native 5G Network.” IBM Newsroom. September 14, 2021. <https://newsroom.ibm.com/2021-09-14-DISH-Selects-IBMs-AI-Powered-Automation-and-Network-Orchestration-Software-and-Services-for-New-Cloud-Native-5G-Network>
- 14 Andrews, Chad, Steve Canepa, Bob Fox, and Marisa Viiveros. “The end of communications services as we know them: How 5G and edge computing will help define who wins in the booming digital economy.” IBM Institute for Business Value. April 2021. <https://ibm.co/csp-5g-edge-computing>
- 15 Ibid.
- 16 Ibid.
- 17 Ibid.
- 18 Ibid.

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