

to connectivity
and beyond!

inside telcos'
quest for new
revenue

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SETTING THE STAGE

If you were working in telecoms in the 1990s and someone told you that the industry would stop growing by 2010, would you have believed them? Probably not. Because of the fantastic growth of mobile communications during that time, it simply seemed implausible that growth would grind to a juddering halt. Yet here we are.

In recent years, communications service providers (CSPs) have benefitted from an explosion in fixed and mobile data traffic, but this has merely compensated for the decline in revenue from voice and SMS. Real growth from the envisioned mobile internet has not happened. Rather, mobile operators have become the “mules” of the internet – carriers of other companies’ data traffic.

If CSPs had adopted metered pricing rather than models based on speed or “buckets” of data consumption, they may have been able to increase revenue. But with several mobile operators competing in most countries, none could afford to adopt such pricing approaches which are standard practice in the utilities sector.

With the path to revenue growth via the mobile internet firmly blocked, CSPs have pursued other strategies. On the consumer side, operators have focused on bundling service and access, with triple-play and quad-play services and expansion into the TV business. When it comes to enterprise services, operators have spent most of the past decade trying to carve out a role in cloud computing. Meanwhile, the promise of the IoT has been constant but difficult to realize.

“Beyond connectivity” is the phrase TM Forum uses to describe CSPs’ efforts to diversify their revenue streams, and much of our members’ collaborative work involves creating technology enablers to help telcos expand into new lines of business. This ebook is an exploration and assessment of the progress operators are making globally as they deploy 5G and digitize their businesses.

**Mobile operators
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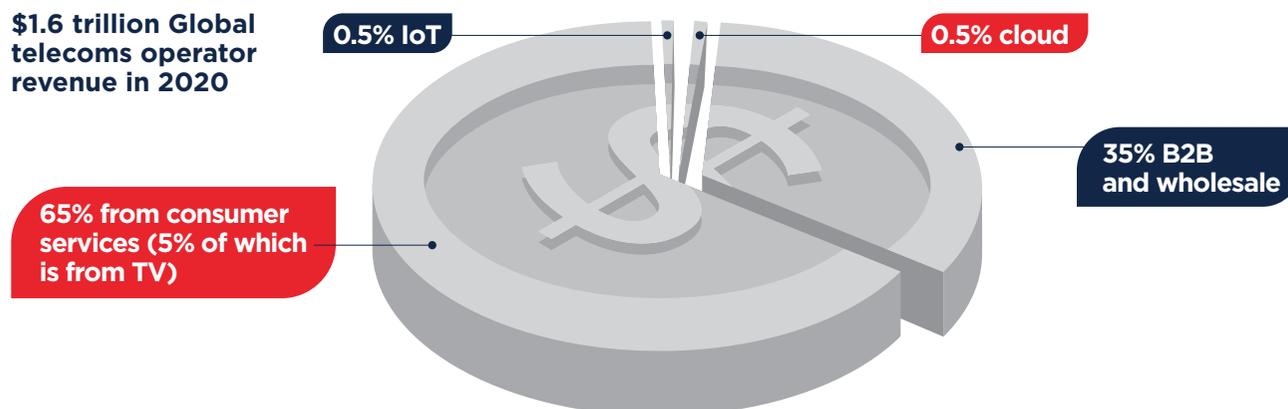
CONSUMER SERVICES

How to compete in an apps world?

Revenue from services aimed at consumers represents roughly two thirds of global telecoms revenue, which amounted to about \$1.6 trillion in 2020. Mobile operators' early efforts to grow revenue beyond connectivity focused on the B2C market, particularly since many smaller operators have no strategy for serving the B2B market.

Where's the money?

\$1.6 trillion Global telecoms operator revenue in 2020



Note: Percentages are estimates based on ongoing research; \$1.6 trillion is [IDC's estimate](#) of 2020 telecoms operator revenue TM Forum, 2021

But telcos have struggled to create new services for consumers because their customers have access to a whole world of new products and services through the Apple and Google app stores. Some CSPs have tried building their own apps but with limited success. For example, in 2017 Russian telecoms group VEON [attempted to launch](#) a social app across its entire 235-million-customer footprint, offering information and entertainment services. However, the app disappeared without a trace.

A far more popular approach has been for CSPs to partner with providers of applications such as video and games and share revenue. This arrangement is a win-win: CSPs can differentiate their services from the competition while content or application providers are able to expand their reach into the telco's market and use the telco's billing capabilities.

But so far bundling has not generated much incremental revenue for CSPs. Operators have used bundling to make their services stickier rather than as a revenue driver. Whether this will change in the 5G era will depend on their ability to drive more content partnerships and sell more third-party subscriptions.

As seen on TV

The emergence of triple-play and quad-play services has been the biggest overall trend in consumer telecoms markets over the last decade. Expansion into the pay-TV sector has underpinned these strategies, giving telcos the opportunity to build new revenue streams from scratch.

Strategies for entering the TV market vary by operator and country because the structure of markets varies enormously and no blueprint exists for how to approach new opportunities. Examples include:

- **Acquisition of an existing pay-TV business** – US telecoms giant AT&T acquired satellite provider DirecTV in 2015, while Vodafone acquired cable TV businesses in Germany (Kabel Deutschland) and other central European countries (UPC).
- **Establishing a joint venture pay-TV company** – Australian telco Telstra owns 35% of Foxtel, an Australian pay-TV operator.
- **Setting up a greenfield TV business** – many fixed broadband providers across the world have expanded into the IPTV market. They have adopted many content strategies such as acquiring the rights to movies or sports broadcasts or partnering with the owners of content rights.
- **Creation of a TV production company and pay-TV service** – UK telco BT set up BT Sport in 2013 as competition to Sky TV which had a monopoly on sports pay TV.

The very nature of television has changed dramatically over the last decade with the inexorable growth of over-the-top (OTT) content. The emergence of streaming services like Netflix, Amazon Prime Video, Hulu and more recently Apple TV, Disney Plus and HBO Max as global competitors has changed the outlook for national, facilities-based (cable, satellite) pay-TV service providers.

Depending on which of the four approaches to TV expansion an operator has taken, OTT services can be a threat, an opportunity or both. For CSPs that have not invested in content rights, a dynamic OTT video market provides the opportunity to partner. However, for operators that have significant investments in network infrastructure such as satellites and set-top boxes, OTT content represents a significant threat because OTT providers can deliver content to their customers without investing in dedicated infrastructure or customer premises equipment (although they are building extensive content-delivery networks).

Many CSPs with significant investments in pay-TV are reassessing their strategies because of rapid growth in acquiring content, particularly TV rights. US telecoms giant AT&T has effectively exited the media business after spending more than \$150 billion between 2016 and 2018 on DirecTV and Time Warner. Rival US telco Verizon, meanwhile, has sold Yahoo! and AOL for a combined \$5 billion. In the UK, BT is exploring the sale, or partial sale, of BT Sport.



Many CSPs with significant investments in pay-TV are reassessing their strategies

Pay up

Many telcos believe mobile payments are a significant opportunity for new revenue. In developed countries where most people have bank accounts and other mobile payment services are already available, there is no need for CSP-led mobile payment services. But emerging markets such as Sub-Saharan Africa are a different story.

Kenyan telecoms operator Safaricom [derives more than 30% of its revenue](#) from its M-Pesa service, and pan-African telecoms groups MTN and Orange are also focusing on mobile payments in the countries where they operate. Indeed, MTN's portfolio of payments services [contributed 7.6% of total revenues in 2020](#).

Even though operators in Europe and North America have largely abandoned their mobile payments strategies, Orange is expanding into retail (digital) banking in France and Spain. Similarly, Singapore's SingTel plans to open a digital bank later this year.

Other opportunities for new revenue from consumer services include smart homes and IoT wearables. In North America, AT&T and Comcast have tried to use home security services as an entry point into the smart home, but so far the businesses have not taken off. A few CSPs are reselling standalone smart home devices such as the Google Nest, but this is not a focus for most operators.

Some CSPs also have experimented with services for tracking IoT devices and wearables. [SK Telecom has launched](#) a service that includes a low-cost device for tracking pets, while [AT&T](#) and [Vodafone](#) have launched similar services for tracking luggage. However, none have achieved mass-market adoption.

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ENTERPRISE SERVICES

Will 5G lead to new revenue?

Because of 5G, many CSPs and telecoms suppliers believe that B2B services have the most potential to grow revenue. In 2015 large 5G network vendors and mobile operators started to think seriously about how to monetize the new technology. This was around the same that excitement about Industry 4.0 was cranking up, and 5G was viewed as a core enabling technology alongside AI and machine learning, the IoT, blockchain, smart manufacturing and quantum computing.

For CSPs in large, developed markets, the potential of B2B services aimed at specific verticals represents an extension of their existing products, services and capabilities. Their expansion into cloud and IoT pre-dates 5G. The real question for them is whether 5G provides capabilities that can turbo-charge their B2B businesses.

However, most telecoms operators globally do not have a strong B2B focus. They are largely mobile operators focusing on consumer markets.

If they want to create products and services using 5G for use cases in a wide variety of verticals, CSPs will have to develop new ordering, fulfillment, assurance and billing capabilities from scratch. In addition, they will need new skills and trusted partnership as to deliver the services.

While the B2B market shows promise for CSPs, there is little evidence that it is growing today. Operators face the same challenge in selling to enterprises that they face in selling to consumers: Traditional communications services, particularly voice, are in steep decline. The growth in broadband connectivity is compensating, but revenue from new services such as IoT, cloud and security have not had a significant impact yet.

B2B services are fragmented



Serving 50-75% of the B2B market



Serving 10-25% of the B2B market



Serving 1-2% of B2B market



Serving 5 to 10% of B2B market

Don't let legacy drag you down

Vodafone Group's 2020 financial results shown below are typical for a Tier 1 operator that has spent the last few years undergoing digital transformation and developing ICT services. A full 87% of the company's total revenue was from legacy services (mobile, fixed and unified communications), which grew by 1.6% in 2020. But 13% came from new services - in this case cloud, security and IoT - which grew by 9.2%.

Vodafone Business 2020 revenues by service category

		Service revenue	
		Jan - Dec	YoY %
	Mobile	€5.9bn	-0.4%
	Fixed	€3.1bn	3.9%
	Unified <small>(included in mobile & fixed)</small>	€0.6bn	3.8%
	Cloud & security	€0.5bn	10.0%
	IoT	€0.8bn	8.7%
	Total business	€10.3bn	1.9%

TM Forum, 2021 (source: Vodafone)

Even so, there is a strong case for arguing that new enterprise services are helping operators achieve modest overall growth to compensate for the decline in legacy services.

Many operators are recording even stronger annual growth from cloud and IoT, sometimes in excess of 20% or 30%. However, in many cases the CSPs are relatively new to serving B2B markets, and it is easy to show strong revenue growth when starting from a low base.

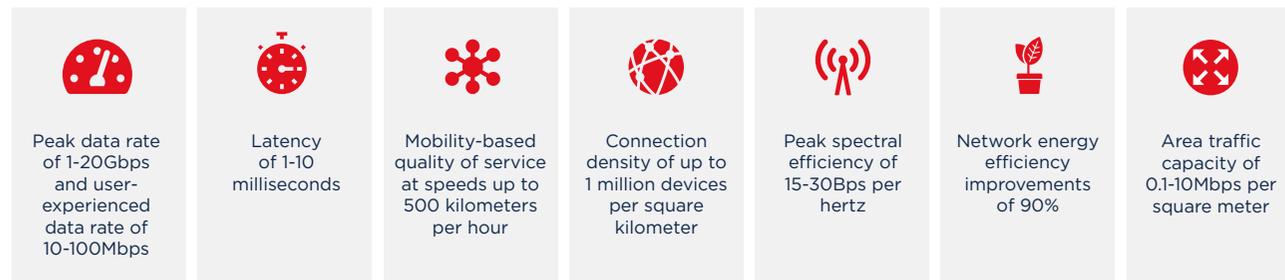
Making the vertical jump

The 5G opportunity is around use cases ranging from self-driving cars to robotic surgery, connected drones and automotive manufacturing. All rely on 5G to provide a combination of low-latency connectivity (at the network edge), fast speeds and guaranteed service quality. To deliver solutions for these use cases, CSPs must change the whole commercial focus of their businesses.

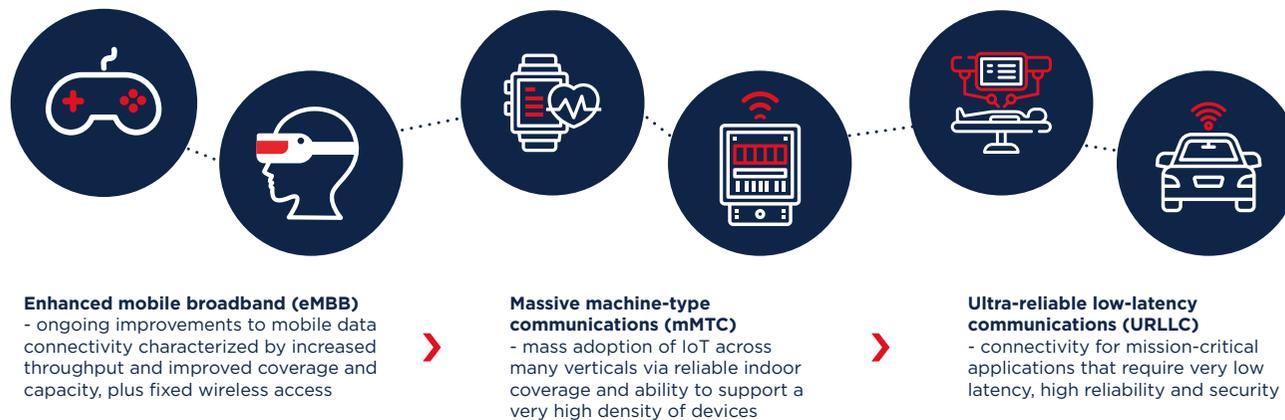
The traditional approach to market segmentation in telecoms has been based on the size of the targeted customer, ranging from small office/home office users to organizations with thousands of employees. But this is not the best way to segment markets when it comes to use cases. A robotic-surgery solution, for example, could be marketed to a single medical practitioner or a large, publicly funded healthcare organization.

This network complexity will place new demands and requirements on support systems if operators are to dynamically allocate network resources – and give customers the freedom to manage their own network requirements.

Potential benefits of 5G



To deliver solutions for 5G use cases, CSPs must change the whole commercial focus of their businesses



The device dilemma

The richness of the Google and Apple app ecosystems guarantees that our mobile phones will continue to be integral part of our lives as consumers, citizens and employees. Ironically, this isn't good news for CSPs, because people are spending a lot more money on their smartphones and tablets than on the communications services to make them work.

More time spent on devices does not translate into more revenue for CSPs because of the way operators charge for their services. Plus, with the growth of fixed broadband connectivity, users increasingly are connecting their handsets using Wi-Fi.

For the past several years, mobile operators' have been envisioning a digital future where people rely on many connected devices in their everyday lives using connectivity provided by the CSP, but this hasn't happened. Very few tablet computers - and even fewer laptops - connect to mobile networks. Wearables are widely available, but very few use mobile connectivity. And consumer IoT devices such as pet trackers or tags for luggage haven't caught on.

While Bluetooth and Wi-Fi connectivity have become ubiquitous, mobile connectivity remains too expensive. And where it is required, the smartphone can convert into a router.

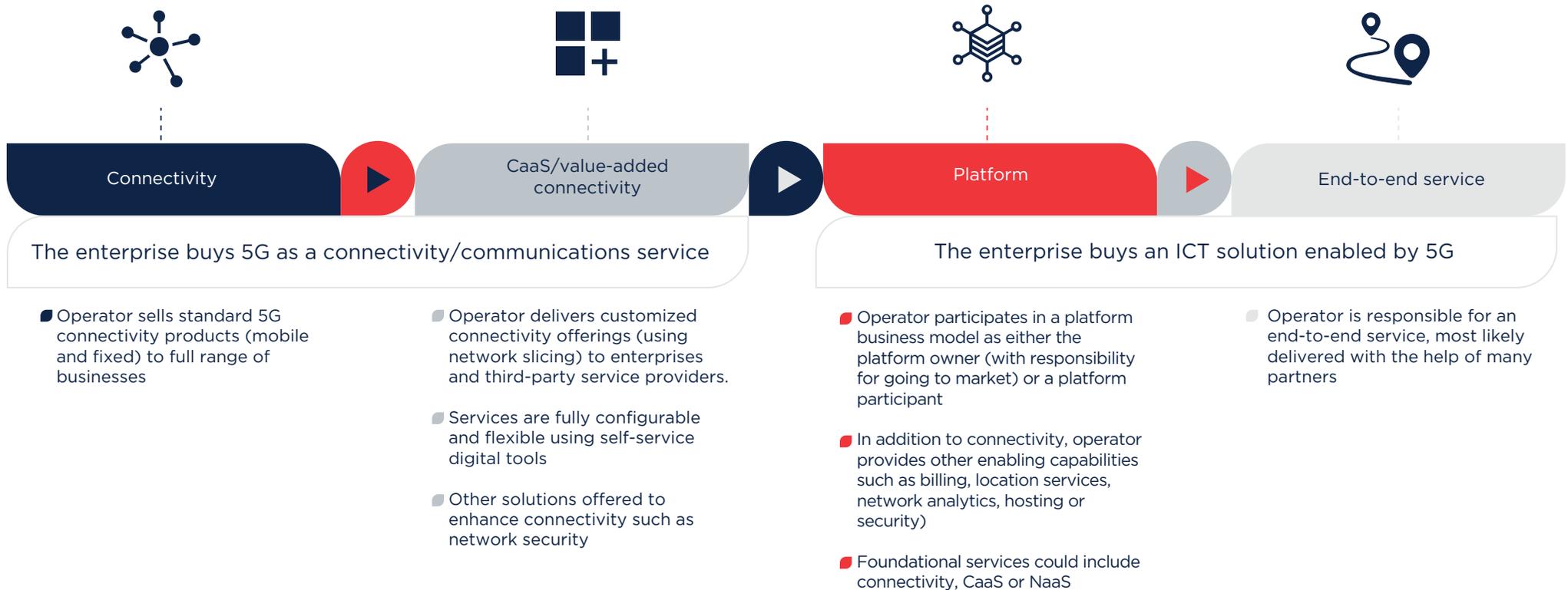
B2B connectivity provided by CSPs isn't a given either. In connected drone trials, for example, typically a mobile phone is attached to the drone to provide connectivity. Today it's difficult for drone manufacturers to source reasonably-priced cellular modules and embed them in their devices, but this won't always be the case.

More time spent on devices does not translate into more revenue for CSPs because of the way operators charge for their services

Playing the end-to-end game

Deciding which verticals to target and which 5G capabilities to prioritize are not the only issues CSPs need to address as part of their beyond connectivity strategies. They also must decide which services and capabilities to develop (or acquire) and where to play in the value chain. The graphic below shows four roles for CSPs that often overlap.

Roles of CSPs in delivering 5G services



When 5G use cases began to emerge a few years ago, many large CSPs set their sights on becoming providers of full, end-to-end solutions to enterprises. In this scenario the CSP manages the delivery of the solution to the customer, which usually includes connectivity plus other services such as security and devices. But now operators realize how difficult it is to deliver such solutions into sectors that already have their own approaches to technology and standardization, and their own specialist IT providers.

CSPs may need to acquire specialist companies in order to deliver end-to-end solutions. We are already seeing examples of this:



US telecoms giant Verizon spent \$5 billion acquiring telematics service providers Fleetmatics, Telogis and Movildata and integrating them into its [Verizon Connect business unit](#)



Australia's Telstra has made acquisitions in healthcare as it seeks to build up its [professional services businesses](#).



UK-based Vodafone Group has made vertical market acquisitions in IoT such as [Cobra Automotive](#) and South African IoT services company [iot.nxt](#) as it develops ICT solutions and services.

However, even these CSPs recognize that they cannot become specialist service providers across multiple vertical markets. Instead, they are focusing on developing scalable, horizontal capabilities and services that can be sold to companies operating in many different sectors. This is where CSPs can find a role providing value-added connectivity (or connectivity-as-a-service) or as platform providers.

Is connectivity a commodity?

Industry commentators (and even some industry leaders) assert that connectivity has become a commodity. But if connectivity is not a growth business, why would CSPs continue investing in it as they are with 5G?

Operator's newly found enthusiasm for connectivity is, in large part, because of 5G and its ability to deliver differentiated, or customized, connectivity solutions without requiring the customer to choose between different network technologies. In 5G this is called network slicing, which involves creating private network-like capabilities for enterprises or types of enterprise users. The idea is for a network slice to include a service level agreement based on variables such as latency, throughput, capacity and performance.

However – and it is a big however – network slicing is complex. For example, CSPs haven't determined how many slices they should offer. Should they offer three tiers of service based on use cases from the International Telecommunication Union, or should they provide thousands of slices based on enterprises' requirements?

Infrastructure vendors are starting to offer support for core network slicing, but the true value may lie in being able to guarantee a slice across access networks. This capability is not expected to be available until 2024 at the earliest, and some observers question whether CSPs can ever overcome the complexity of delivering slices without compromising the quality of services delivered across the public network.



[Read this benchmark report to learn more about connectivity-as-a-service](#)

Platform for change

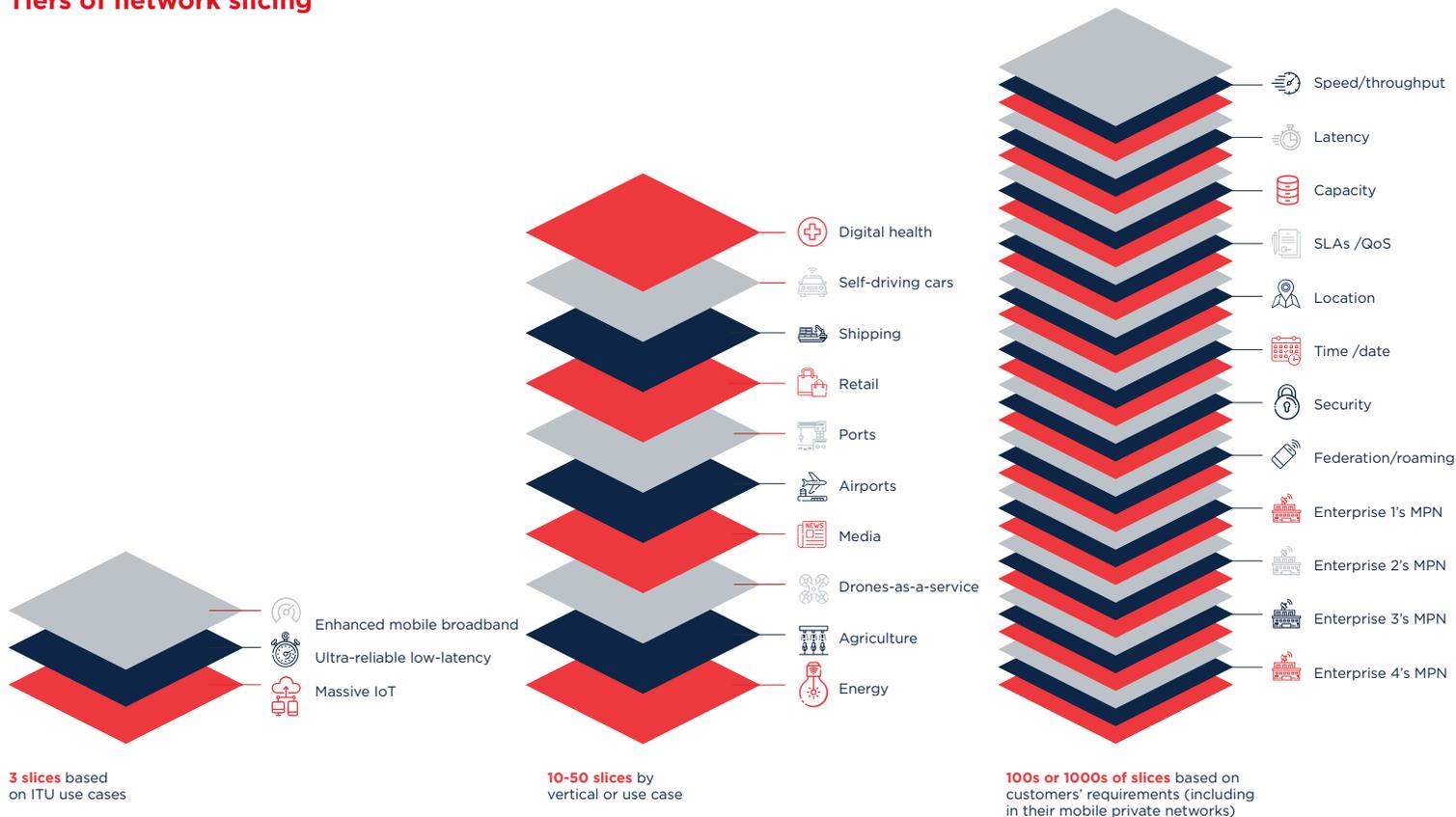
Even if operators can deliver customized connectivity services, they must figure out how to monetize them. There are two primary ways for CSPs to create new revenue and lines of business using connectivity:

1. Sell more connectivity, perhaps higher-value services
2. Create new services and capabilities to go on top of the connectivity

In both cases, CSPs must grow their connectivity businesses to increase profit because margins in IoT connectivity are declining. This is where a platform strategy and ecosystems of developers can play key roles.

Rather than relying on their own sales and marketing organizations and preferred distributors to reach new customers, operators could aim to attract developers who can create products that leverage connectivity. Most successful digital businesses leverage platform business models and developers.

Tiers of network slicing



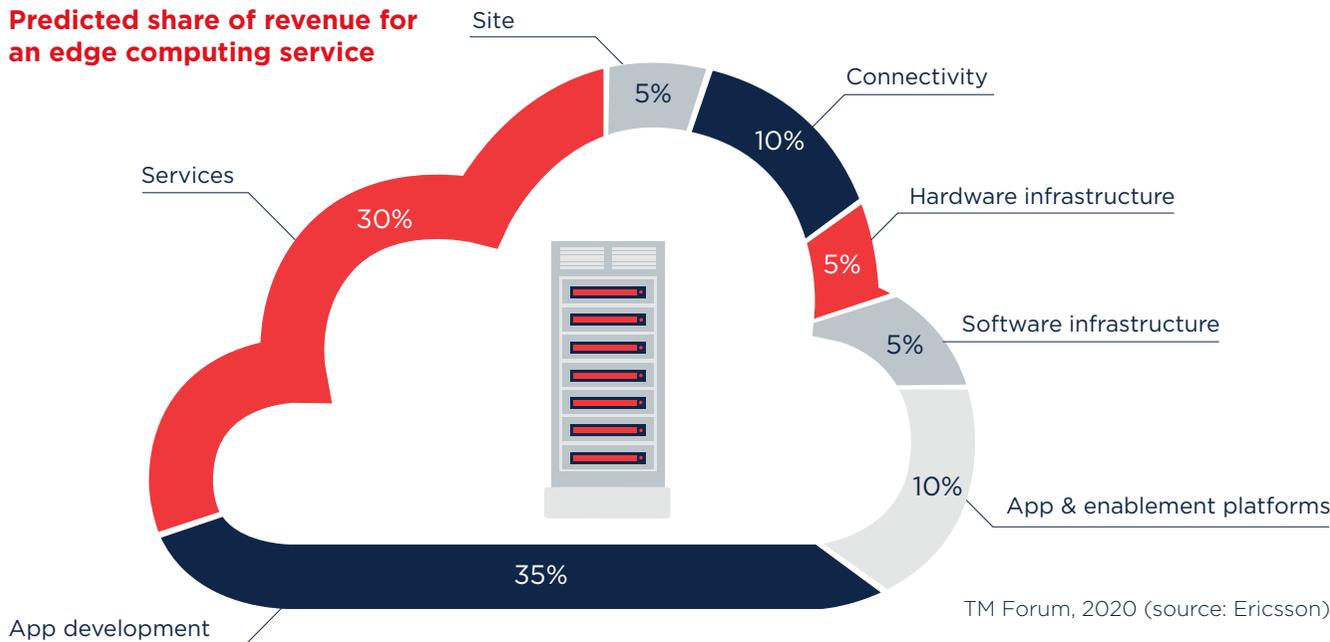
Several large CSPs have been building IT infrastructure platforms over the last several years. Now, with 5G and edge computing they have an opportunity to use their platforms to create platform business models by bringing in application developers to innovate around connectivity solutions.

The issues CSPs haven't solved, however, are how to attract developers and the extent to which operators can leverage existing developer communities from technology partners such as Microsoft or Salesforce.

Show me the money

In deciding which strategies and business models to pursue, CSPs must assess the profitability of each approach. Connectivity will only ever account for a small proportion - perhaps 5% to 10% - of the total value of future ICT services. The highest value will be attached to the application itself and "ownership" of delivering services to enterprises.

Predicted share of revenue for an edge computing service



Operators that want to generate revenue beyond connectivity most likely will focus on the services part of the business. Some believe that they can orchestrate an ecosystem of partners to deliver services to enterprises via a platform business model. Many are also looking to provide professional services such as systems integration or managed services to enterprises. However, to be successful they may need to compete with established professional services firms which currently are more likely to be partners than competitors to CSPs.

THE BOTTOM LINE

Communications service providers have two key assets: their networks and relationships with customers. As they develop strategies to go beyond connectivity, playing to these strengths is critical.

For example, if telcos are pursuing platform or marketplace strategies and do not already offer customers an excellent digital experience, their chances of success are slim. And when it comes to the mobile private network opportunity, operators' unique selling point is the fact that they already manage and operate mission-critical networks.

Act like a startup

CSPs must be clear and consistent about how to measure success. The sheer size of the core telecoms business and its predictability in terms of revenue generation make it tough for telcos to commit to funding new lines of business over the long term. In addition, executives enjoy more prestige (and rewards) for running large, mature lines of business than risky ventures with low profiles and limited resources.

But if CSPs are serious about expanding beyond connectivity, they need to adopt the traits of digital startups. This means focusing on usage, not revenue, and on the ability to pivot rapidly in terms of strategy and business model.

OpEx isn't a dirty word

Telecoms operators have a rigid, structured approach to capital allocation. They optimize for network build-outs that take years and give large equipment vendors end-to-end responsibility for network deployments. More flexibility is needed to seize new opportunities in B2B.

Rather than taking a “build it and they will come” approach, CSPs should view network investment as a cost of sale and adopt OpEx instead of CapEx models. This is starting to happen as telcos are deploying multi-access edge computing to meet clear demand from enterprise customers and then incorporating the edge back into the macrocellular network.

Play nice

Most CSPs realize that when it comes to creating compelling new products and services, they do not have all the answers. Partnerships hold the key to successful innovation and delivering the range of capabilities required to support a variety of use cases and groups of customers.

However, CSPs are often disappointed by their own rigid approaches to partnering, both technically and commercially. Telcos must treat partners more like customers than suppliers and develop capabilities to assist their partners' businesses. This means giving them real-time access to data about how services are being used by partners' end customers.

How to monetize beyond connectivity - Drive innovation through flexible foundation approach

Rise of 5G is creating new economic value for CSPs

For several years, CSPs have been searching for an approach to provide their customers with value beyond connectivity and diversify their revenue sources. The introduction of 5G is an opportunity for a paradigm shift for CSPs. Combined with the adoption of cloud-based technologies and new delivery models, it allows them to innovate with **new use cases and new business models. CSPs can then offer premium services for connectivity and beyond, opening doors to new revenue streams.** In addition, 5G offers the potential for CSPs to **expand their value chain** and revenue streams by exploring cross-industry business opportunities. With an **expanded partner ecosystem**, CSPs will have the **agility to develop new B2B2X models** while accelerating innovation and lowering the operating cost, thus offsetting pressure from traditional services.

In the 5G era, delivering frictionless superior customer experience is the new currency that opens the door for enormous economic opportunity. With 5G, CSPs can deliver **consistent and assured high-quality services to consumers in real time** and drive next-level customer experiences. CSPs can also meet their customers' changing needs in real time with more personalized and agile service provision. CSPs have the opportunity to **ride on the industry 4.0 wave** by ensuring high-capacity and ultra-low latency bandwidth to **enable millions of IoT devices and various applications** and meet the process and automation requirements of enterprises.

Monetize with confidence

Cloud has become the standard enabling technology for CSPs who are searching to evolve their BSS and monetization solutions. It supports them to experiment and quickly leverage new monetization opportunities as well as other complementary services. It also provides agility, scalability, and flexibility to meet customers' growing and changing digital expectations. However, for CSPs laying the foundation for 5G and IoT monetization, this is not enough to gain a competitive edge.

In this evolving world, to stay competitive and establish their leadership in the market, CSPs **require innovation, new functionalities, and flexibility above and beyond traditional monetization capabilities. CSPs are thinking about how they can:**

- Redesign customer engagement strategies to meet their needs in real time
- Deliver assured and committed high-quality services to customers
- Develop new business models, e.g., B2B2X quickly and with ease
- Operate efficiently without overspending on compute power

CHALLENGE 1: Meeting customer expectations in connectivity and beyond

Solution: Driving superior CX with AI-driven cross system automated provisioning

Advanced capabilities driven by real-time AI insights combined with automated triggering and action for provisioning services enable CSPs to uplift customer experience and ensure committed SLAs.

- **Network monitoring to unfold network experience issues:** With round-the-clock monitoring of the network metrics that are available on events, CSPs can get insights on network utilization peaks and lows and on network capacity, delivered bandwidth, and quality of service provided to users. This enables the CSPs to predict network experience issues and proactively address them, thus enhancing customer experience.
- **Real-time, AI-driven customer insights to deliver personalized offers:** AI-driven, real-time insights on customer behaviour combined with network capacity utilization management allows CSPs to engage with their customers in real time with meaningful optimized offers or improved experience suggestions while cross/up-selling services. For example, knowing when a video gamer typically uses AR-related services and pushing a relevant discounted offer when network capacity is underutilized can wow a gamer.
- **Smart and flexible real-time triggering:** With a real-time, UI-based triggering module, CSPs can configure any parameters (e.g., network bandwidth, SLAs, all types of services — mobile, TV, IoT sensor, fixed, and all business models — subscription, PYG, bundle, etc.) that generate triggering to internal process and/or to external systems, such as provisioning, policy control, or to a partner system to deliver real-time services.
- **Automated provisioning to ensure service quality and reduce customer complaints:** By leveraging pre-integrated and embedded policy, CSPs can automatically take corrective actions if promised network bandwidth SLAs to customers are not met. For example, for a user subscribed to a plan to watch 8K resolution video on an OTT platform at an agreed bandwidth, if the bandwidth level drops below the agreed level, the system can push an update to the user along with an additional complimentary data bundle. In the future, by using AI/ML, the CSP can build self-enhancing algorithms, which let networks teach themselves how to improve often before a problem occurs.



CHALLENGE 2: How do you ensure costs do not skyrocket when 5G and IoT traffic explode?

Solution: Leverage edge and value-based monetization to contain operational cost when traffic surges

Innovative new capabilities, such as distributed charging on the edge and value-based charging, will reduce the need for additional compute power and lead to cost savings.

- **Distributed Charging on the edge enables reduction of network traffic to central processing:**
A growing number of industry use cases that generate heavy traffic and events have low latency requirements. A new processing approach that includes distributed charging on the edge answers this need and reduces the amount of traffic to a centralized data centre or cloud.
- **Value-based charging to drive down cost:** As 5G and IoT will create events that vary in their monetary value (from very high-value to very low-value), processing them similarly will drive an increase in cost. Therefore, it is important for CSPs to process these in a cost-efficient manner. For example, a set of IoT sensors in a smart city will generate hundreds of records daily for status reporting. They are processed in aggregation as they generate small monthly subscription fees (low ARPU). On the other hand, augmented reality subscription fees, including promise for guaranteed bandwidth for certain times, generate a limited number of records but have high ARPU and are fully processed to deliver customer experience.



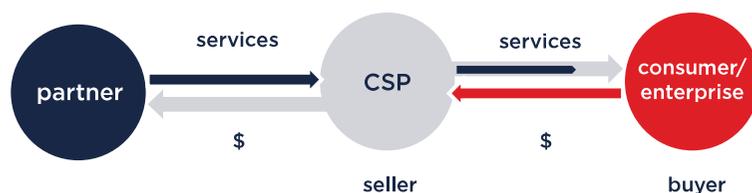
CHALLENGE 3: What commercial model will work? What service beyond connectivity?

Solution: Fast delivery and experimentation of new functionalities

CSPs' long-term growth lies in the development of new revenue streams beyond connectivity both for consumer and enterprise, and industry 4.0 offers further opportunities. To harness them it is important for CSPs to focus on:

- **Adherence to open-architecture guidelines to reduce partner integration complexities:** Following TM Forum's Open Digital Architecture (ODA) and standard APIs guidelines allows CSPs to quickly integrate new and innovative partners and enhance their complimentary portfolio with new services. It enables CSPs to reduce time, complexities, and costs of integration as it ensures consistent requirements across all components. Thus, it reduces the need for IT development and decreases dependencies on vendors.
- **Development of innovative business models beyond connectivity with partners:** By expanding their partner ecosystems, CSPs have opportunities to change their roles from being a connectivity provider only to an E2E solution provider. Along with partners, they can develop new commercial models especially in the B2B2X arena and grow their business. New business models provide CSPs the opportunity to sell bundles and combine their and partners' offerings directly or indirectly to a range of customers.
 - a. **Direct B2B2X model (CSP driven):** By partnering with lifestyle and ecosystem providers, CSPs can bundle multiple services — home monitoring, health services, wearables etc. — along with guaranteed high bandwidth and offer subscriptions directly to consumers to drive additional revenue and enhance loyalty and stickiness.
 - b. **Indirect B2B2X (Partner driven):** CSPs can diversify their businesses to tap into new customer segments. For example, by partnering with an automotive retailer, a CSP can pave the way for future mobility and automated driving by lighting millions of automotive IoT sensors. Over a network slice optimized for automotive IoT sensors, they can enable vehicle-to-vehicle communications and provide over-the-air updates of applications and software, and enhanced multimedia and infotainment features, such as weather forecasts, current traffic information, etc.
- **In-built testing frameworks to deliver new functionalities quickly:** In-built automated testing frameworks, which come with OOTB functionalities and include thousands of predefined test use cases, enable CSPs to dramatically decrease the testing period and manual operational resources required to support them. It ensures that while rolling out new functionalities all user journeys and experiences are approved before launch. This perfects the delivery of a seamless and fluid customer experience while experimenting with new capabilities and services.

Direct B2B2X



Indirect B2B2X



HOW IS THIS TRANSLATED TO REALITY?

A: Truphone enjoyed faster time to market and 60% reduced TCO

At Truphone, Optiva deployed a cloud-native charging engine (based on TM Forum's ODA and Open APIs) in just five months — one-fourth the industry standard. Truphone benefited from more dynamic capabilities to launch new digital services quicker, cheaper, and with less risk. A new automated CI/CD pipeline has enabled a more rapid time to market by reducing the number of tests from over 5,000 to approximately 190 automated and end-to-end tests. Further, with a cloud-native solution, Truphone has been able to eliminate its CapEx almost completely and reduce its TCO and provides a lean & efficient foundation to host their real-time IoT services.

B: Tier 1 operator in APAC with 200M+ subscribers acquired business agility and growth

With Optiva's monetization solution, the CSP acquired increased agility, flexibility, and cost savings. It has also improved and grown its digital offerings and provided a continually progressive and innovative customer experience, resulting in a 20% revenue growth. By deploying a cloud-native solution, the CSP improved its CPU utilization by 75%. and it was able to scale-in and scale-out the system in 10 minutes.

C: Exito, an MVNO in LATAM, delivered improved customer experience with automated operations

By deploying the Optiva BSS Platform, Exito benefited from increased operational efficiency and system availability, decreased customer problems and support tickets, and improved and faster customer service and resolution of issues — all despite growing traffic and increased customer expectations due to the pandemic. The autonomous operations have provided Exito the platform stability, scalability, and support needed to drive an improved customer experience, which has led to growth and increased market share in its heavily competitive market.

**faster time
to market**

**efficient
operations**

agility

scalability

**customer
experience**

OPTIVA'S NEXT-GENERATION MONETIZATION SOLUTION

Optiva offers agile, flexible, centrally managed next-generation revenue monetization solutions. Optiva's solutions take advantage of innovative functionalities, such as close-loop, AI-driven, real-time contextual awareness; edge-based charging; value-based charging; automation; and more. It will help CSPs gain:

- **Faster TTM** of new tailored subscriptions that leverage usage analytics to meet customers' needs
- **Seamless development and rollout** of new functionalities and features without disrupting operations
- **Operational excellence** via cloud-native deployment to ensure lower TCO, reduced risk, and meeting of capacity needs
- **Superior customer experience** by delivering assured, high-quality 5G service
- **Swift integration of partners** to develop new bundles that generate additional revenue and increased customer reach

Guiding telcos around the globe

Optiva Inc. is a leading provider of mission-critical, cloud-native revenue management software for the telecommunications industry. Its products are delivered globally on the private and public cloud. Its solutions help service providers maximize digital, 5G, IoT, and emerging market opportunities to achieve business success. Established in 1999, Optiva Inc. is on the Toronto Stock Exchange (TSX:OPT). For more information, visit www.optiva.com

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