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Harnessing the 5G consumer potential

The consumer revenue
opportunity uncovered

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Methodology

Ericsson, together with Omdia, has undertaken this study to uncover the 5G consumer revenue opportunity for communications service providers until 2030. The study involved building an extensive revenue forecast model which considered various data sources and inputs. These included internal strategic forecasts from the Ericsson Mobility Report around 5G subscriber growth, and extensive ConsumerLab insights on 5G early adopter behaviors and trends, in addition to forecasts from Omdia around the potential revenue opportunity for core and adjacent digital services, ranging from cloud gaming to m-commerce.

Ericsson ConsumerLab also conducted an online survey among 7,500 smartphone users across 17 markets (Australia, Belgium, China, France, Finland, Germany, Ireland, Italy, Romania, South Korea, Sweden, Switzerland, the UK, the US, the UAE, Qatar and the Kingdom of Saudi Arabia) in July 2020, representing the opinions of 750 million consumers. The study was designed to understand the impact of the pandemic on 5G adoption and willingness to pay for devices and plans.

About Ericsson Consumer & IndustryLab

Ericsson Consumer & IndustryLab delivers world-class research and insights for innovation and sustainable business development. We explore the future of consumers, industries and a sustainable society with regards to connectivity by using scientific methods to provide unique insights on markets, industries and consumer trends. Our knowledge is gained in global consumer and industry research programs, including collaborations with renowned industry organizations and world-leading universities. Our research programs cover interviews with over 100,000 individuals each year, in more than 40 countries – statistically representing the views of 1.1 billion people.

All reports can be found at:
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Key definitions

Core digital services revenues:

- Live sports streaming: Consumer spend on mainstream sports when live-streamed via dedicated standalone sports streaming video services.
- Enhanced video: Video on demand services in 4K/8K and new formats.
- Music: consumer spend for digital music services delivered over 5G. Based on the portion of data usage which can be directly allocated to 5G as opposed to Wi-Fi.
- Gaming: consumer spend on mobile games which are downloaded and played on a 5G device.
- Cloud gaming: share of consumer spend for cloud gaming streaming services delivered over 5G.

- Augmented/virtual reality: consumer spend on mobile AR and VR content delivered over 5G on mobile devices, glasses or headsets.
- Consumer IoT services: 5G wearable revenues and smart home revenues, based on the portion of data usage which can be directly allocated to 5G as opposed to fixed broadband.

Adjacent digital services revenues:

- Revenues described as “adjacent” because they are nascent or peripheral to communications service providers.
- Digital advertising: advertising spend for static and moving images displayed on a screen delivered on the 5G network.

- In-car entertainment/connectivity: share of consumer spend for media, entertainment and connectivity services for in-car 5G-connected vehicles.
- In-venue digital services: interactive entertainment in-venue, such as the ability to access multiple camera angles, on-board view/experience, real-time statistics etc.
- Advanced digital services: futuristic internet of senses scenarios that are very nascent; 3D holographic, future interactive movies and haptic internet and gaming.
- M-commerce: Consumer revenues generated through payments for physical goods and services which will run over 5G networks.

Key findings

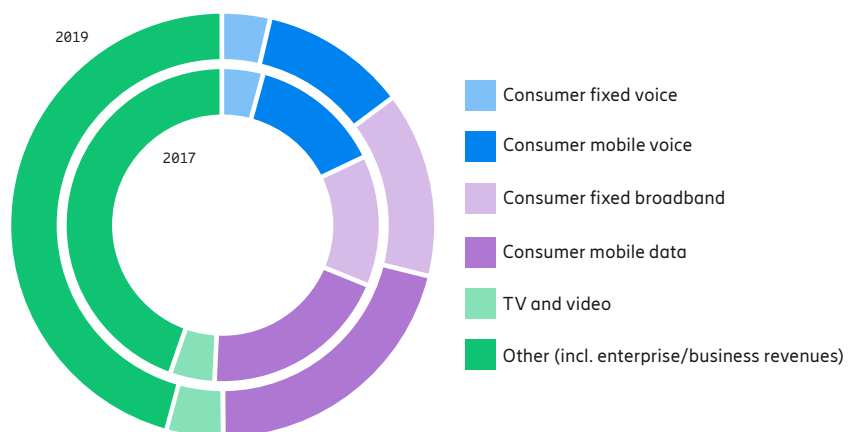
Harnessing the 5G potential will require fostering innovation and collaboration to accelerate and extend 5G deployment and its benefits to consumers.

1. The consumer market already generates a high share of wireless service revenues for service providers and will continue to grow in importance with 5G.
2. Service providers will provide the 5G technology platform that underpins nearly USD 31 trillion in cumulative consumer revenues for the ICT industry by 2030. Service providers could clinch a cumulative USD 3.7 trillion of these 5G-enabled consumer revenues by 2030.
3. The pandemic has impacted consumer willingness to pay a 20 percent 5G premium, reducing it by half; however, 1 in 3 early adopters globally are still willing to pay a 20 percent premium.
4. Service providers can directly generate USD 131 billion by 2030 from digital service revenues by proactively developing and marketing 5G use cases. Key opportunities lie with enhanced video, advertising, in-car connectivity and extended reality.
5. By being proactive in driving 5G differentiation, service providers could gain a 34 percent higher 5G ARPU by 2030, growing their consumer revenues at a CAGR¹ of 2.7 percent up to 2030 as opposed to flat revenues with a passive approach.

The importance of the consumer market for service providers

Consumer services including mobile, fixed voice, broadband, TV and video services already accounted for an average of 56 percent of revenues for service providers globally in 2019; a 2 percentage point rise in 2 years. The remainder comprises of business and enterprise segments. Gains in operators' total revenue share were driven by mobile data services and, to a lesser extent, by fixed broadband, TV and video. In the mobile market, the consumer business generated 79 percent of overall mobile broadband revenues for service providers and this is expected to increase to 81 percent by 2024, driven by the impact of 5G. While much attention has been placed on enterprise verticals by mobile operators seeking new revenues that leverage the advanced network characteristics of 5G, the consumer market will still generate the majority of core mobile revenues for service providers. The success of 5G in the consumer market will be crucial for service providers, underpinning the network expansion to enable them to also target new use cases for industries and enterprises.

Figure 1: Global service provider revenue by type (2017 and 2019)



¹ CAGR is the compound annual growth rate in the revenue during a specified period



5G promises to enable a diverse set of use cases

5G and consumer adoption

The first commercial network launched in South Korea in April 2019. By the end of the second quarter of 2020, 73 service providers had fully launched 5G and were offering consumer services which had attracted over 80 million subscribers. By September 2020, GSA reported over 100 commercial 5G networks.² Some markets have seen rapid adoption as service providers launched a range of attractive tariffs bundled with innovative services, with South Korea exceeding 13.2 percent penetration of the mobile market with 9.25 million subscribers moving to 5G.³ With attractive bundling of services, Chinese service providers sold over 100 million 5G tariffs by the end of the second quarter of 2020, though only 64 million 5G phones are reported as shipped.⁴ By the end of 2020 we expect to see over 190 million 5G subscriptions.⁵

As a result, 5G adoption is far more rapid than previous generations, and is likely to break the 20 percent level for share of mobile subscriptions 2 years faster than 4G.

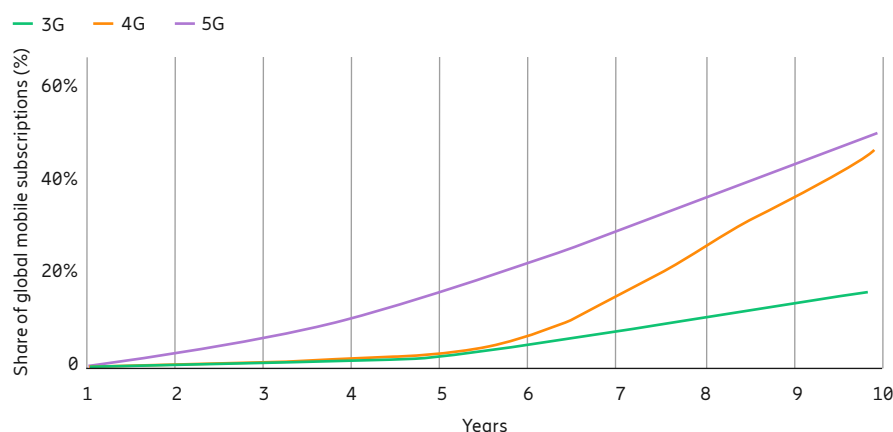
5G supports diverse consumer use cases

Ericsson ConsumerLab research in May 2019⁶ uncovered over 30 use cases relevant for 5G, which promises to enhance the experience of existing consumer digital services, and also offer new and more advanced services. There will be opportunities for revenue uplift as service providers position 5G as a premium service, leveraging enhanced speeds, reliability and lower latency to create specialized services and innovative tariff structures. Other opportunities will arise for proactive service providers who would be willing to tap into the consumer revenues that 5G will enable more broadly through bundling a range of digital services or use cases over a 5G data plan.

The digital services referenced in this report which will be enhanced by 5G can be broadly classified as:

- **Core digital services:** enhanced video (4K, 8K and formats like 360-degree video), live sports streaming, music, gaming (mobile and cloud), augmented and virtual reality (AR/VR) and consumer IoT services. These are described as “core” because they are either established as consumer services already offered by service providers, or present clear opportunities for 5G service providers to operate as providers of their own services or sales channels for services from third-party providers.
- **Adjacent digital services:** Digital advertising, in-car entertainment and connectivity, in-venue digital services, and advanced digital services (such as the internet of senses) which will bring new senses online. These are described as “adjacent” because they are either very nascent or peripheral to service providers.
 - **M-commerce:** consumer revenues generated through payments for physical goods and services which will run over 5G networks. This opportunity has been difficult for service providers to tap into but presents a huge market opportunity if they can carve out a role in this value chain.

Figure 2: 5G adoption rate compared to previous generations



Source: Harnessing the Consumer Potential Study, November 2020; Ericsson and Omdia analysis

² Global mobile Supplier Association

³ According to MSIT, the Korean ICT department (September 2020)

⁴ According to CAICT

⁵ Ericsson Mobility Report (June 2020)

⁶ www.ericsson.com/en/reports-and-papers/consumerlab/reports/5g-consumer-potential

5G could help arrest mobile revenue stagnation

The transition to 5G could enable service providers to reverse the trend of stagnating and declining consumer mobile revenues only if they take a proactive approach.

Regulatory and competitive pressures have contributed to the long-term trend for stagnating or declining cellular revenues and mobile ARPU. As the number of unique users grows, ARPU continues to fall, with the drop in voice and SMS revenues outpacing growth in mobile data revenues. Taking a proactive approach, by exploring and bundling relevant core and adjacent consumer digital services running on the back of mobile data connectivity, offers the best opportunities for service providers to reverse this decline.

A passive approach, which is based on only offering commoditized voice and data risks, will miss out on significant revenues.

As shown in Figure 3, total 5G ARPU using proactive strategies could be up to 34 percent higher at USD 9.61 in 2030. Core digital services would directly contribute USD 0.21 per user per month to this in the proactive scenario. In North America, ARPU from connectivity and core digital services will be boosted by USD 8.87 (32 percent) in a proactive strategy, while in Western Europe the additional USD 3.43 in revenue equates to an extra 27 percent in 5G ARPU. Globally, more unproven “adjacent digital services” revenues come from expanding into areas outside of core digital services and have the potential to additionally uplift the global monthly 5G ARPU by another USD 0.22 in 2030.

Early adopters and first-to-market premium pricing from service providers inflated 5G ARPU in 2019. The pandemic in 2020 has impacted service providers' ability to charge a 5G premium. However, 5G ARPU subsequently will recover ground, as the COVID-19 impact lessens and service providers roll out added 5G-related services, that open new revenue streams and help upsell 5G to early adopters who are willing to pay a premium.

5G with a proactive approach delivers 34 percent higher 5G ARPU when compared to a passive approach by 2030.

Figure 3: Global blended monthly mobile ARPU (USD) non 5G vs. 5G passive and proactive approach forecast, 2019–2030



Source: Harnessing the Consumer Potential Study, November 2020; Ericsson and Omdia analysis

5G is an opportunity to gain a competitive advantage

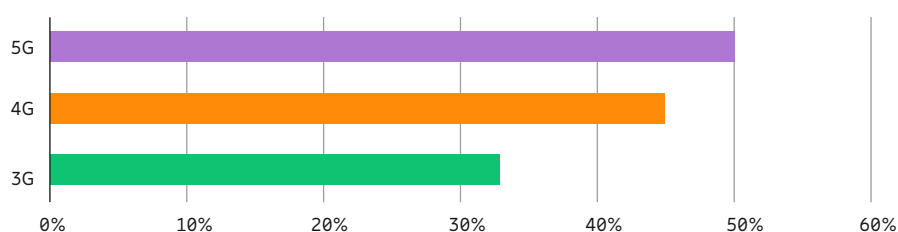
The movement to 5G presents an opportunity for service providers to strengthen their position in the consumer market.

Launching new-generation technology early and building out quality coverage has resulted in a sustainable advantage for service providers in the 3G/4G era. While many markets have seen 5G launches occur simultaneously, in 16 markets where there was a first-mover period, 50 percent of first-mover service providers have already shown indications of market share gains.

The transition to 5G provides an opportunity for service providers to strengthen their position in the consumer market, with the focus on 5G quality and availability of new digital service bundles on a 5G plan. For example, LGU+ in South Korea, despite its smaller market share in comparison to KT and SKT, has had a better development in gross subscriber additions and a more positive year on year mobile service revenue development when compared to its peers since 5G launch.⁷

For a long period Telstra has been the market leader in Australia; however, it endured a slow decline in market share which dropped below 50 percent in 2018 for the first time since the merger of 3 Australia and Vodafone in 2013. That long-term trend reversed with the launch of 5G and market share is now back to in excess of 50 percent.

Figure 4: Percentage of first movers gaining market share



Source: Harnessing the Consumer Potential Study, November 2020; Ericsson and Omdia analysis



5G is key to service provider competitiveness in the consumer market

⁷ Source: Service Provider Financial Reports and www.opensignal.com/reports/2020/06/southkorea/mobile-network-experience-5g

The pandemic and the 5G consumer demand

Will COVID-19 have an impact on the progress of 5G and consumer adoption rates?

Consumer awareness around 5G has seen an increase, with 20 percent more users now aware of 5G promises when compared to a previous ConsumerLab survey in May 2019. However, the pandemic has caused economic and financial impact on consumers' lives, raising questions and doubts over the timeline for adoption of 5G.

Half of the consumers in the recent survey claim their financial situation has been impacted by the pandemic. As a result it is expected that consumers will be cautious around spending more on 5G plans.

In May 2019 consumers were willing to pay on average a 20 percent premium for a 5G plan bundled with at least three digital services of their choice. Due to the pandemic this premium has been eroded, with consumers on average willing to pay 10 percent more for their 5G plan. However, one-third of 5G early adopters with greater awareness of 5G promises are willing to pay a 20 percent premium. In certain markets, like the US, South Korea, Australia and Finland, the

reduction in 5G premium is comparatively less. This premium erosion could be short-lived, as 45 percent of respondents across the markets surveyed expect their household income to improve over the next 12 months. Consumers have valued access to resilient connectivity during the pandemic; on average one-third say they will continue to spend more on mobile broadband connectivity over the next 12 months.

Across the 17 markets in our survey, 25 percent of consumers say they are likely to upgrade to a 5G smartphone. Among these, 16 percent had not planned to but are now considering upgrading. About half of those who plan to purchase a 5G smartphone in the US, Australia, Sweden and Switzerland are existing iPhone owners looking to upgrade to iPhone 5G models.

Consumer spending on digital services

The survey suggests that on average one-third of those considering taking up 5G will continue to spend on core digital services

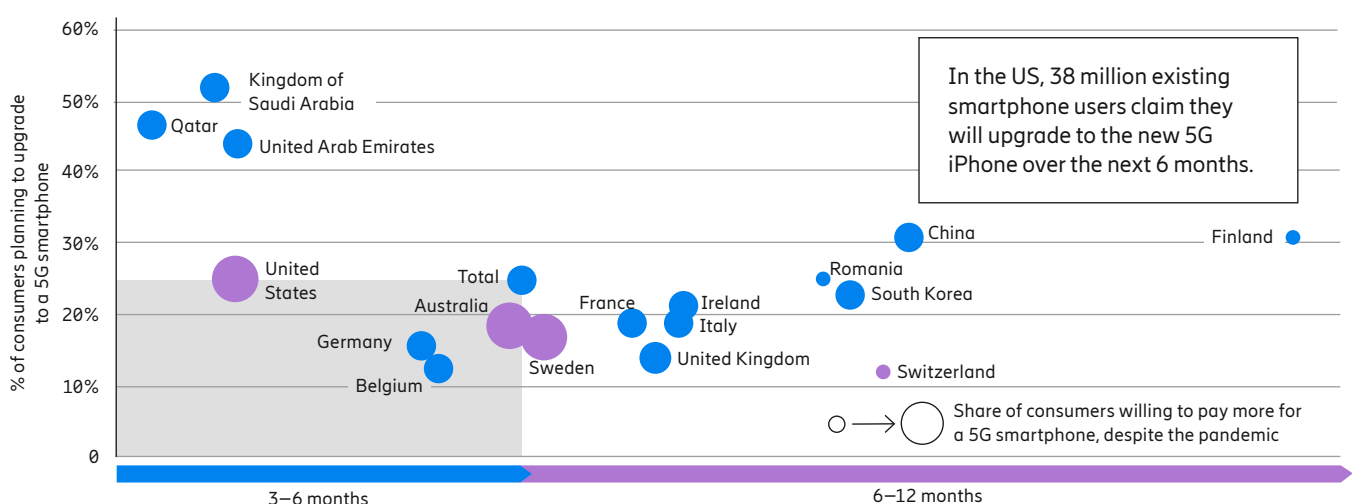
10%

COVID-19 has reduced 5G premium to 10 percent but 1 in 3 early adopter consumers are still willing to pay a 20 percent premium for a 5G plan.

including video on-demand streaming subscriptions, high-fidelity music and live sport streaming services. More time spent at home during the pandemic has resulted in increased interest in investing in emerging 5G-enhanced digital services, such as cloud gaming, immersive education (like digital AR books for kids) or services that offer remote digital live event experiences.

Will service providers be able to translate this consumer interest in, and demand for, 5G and relevant digital services into actual revenues for themselves?

Figure 5: Consumer willingness to upgrade to a 5G device over a 12-month period



Source: Ericsson ConsumerLab, Harnessing the Consumer Potential Study (November 2020)

Base: Smartphone users aged 15–69 in Australia, Belgium, China, France, Finland, Germany, Ireland, Italy, Romania, South Korea, Sweden, Switzerland, the UK, the US, the UAE, Qatar and KSA

5G consumer revenue opportunity

Service providers have an opportunity to capture a sizable share of consumer revenues which will be transacted over 5G networks.

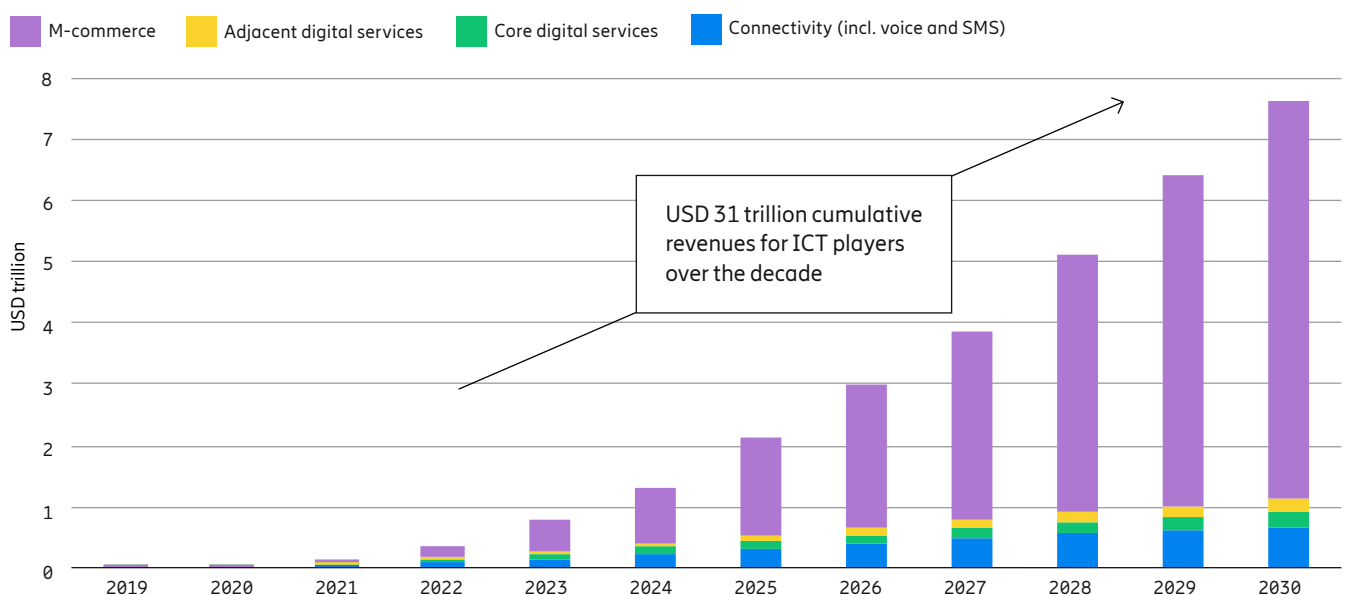
Service providers will provide the 5G network platform that underpins nearly USD 8 trillion in annual consumer revenues flowing through to ICT industry. This is nearly nine times the combined 2019 annual revenues of five big technology players, Amazon, Facebook, Apple, Google and Microsoft,⁸ and around eight times the total mobile revenues for the telecom industry.⁹ The cumulative consumer revenues flowing over the 5G networks over the coming decade will amount to USD 31 trillion.

Service providers have the opportunity to tap into more of this ICT revenue flow by pursuing a proactive strategy for each service segment. A proactive strategy will maximize connectivity revenues by embracing innovation in mobile broadband tariffs and supporting alternative connectivity solutions such as 5G fixed wireless access (FWA). Core and adjacent digital revenues will help uplift revenues as service providers develop and market digital services by working with ecosystem players and developers to bundle services into their offerings.

In the 3G and 4G era the lead use cases of mobile web and video were already established while with 5G, the killer use cases are still being explored. Proactive service providers could play a more assertive role in the industry value chain innovating and curating digital services independently or together with ecosystem players rather than waiting for other players to come in and grab a bigger share of consumer spending. Service providers should not make the same mistakes as seen in the 4G era.

Service providers will provide the 5G technology platform that underpins nearly USD 31 trillion in cumulative consumer revenues flowing through to the ICT industry by 2030.

Figure 6: Global total 5G-enabled consumer revenues addressable market for ICT industry (USD trillion)



Source: Harnessing the Consumer Potential Study, November 2020; Ericsson and Omdia analysis

⁸<https://www.visualcapitalist.com/how-big-tech-makes-their-billions-2020/>

⁹https://www.gsma.com/mobileeconomy/wp-content/uploads/2020/03/GSMA_MobileEconomy2020_Global.pdf

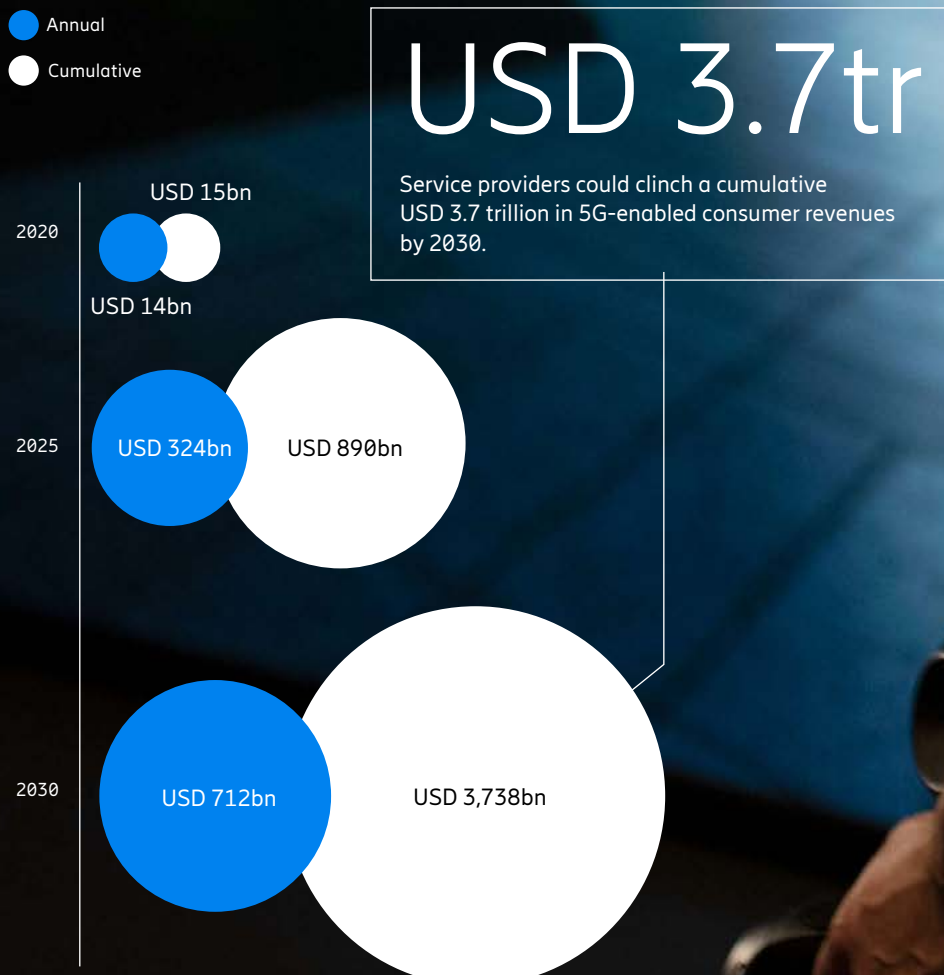
The trillion-dollar opportunity for service providers

Of the USD 31 trillion addressable consumer market potential, service providers could capture around 12 percent of this market by 2030 and an opportunity to grow this share even further.

This will amount to cumulative revenues of USD 3.7 trillion by 2030 or USD 712 billion annually. Connectivity accounts for most of those revenues, but digital services will uplift connectivity revenues with service bundling, encouraging consumers to upgrade to higher tariff tiers. By 2030 almost 6 billion 5G subscribers are likely to spend on average USD 9.61 per month with service providers pursuing a proactive

strategy. 5G mobile connectivity and digital service revenues will reach USD 659 billion and an additional USD 53 billion can be generated by delivering FWA to homes through the 5G network. Thus, a total forecast annual revenue opportunity of USD 712 billion in 5G enabled consumer revenues is possible — only if service providers are proactive with their strategies for the 5G consumer market.

Figure 7: Global, total service provider share of 5G-enabled consumer services revenues



Digital services will uplift connectivity revenues

Pricing innovation to capture the connectivity opportunity

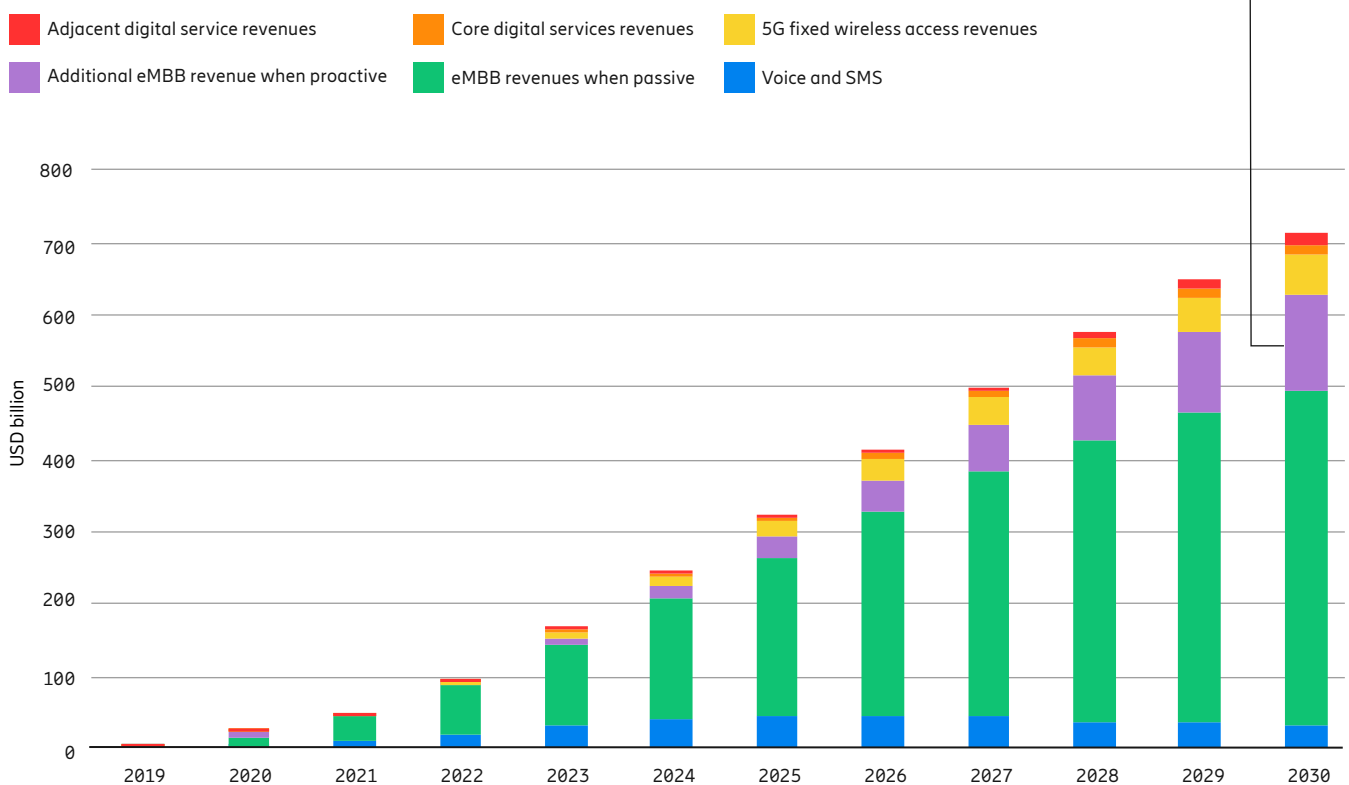
A combination of attractive pricing models and service providers' promotion of innovative services could help to facilitate growth in connectivity revenues.

Service providers own the connectivity market and will see their revenues transitioning to 5G, as mobile subscribers migrate to the new network. 5G will provide capacity to handle growing data traffic, as well as present opportunities for service providers to improve their consumer business. By 2025, 30 percent of wireless connections will use 5G, rising to 65 percent by 2030. A combination of attractive pricing and service providers' efforts to educate and make consumers aware of innovative digital services will help to facilitate the transition. Proactive

service providers will also leverage pricing innovation and bundling of core and adjacent digital services on 5G data plans to encourage consumers to pay a premium for 5G enhanced mobile broadband connectivity thus boosting enhanced mobile broadband connectivity revenues by at least 30 percent from USD 461 billion to USD 598 billion in 2030. There is already some degree of rethinking around pricing strategies, evident in launches to date, with six clear pricing strategies being pursued as shown in Figure 9.

Proactive service providers gain a 30 percent increase in 5G mobile connectivity revenues by bundling relevant use cases, exploring new revenue segments and innovative pricing models.

Figure 8: Impact on service provider approach on enhanced mobile broadband (eMBB) consumer revenues



Source: Harnessing the Consumer Potential Study, November 2020; Ericsson and Omdia analysis

Figure 9: Diversity of 5G pricing models

Pricing model	Description	No. of service providers (Q2 2020)
Nothing new for 5G	The service providers who made no changes to their 4G tariffs when launching 5G.	16
Data tiers only	Tariffs with set amounts of inclusive data but no 5G rich apps bundled.	24
Incremental fee	An additional fee is charged to activate access to the 5G network, usually around USD 5–10. Some service providers have delayed fee implementation due to low network availability or COVID-19.	5
Speed tiers	Only offers different speed levels (usually with unlimited data) but does not bundle 5G rich apps.	6
Hybrid	Combines more than one pricing model (data tiers, speed tiers, do nothing, incremental fee) but does not bundle 5G rich apps.	5
5G rich plans	Plans are bundled with a service that are optimized for 5G networks – 3D AR shopping, VR cloud gaming, enhanced audio and video. These plans are bundled with other pricing elements (e.g. speed, data, incremental fee). For example, if a telco offers Speed Tiers and mobile gaming for 5G, it is categorized here.	17

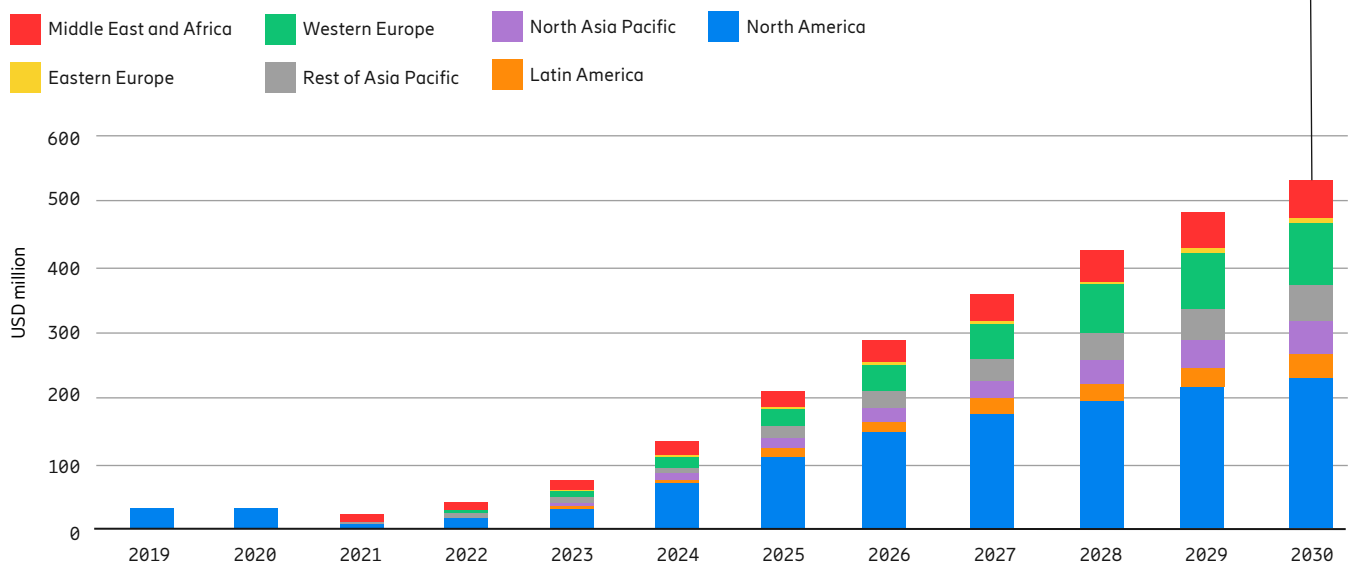
Service providers need to rethink pricing models to put content and service benefits at the center of the 5G price plan. There is an opportunity to drive ARPU uplift by pricing for speed, and other network characteristics like latency in the long run, but digital services centric pricing models offer the best opportunities to create 5G differentiation.

Bundling in this way will help service providers to differentiate services and avoid becoming commoditized data pipes. In addition to the 5G offerings of service providers in South Korea, mainland China and Hong Kong, this strategy has been pursued by 17 service providers launching 5G to date. This includes, for example, Vodafone in Italy, Germany, Spain and

the UK with cloud gaming, as well as O2, in the UK, offering a 5G plan bundled with Oculus Go and subscription to the Melody VR service, offering consumers the chance to watch live music events in VR.

5G FWA subscriptions to approach 130 million with annual revenues of USD 53 billion

Figure 10: 5G FWA revenues (USD million)



Source: Harnessing the Consumer Potential Study, November 2020; Ericsson and Omdia analysis

Fixed wireless access

Fixed wireless subscriptions will also see expansion as the enhanced speeds and network capacity make 5G a more viable wireless alternative to fixed-line networks for more users. Service providers in the US have made it clear they will deploy fixed wireless access

(FWA) as an alternative to the limited competition in fixed broadband markets that persists in lower population density areas. As a result by 2030 we expect 5G FWA subscriptions to approach 130 million with annual revenues of USD 53 billion. North America will account for 40 percent of fixed wireless revenues

by 2030, with Asia Pacific and Europe accounting for 19 percent each. As of September 2020 around 37 service providers had launched full FWA services, though many more are conducting trials and moving to tap into the attractive additional 5G home broadband revenue opportunity.

The value of 5G use cases

Proactive service providers could earn a total cumulative USD 131 billion in direct revenues from 5G-enabled digital services/use cases over the decade.

Of these direct revenues, over 40 percent are expected to be generated by enhanced video and immersive video formats such as AR, VR and cloud gaming streaming services. These revenues are generated from charging consumers for digital services bundled over a 5G plan or via revenue sharing arrangements with third parties. However, service providers can act more proactively to maximize their share of this revenue that their network enables, by working as a service creator or enabler for the core digital services and tapping into the new opportunities of adjacent digital services.

Functioning as service enablers, service providers take a cut of third-party services by bundling services and managing the billing relationship. The profitability of the model varies, mainly depending on how service providers engage with the

ecosystem players, and whether hard or soft bundling is used. Such an approach delivers additional benefits, such as improving user acquisition retention and ARPU.

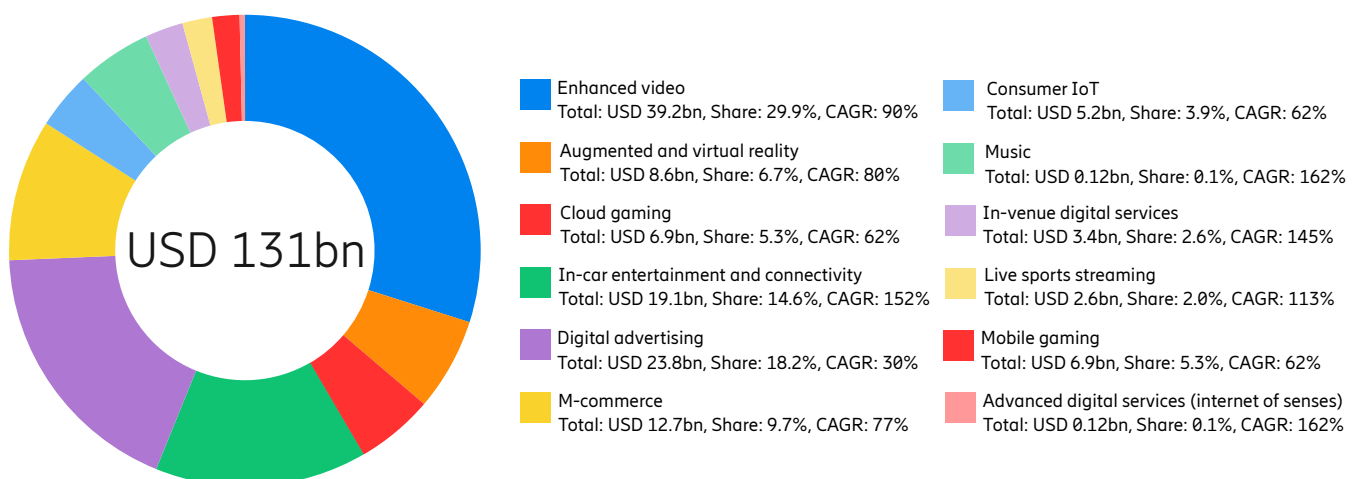
Service providers can also become service creators, developing and offering their own brand services. This strategy has underpinned significant moves by service providers in South Korea, Japan and other Asian markets. Another example is AT&T's acquisition of Time Warner to create a vertically integrated business owning both content and distribution.

Apart from direct revenues from digital services, the real value of use cases is in boosting the 5G enhanced mobile broadband connectivity revenues that arise from the combination of bundling digital services, and using these to upsell 5G data plans at a premium.

Enhanced video and live sports streaming

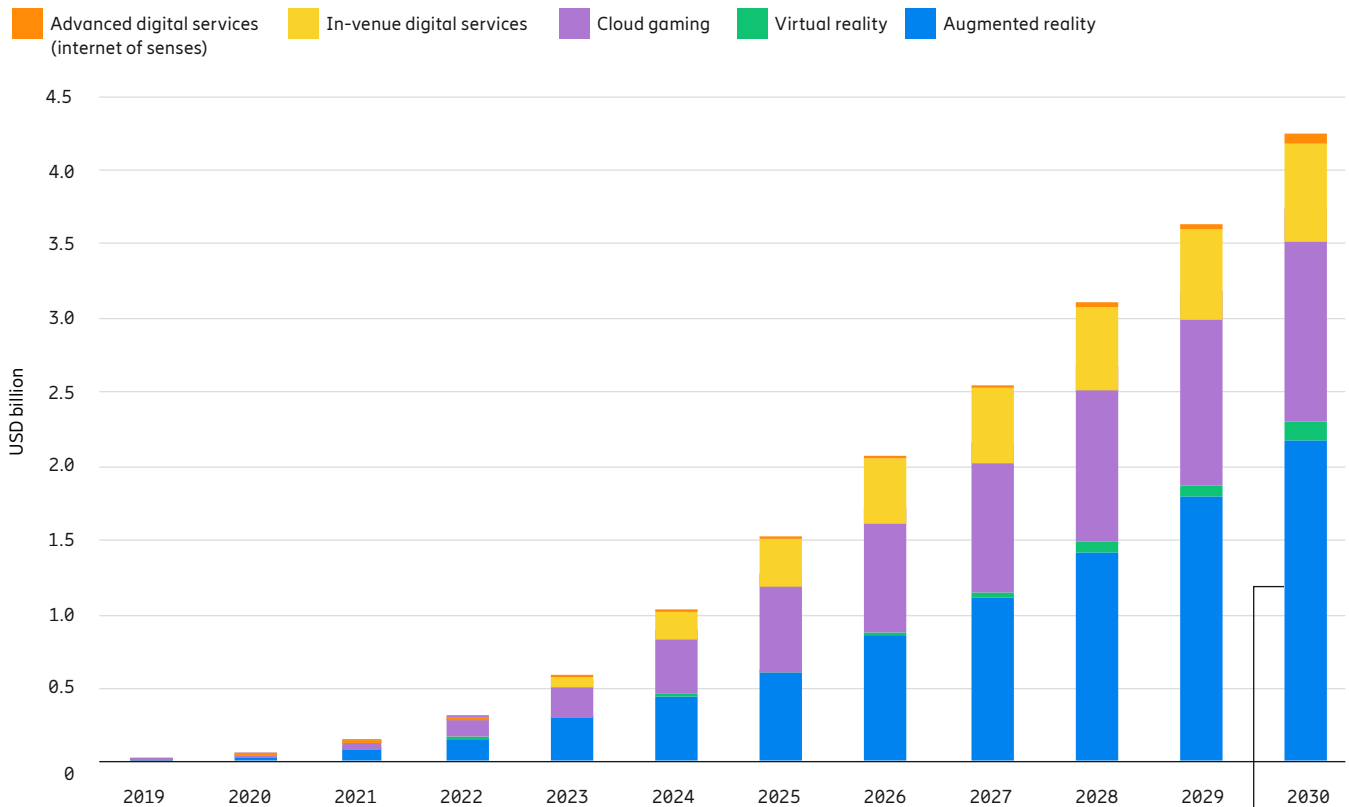
5G networks will allow for seamless and uninterrupted streaming of high-quality video content such as UHD, 4K, 8K with high frame rates and new formats. We refer to such formats as enhanced video services which include all non-sport genre paid OTT video, and AI-based video content and premium esports streaming. This accounts for 30 percent of the USD 131 billion total direct digital services generated for service providers between 2019 and 2030. On the other hand, streaming of live sports will account for 2 percent of digital service revenues for service providers. With broadcast integrated into 5G, sports will offer opportunities for serving many subscribers with lower demands on the network. For example, EE customers in the UK are already innovating with sports streaming apps such as BT Sports by offering a more personalized and immersive match day experience for sports fans.¹⁰

Figure 11: Global service provider share of cumulative 5G-enabled digital consumer services revenues by type (2019–2030)



Source: Harnessing the Consumer Potential Study, November 2020; Ericsson and Omdia analysis

¹⁰ <https://www.mirror.co.uk/tech/ee-launches-match-day-experience-22851009>

Figure 12: Global service provider share of 5G-enabled immersive media revenues forecast

Source: Harnessing the Consumer Potential Study, November 2020; Ericsson and Omdia analysis

XR as the new video over 5G

Extended reality (XR) is an umbrella term used to describe immersive technologies such as augmented reality, virtual reality and mixed reality, meaning that nearly all forms of technologically supplemented reality fall under the XR umbrella. AR use cases alone are likely to generate good consumer interest and half of overall immersive media revenues for service providers when compared with other digital services like cloud gaming, VR content, in-venue digital services and advanced digital services (internet of senses).

ConsumerLab research¹¹ shows that AR gaming emerges as the highest ranked AR application amongst consumers, and that gaming is likely to be the main initial driver for AR. Other application areas for AR, such as TV and video viewing, home planning and school and educational usage, will follow.

Sixty-seven percent of gamers also claim they will increase their AR usage in the next five years. It is clear AR is poised to make its mark on society, and media consumption is going to be a key component of immersive experiences on the augmented road ahead.

Service providers in South Korea, China, Taiwan, Japan and other markets are proactive in developing AR- and VR-based services, while bundling headsets with 5G tariffs to open up this nascent market. Mobile handset-based AR services currently in the market, such as 1010's Lens service in Hong Kong¹², Softbank Japan AR Square app¹³ and LGU+'s 3D AR shopping, are a sign of the shift for AR to move beyond gaming. AR glasses are still somewhat developmental but rapidly improving and will become a practical user experience over the forecast period. XR viewer manufacturer Nreal¹⁴

By 2030, AR alone is likely to generate half of all immersive media revenues for service providers.

has already released its lightweight smartphone-tethered AR glasses with LGU+ in South Korea.

There is an incentive for service providers to try to find a new product category beyond smartphones like smartphone-tethered AR glasses to eventually untethered AR glasses in the future that they can drive to the mass market, in order to restart the whole consumer device purchase and re-purchase cycle. If and when that happens, a lot of application/digital service revenue streams will potentially also open up for service providers.

¹¹ <https://www.ericsson.com/en/reports-and-papers/consumerlab/reports/ready-steady-game>

¹² <https://www.1010-5g.com/en/5g-ar-lens-campaign.html>

¹³ <https://static.multi.vsp.mb.softbank.jp/arsquare/index.html>

¹⁴ <https://www.koreatechtoday.com/lg-uplus-nreal-to-launch-5g-powered-ar-glasses-u-real-glass/>

Beyond connectivity and core digital revenues

5G is likely to unlock new revenues from adjacent sectors with key opportunities in automotive, digital advertising and m-commerce segments.

Commerce and advertising

M-commerce makes up the bulk of total revenues as retail moves online and online moves onto mobile and 5G. Competition from established e-commerce players in most markets, and the resultant high cost of entry, mean that service providers may only take 0.04 percent of m-commerce revenues but by 2030 that will amount to USD 2.3 billion of a USD 6.5 trillion 5G-enabled market. However, service providers can leverage assets such as insight into user identity and behavior, trust, retail locations and agent networks, along with billing and payment systems, to clinch a higher share of revenues from this segment. An example of this is SK Telecom's launch of a 5G phone that is powered by blockchain technology.¹⁵ The phone uses blockchain to protect the users' identity and secure user data for online and offline mobile payments and transactions.

Service providers will also take a relatively small 2.1 percent (USD 3.7 billion) stake in the USD 175 billion digital advertising market. While service providers had drawn limited success in their forays into the advertising business to date, small gains here will translate to significant revenues as 80 percent of digital advertising will accrue to mobile. Nascent services, specifically AR, offer opportunities for service providers to intermediate in advertising and m-commerce. These have already been explored by LG U+'s "U+ AR Shopping" service, which enables users to transform the content of two popular TV shopping channels into 3D AR experiences.

Connected cars

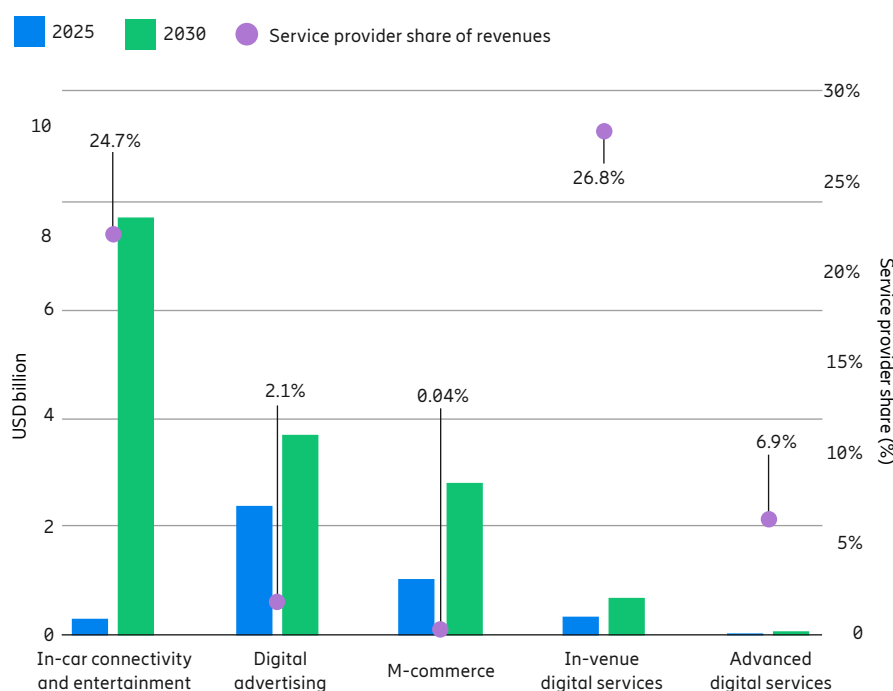
The greatest revenues in the adjacent category are expected to come from consumer spend for in-car services. Service providers' ownership of connectivity will support revenues around USD 8 billion, 25 percent of a USD 31 billion opportunity in this segment by 2030. Key use cases

here include in-vehicle Wi-Fi hotspots, passenger/driver media and entertainment, and consumer-facing car safety/security applications. BMW has already announced that the iNext all-electric SUV will be the first vehicle to carry 5G connectivity when it launches in 2021, while General Motors plans to launch vehicles capable of 5G connectivity for Chinese consumers beginning in 2022. Recent ConsumerLab research¹⁶ asked consumers to rank 16 mobility service concepts which could augment their commuting experience. The majority showed high interest in enhanced assisted drive features supported by connectivity in the car, for example where information is collected from vehicles and sensors, regarding hazards beyond the horizon.

Internet of senses beyond 2030

Advanced digital services cover a range of services that are in development and will bring new senses to media advancing the concept of the internet of senses into reality. This includes holographic mobile displays and haptic VR controllers and suits. The growth in this area will emerge starting in 2025 and is expected to grow rapidly at the end of the forecast period. From 2025 onwards, total 5G-enabled consumer revenues generated by internet of senses related services will be up from USD 41 million to USD 791 million in 2030 with a CAGR of 63 percent.

Figure 13: Global 5G-enabled adjacent digital services revenue and service provider market share



Source: Harnessing the Consumer Potential Study, November 2020; Ericsson and Omdia analysis

¹⁵ https://www.sktelecom.com/en/press/press_detail.do?idx=1459

¹⁶ <https://www.ericsson.com/en/reports-and-papers/consumerlab/reports/augmenting-the-daily-commute>

The upside of a proactive approach

By embracing a proactive approach service providers could see a rise in 5G consumer revenues.

5G networks will enable cumulative consumer revenues of nearly USD 31 trillion by 2030. Service providers will take a good share of the total and by increasing their share even a small amount will make significant differences to their total revenues and profitability.

The proactive approach includes tapping new connectivity segments by offering FWA, exploring new pricing models, enabling and bundling third-party services or curating services in-house. In addition, leveraging both local and global ecosystems of application developers and innovative startups can make optimal use of new network features of 5G.

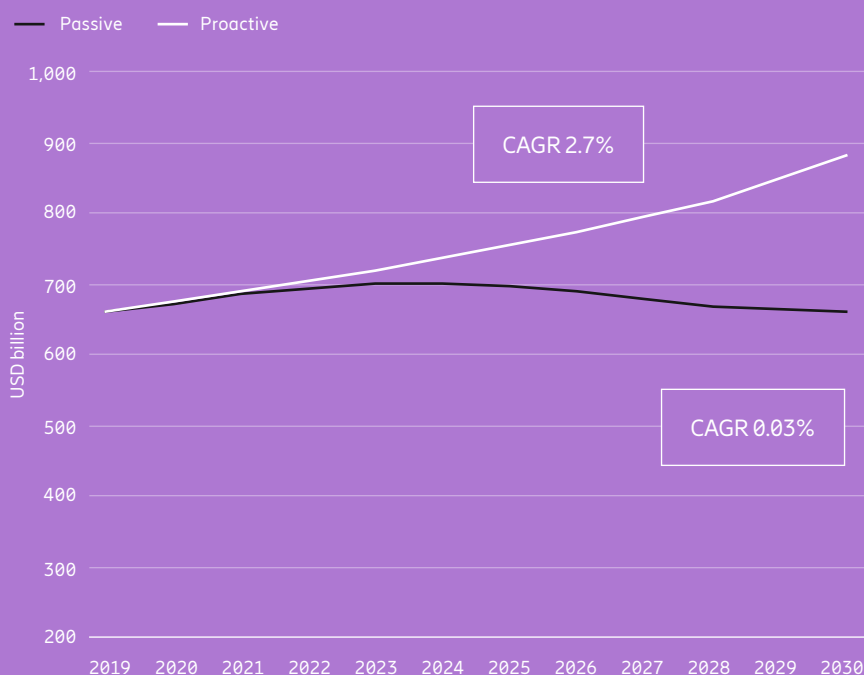
Under a passive approach, where service providers just focus on connectivity (enhanced mobile

broadband), total consumer mobile service revenues (2G to 5G) see a CAGR of just 0.03 percent from 2019 to 2030, while a proactive approach generates a CAGR of 2.7 percent. By 2030, a proactive approach will lead to additional monthly revenues of 34 percent more than a passive approach, equating to an annual revenue increase of USD 219 billion in 2030. This USD 219 billion is attributed to enhancements to mobile broadband revenues from tariff uplift due to bundling of core or adjacent digital services and new revenue streams from fixed wireless access. New revenues from FWA generate USD 53 billion in 2030, while USD 137 billion of that value comes from the additional mobile revenue that will accrue as innovative services push consumers into greater use and

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towards higher priced plans. The core digital services will generate additional direct revenues of USD 14.4 billion, while adjacent consumer services generate an additional USD 14.9 billion in 2030. As a result, 5G mobile broadband ARPU could see an uplift of USD 2.42 per month, assisting service providers to capture a higher share of monthly consumer spend.

Figure 14: Consumer wireless revenue growth trajectory by type of 5G approach adopted by service providers



Source: Harnessing the Consumer Potential Study, November 2020; Ericsson and Omdia analysis

Key implications:

- Service providers should establish high-quality 5G coverage early. Half of early-mover 5G carriers have increased market share already.
- The consumer market is an attractive 5G revenue opportunity for proactive service providers. Leverage ecosystem partnerships to capture an even higher share of USD 31 trillion addressable consumer revenues that will flow over 5G networks.
- Service providers should see use cases/digital services as a way of differentiating their 5G offering.
- 5G connectivity still remains the biggest revenue driver. The greatest revenue boost will come from bundling use cases with 5G tariffs to be able to convince consumers of the value of a 5G network platform.

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