10 5G USE CASES TO MONETIZE

INTRODUCTION

The fifth generation of cellular technology is upon us, and it ushers in a new era of unprecedented possibilities. With speeds up to 100 times faster than 4G, ultra-low latency and astonishing capacity, 5G will support a massive number of devices connecting to the network simultaneously.[1] This impressive capacity will provide the fast and reliable connections needed to support new and innovative use cases.

By early 2021, 144 operators in 61 countries had launched at least one 3GPP-compliant 5G service.[2] By 2021, communication service providers (CSPs) have invested billions in 5G infrastructure and are eager to reap the benefits.[3] To get a return on their 5G investments, CSPs will need to think creatively, as there is not one surefire use case.

Today, CSPs are trying different use cases, and the future looks full of even more opportunity. In this eBook, we'll take a look at a variety of 5G use cases, both current and future, and what CSPs need to effectively monetize the opportunity.

5G

BY EARLY 2021,

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[1] "4G vs. 5G: The key differences between the cellular network generations," Business Insider
[2] "NTS Update – February 2021 – Status Snapshot," GSA
[3] "Gartner Says Worldwide 5G Network Infrastructure Spending to Almost Double in 2020," Gartner

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CURRENT 5G USE CASES

USE CASE #1
FIXED WIRELESS ACCESS

5G fixed wireless access (FWA) offers consumers and businesses remarkable speeds while creating an alternative to traditional internet offerings. With FWA, users can self-install an antenna that connects to a nearby 5G tower. Once the antenna has been installed, individuals and businesses can enjoy lightning-fast 5G speeds that rival fixed broadband.[4]

FWA could be critical in bridging the digital divide. For example, in the United States, the FCC estimates that 21.3 million Americans, or 6.5 percent of the population, lack adequate broadband access.[5] In developing countries, the divide is even greater, with fewer than 20 percent of people having access.[6] FWA is currently picking up steam, and one estimate predicts that it will account for more than 180 million connections and 25 percent of total mobile data traffic worldwide by 2026.[7]

[4] "5G: Technology That Will Release Full Potential of FWA," Broadband Communities
[5] "FCC Reports Broadband Unavailable to 21.3 Million Americans," Benton Institute
[6] "Coronavirus has exposed the digital divide like never before," World Economic Forum
[7] "Marek's Take: Is fixed wireless the answer to bridging the digital divide?" Fierce Wireless

USE CASE #2
DRONES

While not yet ubiquitous in everyday life, drones are used across many verticals, including film, construction, delivery and farming. Drones give users a birds-eye view of locations and can enter hard-to-reach areas that humans can't.

T-Mobile recently partnered with the Drone Racing League to explore the applications of 5G in tech-powered sports.[8] Their first endeavor tackles sports entertainment; future uses include 5G drones for emergency response, public health and retail. Verizon has also enabled drone fleet management through 5G network slicing.[9] The dedicated 5G network slice provided the low latency required to achieve instantaneous feedback loops.

[8] "Fueling 5G Drone Innovation," T-Mobile
[9] "Four 5G drone demonstrations and trials," RCR Wireless News

USE CASE #3
AUGMENTED REALITY (AR)

Apps like Pokémon Go popularized the use of augmented reality, and 5G will be instrumental in unleashing the full potential of AR. In the past, the technology was significantly held back by a lack of bandwidth, resulting in frustrating lags. 5G's low latency and capacity will allow users to interact with digital environments in real time.

5G is currently supporting a variety of AR applications, such as gaming, museum tours and sporting events. For example, Verizon has used 5G technology to allow NBA players to successfully practice using 5G-powered, first-person goggles with attached video cameras.[10]

[10] "5G takes center court," Verizon

USE CASE #4
HEALTHCARE TRACKING AND REMOTE SURGERY

With 5G, surgery has gone virtual. Thanks to the low latency of 5G, healthcare professionals in one location can operate on patients in different countries. Using Telefónica's 5G connectivity, a Spanish doctor performed surgery in collaboration with a fellow surgeon in Japan, who had access to augmented reality vital signs and a real-time video feed.[11]

There are other 5G medical applications currently in use, such as high-definition consultations and remote monitoring.[12] During COVID-19 lockdowns, patients have been able to connect with their healthcare providers more easily with 5G.

[11] "Telefonica demos surgery with a bit of help from 5G," Telecoms.com
[12] "10 5G Healthcare use cases transforming digital health," STL Partners
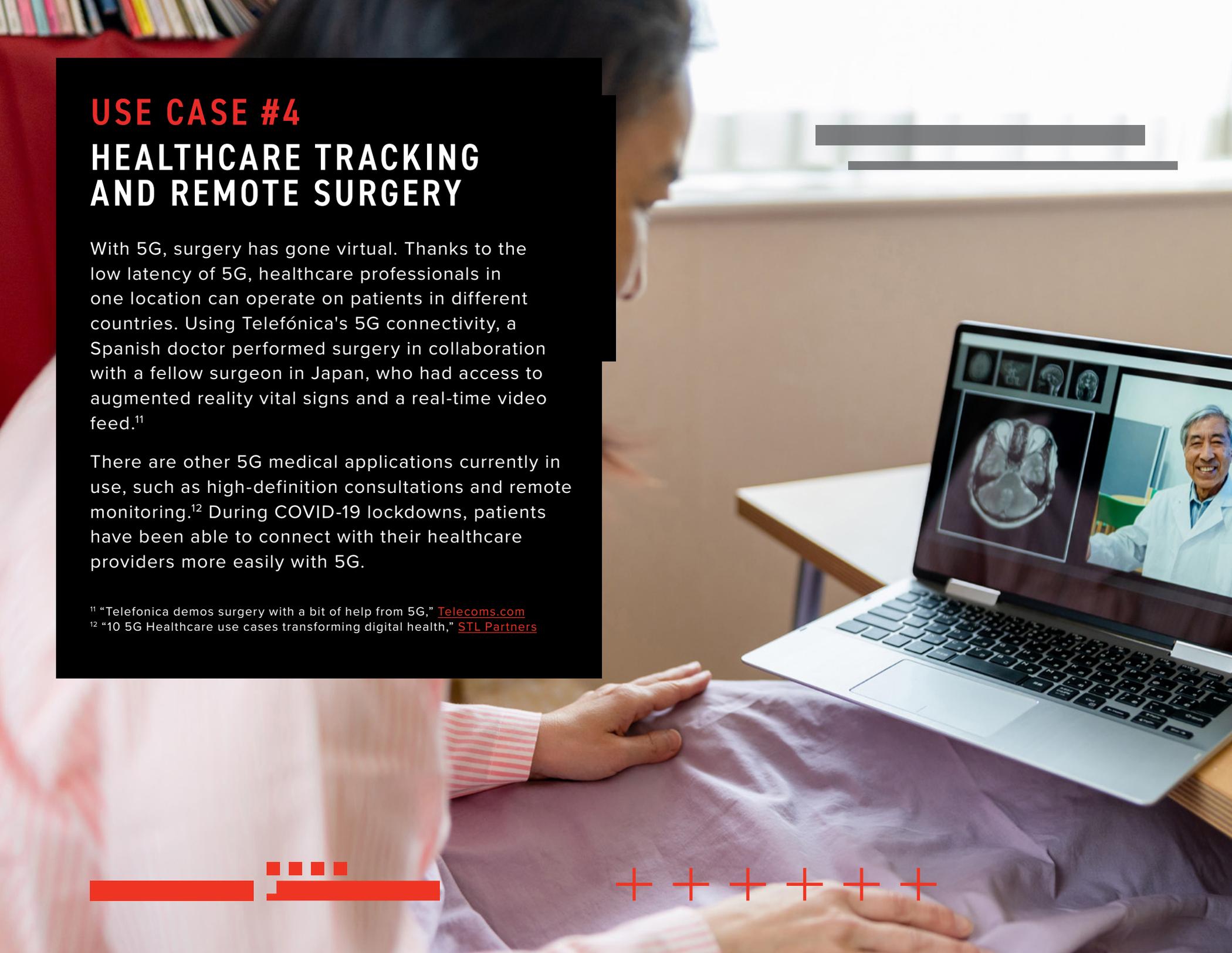
USE CASE #5
5G MOBILE PHONES

To take advantage of the speed of the 5G network on a mobile, a 5G phone is required. While initial adoption was slow, 5G phones are rapidly becoming commonplace. Major providers like Apple and Samsung already offer 5G phones.

Gartner believes that sales of 5G smartphones will reach 539 million units this year, which will account for 35 percent of all smartphone sales.[13] As more consumers become aware of the promise of a 5G phone, and use of a "5G fast lane" at crowded events, we will see widespread adoption.

[13] "Gartner Says Worldwide Smartphone Sales to Grow 11% in 2021," Gartner

EVOLVING 5G USE CASES

USE CASE #6
CONNECTED CARS

5G is driving a paradigm shift in the automotive industry. One firm estimates that 41 million 5G-connected cars will be on the road by 2030, and 83 million by 2035.[14] General Motors plans to launch vehicles with 5G connectivity in China in 2022, and Ford has an eye on the Chinese auto market as well.[15]

The applications of 5G in connected cars are boundless, from safety to entertainment to pollution reduction. The cellular vehicle-to-everything (C-V2X) market will enable the exchange of information between infrastructure, traffic signs, pedestrians, cyclists and other vehicles.

[14] "5G propels connected vehicles into top gear," Computer Weekly
[15] "Ford CTO hypes 5G in autonomous vehicle future," Light Reading

USE CASE #7
FACTORIES

The modern factory is much more connected and complicated than you may imagine. Massive, advanced machines are equipped with different sensors that are connected to cloud-run analytics operations. Currently, many of these machines require wired connectivity or less-reliable Wi-Fi connections.[16]

5G-enabled sensors will shed this dependency and unleash the potential of a connected, intelligent factory. Further, 5G can enable "humanoid" robots that can replace humans in a dangerous factory setting.[17] Operators like Vodafone are already working with carmakers to connect machinery through 5G networks at their factories.[18]

[16] "Smart Manufacturing Powered by 5G," PWC
[17] "These Factory Robots May Point the Way to 5G's Future," Wired
[18] "Vodafone to build private 5G network for Ford electric vehicle factory," Capacity
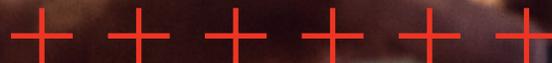
USE CASE #8
SMART CITIES

Smart cities have the potential to fundamentally improve and change the way human beings live—and make the Jetsons more closely resemble the Flintstones in the process. With the power to process massive amounts of data in real time, 5G will be crucial in the enablement of smart cities.

5G-enabled smart cities will allow governments to better understand and serve their communities. One application that every motorist will appreciate is the deployment of adaptive traffic signals, which will substantially reduce traffic congestion. Even though real time traffic monitoring is severely underutilized today, a recent trial in South Korea showed the technology to be 94 percent accurate.[19] From energy and utilities to transportation and safety, smart cities can pave the way for a more sustainable and efficient future.

[19] "A Look at Solutions for Smart City Traffic Infrastructure," Smart City Hub

USE CASE #9
AGRICULTURE/FARMING

Like smart factories, connected machines can be used to great effect in farming. As many farms are in rural areas, connectivity can be difficult and expensive, so 5G technology can make rural connectivity feasible.

Wireless sensors can help farmers monitor field conditions, which should result in better crop yields. British farmers have utilized wireless collars to monitor the movements and health of their cows by sending data through the 5G network.[20] With the global population rising, connected agriculture can also help fill the gap in food disparities by enabling more predictable agricultural yields.

[20] "Cows go wireless: Fitness tracing and 5G collars enhance this farm's efficiency," USA Today

USE CASE #10
AUTONOMOUS CARS

Think of it—you're watching your favorite show, sitting comfortably with your feet on the dash while you're driving solo to work. What was once thought to be pure science fiction is fast becoming a reality.

The low latency and high speeds of 5G will be one of the technologies key to supporting a network of self-driving vehicles, with steering and navigation responding in a matter of milliseconds. There are multiple benefits of 5G for autonomous driving, such as network slicing and "edge" data centers.[21]

[21] "5G network as foundation for autonomous driving," Deutsche Telekom

HOW TO MONETIZE 5G

Operators have made enormous investments into 5G and are ready to see a return on their investment. 5G network usage needs to be rated and charged in near-real time, at massive scale without substantially increasing costs.

Operators will need to modernize their technology stacks to meet the needs of 5G and the expanding ecosystem needed to deliver innovative use cases to the market. CSPs will need new charging and mediation components for 5G—a charging function (CHF) and a convergent charging system (CCS).

To manage the rapid growth in third-party offerings, CSPs will need to invest in zero-touch partner onboarding, catalog management and settlement solutions. The ideal solution for monetizing 5G will be cloud-first, based on proven and market-leading technology, showcase proven scalability and be deployed and certified in virtualized environments.

While the 5G era has already begun, it's clear the best is yet to come. The fifth generation of cellular technology will fundamentally modernize the way many industries operate today, creating a massive opportunity for operators. The right monetization solution will ensure that CSPs realize the potential of their 5G investments.

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ABOUT CSG

For more than 35 years, CSG has simplified the complexity of business, delivering innovative customer engagement solutions that help companies acquire, monetize, engage, and retain customers. Operating across more than 120 countries worldwide, CSG manages billions of critical customer interactions annually, and its award-winning suite of software and services allow companies across dozens of industries to tackle their biggest business challenges and thrive in an ever-changing marketplace. CSG is the trusted partner for driving digital innovation for hundreds of leading global brands, including AT&T, Charter Communications, Comcast, DISH, Eastlink, Formula One, MTN and Telstra.

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