

# COVID-19: IoT has a limited role in dealing with the current crisis, but could help with future pandemics

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IoT has been absent from telecoms operators' press releases about their actions regarding COVID-19. This is unsurprising because IoT accounts for only a small share of their revenue. Inevitably, COVID-19 will have a short-term impact on demand (many IoT projects are likely to be put on hold) and will lead to supply-side disruptions. However, it could also create longer-term opportunities for operators to explore, especially as governments prepare for future outbreaks.

## COVID-19 will affect demand and disrupt the supply chain in the short term

**Demand-side impact.** Operators will inevitably experience delays to IoT projects, if not cancellations. The large IoT verticals such as automotive have already been affected by the pandemic. Automotive OEMs such as General Motors have temporarily closed their production plants in an effort to stem the spread of the virus, and large suppliers to the automotive industry such as Schaeffler Group in Germany have adjusted their production schedules.

**Supply-side impact.** Many sensors, devices and other components are assembled in China where production is just restarting, but the production of components and raw materials is grinding to a halt in other countries (such as Germany and Malaysia). The smartphone supply chain has already felt the impact of COVID-19. Apple issued a warning to investors in February 2020 that the iPhone supply will be "temporarily constrained" due to supply-side issues.<sup>1</sup> The IoT market faces a similar period of interrupted supply.

The coronavirus crisis is already exposing some weaknesses in network reliability, and this will make it harder to sell IoT solutions on public networks.

IoT operators face a potentially lengthy period of uncertainty; IoT revenue growth will be severely affected. Operators will need to plan accordingly and put measures in place, not just to weather the storm, but to innovate and prepare for the long-term implications of the COVID-19 outbreak.

## Operators should explore now how they can address the new requirements for IoT that are expected as a result of the pandemic

The COVID-19 pandemic has already highlighted a number of areas in which telecoms networks and IoT solutions could provide solutions in the future. These include the following.

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<sup>1</sup> Apple (2020), *Investor update on quarterly guidance*. Available at <https://www.apple.com/newsroom/2020/02/investor-update-on-quarterly-guidance>.

**Aggregated data to track movement and people.** Governments now urgently require information about the movement of citizens to track the spread of the virus and, potentially, to monitor quarantine measures. Some operators have solutions that could be adapted for these purposes and indeed some have already made the necessary adaptations.

- Telia's Division X has developed Crowd Insights to provide aggregated smartphone data to cities and transport authorities in the Nordic countries. It is using the tool to track citizens' movements during quarantine.
- Vodafone has been a long-time supplier of data to TomTom Mobility in order to provide insights on traffic congestion.
- Telefónica has developed Smart Steps, which aggregates data on footfall and movement for the tourism, transport and retail sectors. O2 is supplying movement data to the British government.

**Personal data to track people.** This data will also play an important role in tracking clusters of infection, but changes to privacy regulations would need to be made in order to use it. However, such changes may well happen given the unprecedented situation. For example, the authorities in Taiwan monitored high-risk quarantined patients through their mobile phones to ensure compliance with quarantine rules,<sup>2</sup> those in South Korea are tracking infected citizens and alerting others if they have come into contact with them and the government in Israel has passed an emergency law to track infected citizens using their mobile phones.<sup>3</sup>

**Healthcare.** Basic telehealth services (such as remote consultation), which are not strictly IoT solutions, will be used a lot more during this crisis. IoT could help with future pandemics, and COVID-19 could be the trigger to explore new solutions, just as the SARS epidemic in 2003 spurred the governments in South Korea and Taiwan to prepare for today's problems.

Remote patient monitoring (RPM) and telemedicine could play an important role in managing a future pandemic. For example, patients with chronic diseases who have to self-isolate to reduce their exposure to COVID-19 but need continuous care would benefit from RPM. Operators that already have some experience in RPM such as Orange, Telefónica and Vodafone could help.

Telehealth is widely adopted in the USA, and the US authorities are relaxing reimbursement rules and regulations to encourage the extension of specific services. These include the following.

- Medicare, the US healthcare programme for senior citizens, has temporarily expanded its telehealth service to enable remote consultations.
- The FCC has made changes to the Rural Health Care (RHC) and E-Rate programmes to support telemedicine and remote learning. Network operators will be able to provide incentives or free network upgrades that were previously not permitted, for example, for hospitals that are looking to expand their telemedicine programmes.

<sup>2</sup> Jama Network (2020), *Response to COVID-19 in Taiwan*. Available at <https://jamanetwork.com/journals/jama/fullarticle/2762689>.

<sup>3</sup> Business Insider (2020), *11 countries are now using people's phones to track the coronavirus pandemic, and it heralds a massive increase in surveillance*. Available at <https://www.businessinsider.com/countries-tracking-citizens-phones-coronavirus-2020-3?r=US&IR=T>.

In Europe, there have been few large-scale telehealth deployments and very few operator initiatives, but such considerations should be factored into future healthcare planning.

## Government funding will play a critical role in supporting innovation

Some operators and vendors have committed significant funds to mitigate the impact of COVID-19 and foster innovative solutions (not strictly IoT). For example:

- Vodafone UK is funding an initiative to repurpose its DreamLab application for COVID-19
- AWS and IBM have made funds available to encourage innovation from developers in response to the crisis
- the Jack Ma and Alibaba Foundation set up a new platform to enable medical authorities to share information across borders.

However, government funding will play a critical role in supporting continued innovation during the pandemic and afterwards to ensure that society can respond more-quickly to such outbreaks in the future. Indeed, government funding is spurring innovation and accelerating IoT revenue growth in China, as discussed in our [recent article](#). Outside of China, there have been some early initiatives (such as the EU's funding initiative<sup>4</sup>) to enable start-ups and SMEs to develop solutions to “treat, test and monitor the coronavirus outbreak.” Understandably, government investment is currently focused on the more-pressing needs for medical and safety equipment, but in the future, government stimulus funds will speed up innovation and investment to address future pandemics, and IoT is likely to play a role.

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<sup>4</sup> European Commission (2020), *Applications welcome from startups and SMEs with innovative solutions to tackle Coronavirus outbreak*. Available at [https://ec.europa.eu/info/news/startups-and-smes-innovative-solutions-welcome-2020-mar-13\\_en](https://ec.europa.eu/info/news/startups-and-smes-innovative-solutions-welcome-2020-mar-13_en).