How COVID-19 Is Enabling New ICT Technology Use Cases

At the time of writing in April 2020, the global economy has been thrown into chaos as human movement around the world has become restricted, and the movement of global goods and services has come to an abrupt stop. According to ILO (International Labour Organization), while the long-term effects of the pandemic are not yet clear, current estimates predict that up to US$10 trillion, or 1/8th of the global Gross Domestic Product, is at risk, 200 million jobs have already been lost, and the lives of 2.4 billion workers have been disrupted. One of the clear messages from the outbreak is that ICT technologies can play a critical role in combating the epidemic, and the need for Digital Transformation in many if not all industries are more apparent than ever. While videoconferencing solutions have been the clear winner so far (As of April 2020, Zoom Video Communications now has a market cap of US$35 billion) there are several other technologies which have proven important in the battle against the virus and new use cases are emerging. The exhibit below summarizes some key technologies being used during the outbreak and their use cases:

Author:
Marc Einstein
Chief Analyst
ITR Corporation

Profile:
Marc Einstein has over 10 years of telecommunications and digital media industry experience, with domain knowledge covering markets, management consulting and business analysis. An experienced speaker and presenter, he has spoken at major telecommunications conferences in addition to being featured on both print and broadcast media such as CNN, CNBC, BBC Global and Channel News Asia.
He has advised key telecom operators and IT vendors on several projects.
He graduated with both a Bachelor of Arts and a Bachelor of Science in Business Administration with concentrations in Finance, Marketing and Spanish from Washington University in St. Louis and was a visiting student at Rangsit University in Thailand. In addition to English, Marc speaks Spanish, French, Portuguese and Thai and is a basic speaker of Japanese and Mandarin.

Key Technologies Fighting COVID-19:

Digital Payments – Businesses around the world are increasingly shunning cash as physical ATM transactions and in-store purchasing force people to break social distancing suggestions, and it remains unclear how long COVID-19 can persist on physical surfaces. Governments in some countries such as China have already had to quarantine or even destroy banknotes from highly infected areas. As such there has been a flurry of activity for retailers to offer e-payment options such as Apple Pay and Google Pay. Facial recognition technology as a payment mechanism is offered by companies such as NEC and is expected to get a massive boost from the COVID-19 outbreak as it offers a completely contactless solution.

Edge Computing – Edge computing is taking an active role in identifying potentially infected people, and there is now soaring demand for connected cameras which can immediately identify someone who could be sick. FLIR has recently launched a Wi-Fi-connected thermal imaging camera which uses edge computing to instantly recognize individuals with elevated skin temperatures. Many large businesses are rushing to install these devices, which can replace handheld thermal scanners and hence put workers out of harm's way. For example, Amazon has already started to install such devices in its warehouses and Walmart is also doing so in its retail stores in the United States.

Big Data Analytics – Big Data Analytics is proving to be a useful tool, as many companies have the capability to monitor human movement to understand if social distancing measures are working. For example, NTT Docomo was able to aggregate its user data anonymously and determine that foot traffic in typically crowded neighborhoods such as Shinjuku and Umeda has fallen to 20% of typical levels as of April 20. Governments can use this data to understand which areas are not following quarantine suggestions and potentially implement action.

Robotics – Service robots are seeing increased use during the COVID-19 outbreak, as some of the latest models in the industry are able to completely replace jobs done by human labor, and there are now many situations where a physical human presence is potentially dangerous. For example, Denmark's UVD Robots makes a disinfection robot which can clear spaces of harmful viruses and bacteria. This robot, which can be remotely

Exhibit: COVID-19 Outbreak IT Technology Use Cases, 2020

Technology	COVID-19 Outbreak Use Case	Outcome
Digital Payments	Pay with Facial Recognition	Touchless Retail Experience
Edge Computing	Thermal Cameras	Instant Disease Detection
Big Data Analytics	Social Distancing Monitoring	Improved Public Policy
Robotics	Disinfection Robots	Safer Work Environment
Drones	Critical Goods Delivery	Safer Work Environment
Augmented Reality	Remote Respirator Repair	Higher Machine Uptime
Virtual Reality	Remote Events & Meetings	Reduced Business Travel

Source: ITR

controlled by a worker, self-guides to an infected area, performs a disinfection operation in ten minutes and then returns to its workstation. These robots were sent to China to help control the outbreak in its early stages.

Drones – Drones have long been proposed as a last-mile delivery solution, but the COVID-19 outbreak has strengthened the case for delivering goods, now including medicines and test samples, to reduce human contact, with drones being used to deliver goods in infected areas around the world including in the United States, China, Africa, and Europe. Drones have also emerged as a useful tool in other areas, such as identifying those who are not social distancing, broadcasting information, disinfecting spaces, and providing lighting at night at hospital construction sites.

Augmented Reality – Augmented Reality is playing a critical role during the COVID-19 pandemic as the technology is being used to keep ventilators up and running. There is currently a major global shortage of ventilators, and as companies rush to manufacture more, there is also a shortage of technicians who can fix the machines. Israeli startup TechSee offers AR-based field maintenance solutions which allow remote consultations. The company is currently offering its AR services for free in hospitals who lack experienced technicians to help them properly maintain and repair ventilators.

Virtual Reality – The COVID-19 outbreak has caused major events such as the 2020 Summer Olympics, most other sporting events and even Oktoberfest to be cancelled, and there is a huge movement to host more events in a virtual environment. This is starting to already take place, and fittingly, HTC as a major manufacturer of XR headsets decided to move its March 2020 VIVE XR Ecosystem Conference to virtual reality as opposed to holding a physical event in Shenzhen. There is also a huge push to start hosting company meetings in VR as it offers a more collaborative and interactive environment as opposed to a 2D videocall. There are several companies offering VR for corporate meetings such as MeetinVR and Glue Collaboration.

Summary & Conclusions

While the full extent of the COVID-19 pandemic is still far from certain, what has become clear in the last few weeks is that Digital Transformation and new ICT technologies in general are getting a boost as new use cases are emerging to fight the virus. Companies will now have to reassess how these technologies can be used in B2B, B2C, and internal operations as some industries are likely to be changed forever and some may even disappear completely. Social distancing may become a new normal, and ICT technologies will be increasingly used to evaluate public health.