



# The Role of Technology in the Era of COVID-19 Pandemic

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## Abstract

The new SARS-CoV-2 'Covid-19' constituted a real threat that produced major changes to the human life worldwide. It has accelerated the use of technology for distance communication for limitation of human existence to decrease the risk of the air-borne infection. This has included remote working, distance education, online shopping, telehealth, online entertainment during the lockdowns, and major effects on the international trade and the industry sectors. This new virus pandemic gave a lesson of the necessity of the digital transformation and the importance of digital readiness to protect humans and societies from major threats.

**Keywords:** Covid-19; Pandemic; Online Working; Digital Readiness; Transformation

The Covid-19 viral pandemic has spread rapidly from the city of Wuhan in China to the entire globe in less than six months, infecting over 27 million people and claiming the lives of over one million persons. It caused countries to close their borders and make obligatory quarantine and lockdown inside the countries. This has made major changes to people's quality of life and work. It has accelerated the use of technology for distance communication. This included digital payments, telehealth and robotics. Telecommunication can help reduce the spread of the coronavirus while helping businesses stay open during periods of the quarantine [1].

Telecommunication is the exchange of information over distances by electronic means. It transmits signs, signals, messages, words, writings, images, sounds and information of different kinds using wire, radio, optical or other electromagnetic systems [2].

The telecommunication in the era of Covid-19 happened in many forms that included:

## Remote Working

Millions of people around the world have been working remotely due to the coronavirus pandemic and experts are

asking whether this "unusual business" could be the future of work, at least for those people whose job does not require them to be tied to a particular location [3].

Before the era of the Covid-19, there was aroused a question of re-shaping the way companies and organizations conduct their work after the introduction of the advanced technology and the distance communication using the internet [4].

The Covid-19 pandemic has hastened the transformation to the remote working and decreased to minimum the physical existence by insisting upon the social distancing and preventing gatherings [5].

The question now is: Will this 'unusual business' be the 'new normal'? Few large companies in developed economies have already stated that the teleworking will become the standard way of organizing work, and employees need not commute to work again, unless they choose to do so [6].

The advantages of remote working will make us to seek how we can reap them without losing social and economic values of work as a place. Also, it raises attention to increasing safety and cleanliness in workplace. On the other hand,

decreasing the numbers of employees and cessation of some industries made many to lose their job, an issue that needs a timely and a human-centered solution [7].

### Distance Education

The quick transition from the in-campus to the distance learning in schools and higher education was one of the evident effects of the rapidly spreading Covid-19 pandemic. The pandemic has expanded the concept of 'virtual colleges' that were limited before the situation of the virus appearance and its global spread [8].

The question now is: What this transmission carries to the future of education planning and design? [9]

The impact of the Covid-19 on the global higher education will be discussed in detail in another article by the author.

### Online Shopping and Robot Deliveries

Huge overnight changes to the shopping behaviors have happened as a consequence of the Covid-19 pandemic. From bulk-buying to online shopping, people are changing what they're buying, when, and how [4].

Adopting social distancing to slow the spread of the respiratory-transmitted viruses, makes a tendency for E-commerce to be preferred to the in-person shopping. A survey by 'Engine' magazine found that people are spending on average 10-30% more online, with a spike in groceries E-commerce. The rest of E-commerce seems like it might be up a little bit, but no drastic peaks or valleys [5].

The panic buying and stocking up behavior of people at the beginning of the virus pandemic was a response towards an uncertain risky situation that they tried to do so to feel some control. This reaction met three basic psychological needs of autonomy, relatedness and competence [4].

Robots delivery are considered ideal in eras of epidemics by providing contactless delivery and driverless cars that would help keep humans out of contact and harm's way. Humans should supervise delivery robots, to prevent mistakes and confusing situations [10].

### Telehealth

Telehealth technology is not new, however, widespread adoption among health care providers and patients happened in the response to the COVID-19 pandemic [11]. This has allowed many forms of remote care that includes virtual check-in, digital evaluation and management, telephone calls, and online billing for health services [12].

Telehealth accessed safely many patients in certain situations, like routine health care sessions, wellness visits; medication consultation; dermatology settings; eye examinations; nutrition counseling and mental health counseling [13].

Potential limitations of telehealth are the situations that require physical examination of patients by physicians, access and comfort with using the internet, smartphones, tablets and other digital devices, patients' concern for privacy and cultural acceptance of this kind of digital services [14].

There are helpful information for telehealth at telehealth.hhs.gov [14].

### Online Entertainment

This includes online video streaming, amusement parks, theatrical productions, sports, live events, and trade shows. It has grown significantly with the quarantine restrictions and people staying at home. Netflix launched a Google Chrome browser extension named Netflix Party which allows the users to access the video in groups and watch them together [15].

### Supply Chain 4.0

Supply chain operations are dynamically shifting to react to the escalating situation of the Covid-19. Promoting flexible work arrangements, restricting non-essential travel and looking ahead for new supply chain models have been some of the main lessons of the Covid-19 pandemic [16].

### 3D Printing

3D Printing and Media Network brings a story about how additive manufacturing technology is helping to save lives during Covid-19 outbreak. The global pandemic of the Covid-19 virus seriously disrupted the supply chains of different industries all over the world due to the widespread lockdowns and the reduced travel. In the meantime, 3D printing supported the fight against Covid-19 pandemic by supporting the increasing needs for health and medical products like PPE, ventilator components, hands-free door openers and nasal swabs. However, amounts of production, safety and quality control issues are still questionable [17].

### 5G and Information and Communications Technology (ICT)

The new 5G technology has played a key role in healthcare, education, media and other life and industry fields during the Covid-19 outbreak. 5G networks feature larger bandwidth, higher rate, lower latency and wider

connection compared with 4G ones and can support such three scenarios as enhanced mobile broadband, ultra-highly reliable low latency and massive, large connections [18].

### The Importance of the Digital Readiness

COVID-19 has demonstrated the importance of digital readiness, which allows business and life to continue during pandemics. Building the necessary infrastructure to support a digitized world and remain updated with the latest technology will be essential for any business or country to remain competitive in a post-COVID-19 world, as well as take a human-centered and inclusive approach to technology governance [19-21].

### Conclusion

The COVID-19 pandemic has caused unprecedented changes to the human life worldwide. Besides the measurable short-term and long-term economic and health impacts, there are major changes in the daily life practice and habits besides a re-shaping of many sectors and industries. These changes are expected to last for years and there may be additional intangible effects that will be revealed in the coming days, in facing this new mysterious organism of the Covid-19.

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