Post-Pandemic Scenarios
A More Connected World
Third in a Series

Covid-19 has suddenly increased our dependence on technology to connect. We believe these changes will continue after the pandemic ebbs.

- *The pandemic has accelerated pre-existing trends in technology adoption – including in how we work, learn, access healthcare and shop…*
- *…resulting in fundamental changes in how we communicate…*
- *…and raising issues of equal access to technology and the internet.*

December 10, 2020

Post Pandemic Scenarios – Technology

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Idea in Brief

The pandemic has compelled a rapid increase in use of technology for daily activities, including work, education, healthcare and shopping. Businesses, schools, health care providers and retailers adapted quickly. We believe that this increased role of technology for communication will persist after the pandemic comes under control, resulting in permanent changes.

While these technologies were growing prior to the pandemic, COVID-19 has accelerated these trends by a decade or more. **Organizations are therefore faced with reacting to a decade of change in less than a year.** Successful organizations will respond innovatively to the resulting challenges and opportunities.

To create informed projections about these and other issues, our team has conducted a structured, iterative group forecasting exercise. Our forecasting methodology is outlined at the end of this paper.

I. The pandemic has accelerated technology adoption

The pandemic suddenly increased our dependence on internet technology, as social distancing required working from home, and as stores, schools and other institutions abruptly closed. In an instant, remote access became necessary for working, shopping, learning and accessing healthcare. Fortunately, internet-based versions of all of these activities already existed, enabling these activities and interactions to continue virtually.
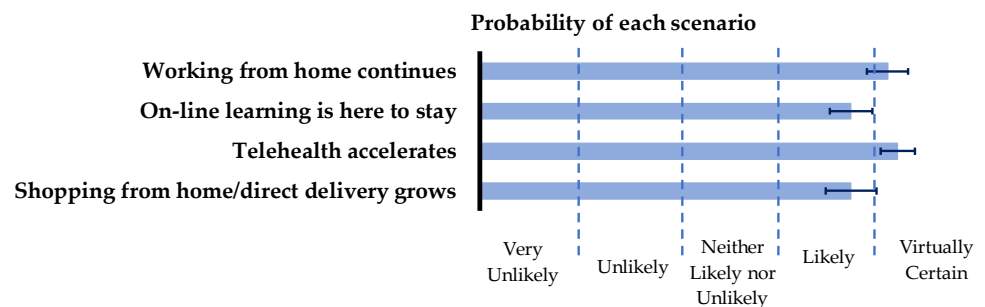
Our panel was strongly aligned that on-line communication will remain common after the pandemic comes under control. In part this may be because of on-going threats of contracting the virus, but it also reflects the fact that many people have learned to use remote communications effectively and have found that they offer significant benefits.

On-line communication has surged during the pandemic.

New habits will continue after the pandemic subsides.

Working from home provides a quantifiable example. US Census data indicates that 7% of workers were working from home in 1997, and this grew slowly to 9.4% by 2010, the most recent year available [1]. This gradual growth was replaced with a sharp increase due to COVID -19. Forbes estimates that 30 – 50% of workers are working from home during the pandemic [2]. This is a significant portion, considering that many jobs do not lend themselves to working remotely.

While working from home may moderate once the pandemic ebbs and people feel safe returning to physical workspaces (and once their children are able to return to school), our panel concluded that working from home will be much more common than before the pandemic. A survey by PWC confirms this, finding that among executives and office workers, 27% reported working from home 3 or more days a week before the pandemic. After the pandemic, 58% expect to continue working from home at least 3 days a week [3].

Probability of each scenario

Working from home continues	
On-line learning is here to stay	
Telehealth accelerates	
Shopping from home/direct delivery grows	

Very Unlikely — Unlikely — Neither Likely nor Unlikely — Likely — Virtually Certain

Implications:

The internet is now integral to almost all forms of interaction, including in areas that were slow to adopt in the past, such as many physical retailers, some employers and universities, and most significantly, health care. Providers in all of these areas will need to quickly adapt to a more connected world.

These trends are synergistic and self reinforcing. For example, students accustomed to distance learning will expect employers to provide remote work options. People working from home will expect to be able to shop from home. Flexible and innovative organizations will adapt to and take advantage of these trends.

These shifts in how we use technology give rise to many interesting possibilities. Here are just a few:

- Companies will collaborate with their employees to develop workable policies and practices to make working from home (or from anywhere) as effective as possible for both parties. Managers will focus more on results, and less on time in an office. "Working nine to five" further loses relevance.
- College students can take courses from anywhere in the world. If the University of Nairobi offers a highly-rated course on sustainable agriculture, why wouldn't a student in the US or Australia take it? This will compel universities to rethink how they count credits, and will increase interest in sites that provide reliable ratings of courses and instructors. Courses will compete, and learning will improve.
- Health care payors may be motivated to encourage telemedicine in many instances to lower costs and improve responsiveness. Smart phones and other devices will be able to monitor many conditions from homes. Electrocardiogram devices that can be used at home are already available for around $100. The results can be sent electronically to a cardiologist for evaluation, and that cardiologist can be anywhere in the world. The result is more convenience, increased health care capacity, and lower cost. Rules for reimbursement will have to keep up with these changes.
- Successful on-line retailers will do everything they can to remove friction from the experience, such as easy, fast returns, free shipping, and rapid replacement of items if the wrong one is ordered initially. Retailers like Amazon and Walmart are already leading the way, but others will have to follow and innovations will continue.

While many institutions will see changes like these as threats to their normal operations, innovative organizations will view them as opportunities to better serve their employees and customers. And ultimately consumers will win.
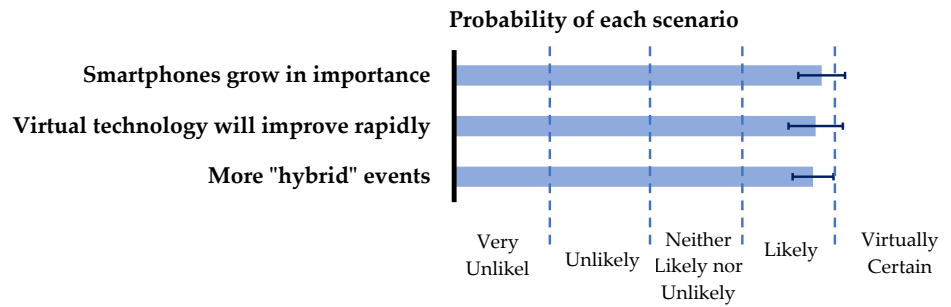
2. *These technology trends will fundamentally change how we communicate*

Our panel was strongly aligned that the four accelerated technology trends above will transform how we communicate. Specifically,

- Smartphones will become an even more important platform for communication and daily activities, including on-line learning and telemedicine.

- Virtual technology will improve rapidly, and will be a major focus of innovation and startups. For example, rapid improvement in the virtual conferencing experience is likely and is already happening.
- "Hybrid" events will be typical, in which in-person and virtual attendance are seamlessly integrated. Most meetings, conferences and other events will provide a virtual option, with many of the features of in person participation translated into virtual equivalents.

"Hybrid" events will seamlessly combine in-person and virtual participation.

Probability of each scenario

Smartphones grow in importance	
Virtual technology will improve rapidly	
More "hybrid" events	

Very Unlikel   Unlikely   Neither Likely nor Unlikely   Likely   Virtually Certain

Implications:

As with the four major trends, winning organizations will adapt quickly to this environment of greater technology-enabled communication.

Specific challenges that organizations can begin to tackle now include:
a. Monitor how changes in communication methods are changing your industry. What new business models are emerging from startups and companies in related industries?
b. Talk with employees and customers to understand how technology trends are changing their daily lives. Survey employees, students and customers to better understand both their technological capabilities, access and tools, and the challenges they are encountering.
c. Some companies report experiencing a loss in creativity because of fewer spontaneous interactions and reduced opportunities for team problem solving. How can better on-line colloboration, combined with some level of physical in-office attendance (e.g. employees expected to choose one or two days a week to be in the office) help to restore innovation?
d. Redesign business models to capture opportunities and counter threats created by the transformation in how people communicate. In particular, organizations need to think differently about geography.

3. Increased internet-based communication raises issues related to equal access to broadband connectivity

As internet access becomes increasingly essential for learning, work, and daily life, access and capabilities becomes more important. Even in the US, current
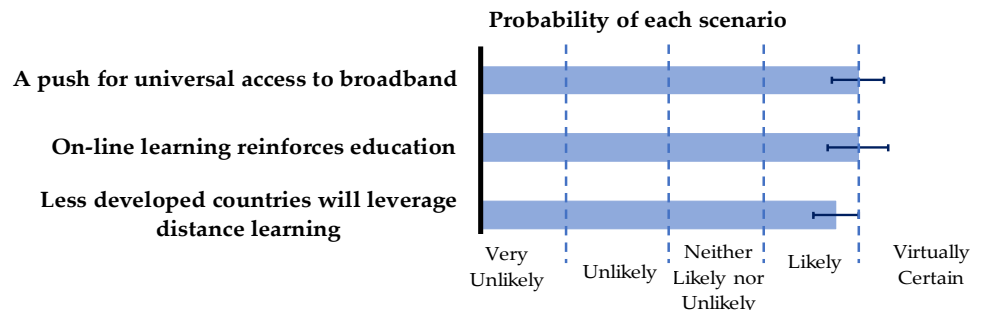
broadband access is limited in many rural and low income communities, putting them at a disadvantage. For example, during the pandemic many K-12 students have fallen months behind where they should be, especially in math. This has especially affected lower income and minority students, who often have limited access to broad-band internet.

In less developed countries, the situation is more dire. It is estimated that only 47% of the world's population has internet access, and in sub-Saharan Africa this figure is only 24% [4].

This puts billions of people at a huge disadvantage as more and more resources become available online. In addition, internet-based communication has the potential to help to address major social issues, including access to education, employment, and health care. In the future, access to high-speed internet is likely to be considered a human right along with the right to water and primary education. And the knowledge and skills to use this technology effectively will be key in any educational and training curriculum.

Our panel of experts concur that there will be significant pressure to address inequality in high-speed internet access, both from the people directly affected, and also by others who see opportunity in more people having access. Ensuring access has at least three major components: Access to broadband internet, access to necessary hardware such as a smart phone, and education to understand how to use the technology effectively.

Probability of each scenario

A push for universal access to broadband

On-line learning reinforces education

Less developed countries will leverage distance learning

| Very Unlikely | Unlikely | Neither Likely nor Unlikely | Likely | Virtually Certain |

Implications:

Our panel anticipates that policymakers will work to address inequities in high-speed internet access, both in the US and globally. Less developed countries will see broadband access as a major enabler of development for individuals and communities.

This trend creates a virtuous cycle: as work, learning, health care and shopping move increasingly on-line, pressure to increase access to the internet will grow. And as more and more of the world's population gains high-speed on-line access, more and more activity will be supported on-line.

Internet access as a human right.

Universal broadband has the potential to accelerate development and growth, independent of physical infrastructure.

This trend is further enabled by the renewed growth of satellite-based internet access. As one example, Starlink (an initiative of SpaceX) expects to provide high-speed broadband access to most of the globe by 2021, "unbounded by ground infrastructure limitations."

Increased broadband access combined with internet-based business models creates significant potential upside for less-developed parts of the world:

- Just as Africa and other less developed areas "leapfrogged" over ground-based telecommunications technology by moving directly to wireless communication, there is potential to leapfrog over traditional business models in other areas.
- Traditional place-based business models that are reliant on physical infrastructure may be less relevant or ripe for reinvention. Retail, higher education, health care, financial services and other commercial activities that grew via a physical real estate model in developed countries can be largely virtual in less developed countries.
- This gives less developed countries the opportunity to quickly establish capacity with less investment in real estate and people.

These promising trends are far from guaranteed, but the limiting factor is no longer technology and does not appear to be the willingness of consumers to do business virtually. The biggest gating factor will be the ability of organizations to innovate in ways that leverage the opportunities the pandemic has revealed.

Successful companies and organizations will be those that see these trends as opportunities to reach more customers in new ways, adapt their business models to facilitate on-line interaction, change communication methods and collaborate with stakeholders to understand their needs and concerns.

Sources

1. US Census Bureau data on working from home, https://www.census.gov/programs-surveys/sis/resources/visualizations/homebased-workers.html
2. (Forbes, April 10, 2020, https://www.forbes.com/sites/nextavenue/2020/04/10/is-working-from-home-the-future-of-work/#a0eee6346b1f)
3. Survey by PWC, June 25, 2020, https://www.pwc.com/us/remotework?WT.mc_id=CT3-PL300-DM1-TR1-LS2-ND30-PR2-CN_FFGFY21-remotework&gclid=EAIaIQobChMIzsy_iZD_6gIVDtbACh0-pAi_EAAYASAAEgJ_z_D_BwE

4. GSMA 2019, https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/07/Mobile-Internet-Connectivity-SSA-Factsheet.pdf

Methodology

To develop perspectives on the post-pandemic environment, our research and consulting divisions conducted an extensive scenario planning effort based on the Delphi method. In total, a panel of 27 senior leaders independently assessed and rated over 130 discrete future scenarios and assigned probabilities to each.

Our panel was constructed to represent a diverse cross-section of organizations, including senior leaders in business, education, the non-profit sector, health care, finance and government. The result is a rich database, consisting of over 7,000 data points, providing insights into the future we will all face together after the Covid pandemic is resolved.

About the Authors

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About Opus Faveo

Opus Faveo Innovation Development is an innovation strategy and venture development firm. Through its Institutional and Corporate Innovation strategy practice, the firm provides actionable solutions to leadership in academia, government and the private sector, increasing innovation impact through stakeholder engagement, rigorous analysis, and effective communication and outreach programs.