THE CONFERENCE BOARD

UNIVERSITY OF CAMBRIDGE

The Impact of the Pandemic on Digital Transformation

Insights for What's Ahead

One lesson companies say they have learned from the COVID-19 pandemic is the need for a more agile approach to strategic planning; one that integrates both their business and technology strategy, and that leverages data-driven models and scenario analysis. During the pandemic, companies with well-prepared digital platforms shifted seamlessly to remote work.

Our previous research, based on interviews with executives from 14 companies across the US and Europe, was conducted prior to the outbreak, and is summarized in the report *Realizing the Full Potential of Digital Transformation*. Its aim was to help businesses efficiently and effectively adopt digital technologies to achieve superior outcomes in the digital transformation. Now, a year later, we reinterviewed executives from six of these 14 companies to see how the COVID-19 pandemic had affected their digital transformation process and what lessons they had learned.

They provided the following insights:

- **Culture is more challenging than technology.** Companies are finding that maintaining and adapting corporate culture during the pandemic-induced rise in remote work is an even greater challenge than getting the technology right.
- **The pandemic has given rise to a more agile planning process.** Companies have realized that strategy is as much about what an organization stops doing as what it starts to do. As they ceased activities they once thought essential but now understand to be optional, they learned how to achieve a new level of excellence in strategic planning.
- **Quality matters in the long term.** As enterprises move into a new steady state, it is important to understand which changes will likely be permanent and to rationalize short-term fixes. Redundant services should be weeded out. The normal procurement process should be followed to ensure that services are obtained from qualified vendors under cost-effective contracts. Any security and privacy "shortcuts" must be eliminated. It would be worthwhile to commission a security audit of the resulting environment.
- **Prepare for the next disruption.** Enterprises should ensure that their new environment has the flexibility and agility to react to future shocks. Companies that had well-prepared digital platforms found it much easier to react appropriately to the pandemic. Now is the time for all enterprises to achieve at least a basic level of digital proficiency to be better prepared for future disruptions.
- **Make supply chains more agile.** Supply chains are now being reexamined—both the physical movement of goods and materials, and the digital systems managing

these flows, as companies realize that a heavily optimized supply chain often lacks the ability to substitute alternate sources of supply. More agility needs to be built in, and human insight must be introduced into systems that are fully automated today.

- **Cut out the middleman to get closer to customers.** The pandemic is also accelerating the need for a more integrated flow of data and information between product design and customers to enable the effective development of new products and services. Due to significant supply chain disruptions, firms are realizing that relying on third-party distribution channels risks giving them only limited or outdated customer insights, and they need to have a more direct connection to their customers to better understand shifting demand patterns.

Focus of this report

Our earlier research was completed before the onset of the COVID-19 pandemic. As it has become apparent that digital technologies played a prominent role in the world's ability to cope with the outbreak, we wondered how the pandemic had affected the companies we had interviewed, and how well they had fared. We therefore met virtually with six of our previous interviewees to explore these issues. This report summarizes the conclusions we drew from these conversations.

Our Perspective on the Pandemic

The global response to the pandemic leveraged many digital technologies and digitally transformed enterprises

The world was fortunate that digital technologies were in place to provide alternatives for work, shopping, and education, which has allowed households, businesses, and governments to survive. Offices were almost universally shuttered, but work continued, supported by digital tools. Virtual meetings proliferated, and Zoom became a household word. E-commerce grew exponentially, and demographics that had been deemed technophobic rapidly learned to shop online. Schools closed, but the delivery of education continued virtually.

None of this was easy or straightforward, but the requisite technologies were in place, and humans adapted. Trends that were under way when the pandemic started, such as remote work, e-commerce, and remote instruction, accelerated greatly, and these new modalities will all be important in the postpandemic future. Remote work, in particular, generated numerous challenges, and we explored these with our interviewees.

However, one type of digital technology complicated the response to the pandemic

Heavily optimized supply chains, which are based on customer centricity and large-scale data analytics, took time to adjust, leading to temporary bottlenecks and price spikes in food and other items. The problem was that there were sudden, massive shifts in consumer demand. Prior to the pandemic, food was consumed at home, in restaurants, and in schools. Consumption patterns had been very stable, and the food supply chain was optimized for those patterns. While schools and restaurants closed overnight, the same number of people

needed to eat. They sought food, paper goods, etc. in their local supermarkets and shops. Shortages developed, and some panic buying made it worse. As the new consumption patterns were understood, the supply chain readjusted. Data analytics kicked in, and new patterns began to drive supply chains.

The more general supply chain problem was caused by disruptions in China and other geographies as a result of the shutdowns. Many companies learned that a heavily optimized supply chain often lacked the agility to substitute alternate sources of supply. Moreover, there were often logistical challenges, as was the case with personal protective equipment (PPE) and ventilators, where even when products were available they were in the wrong places. Supply chains are now being reexamined—both the physical movement of goods and materials, and the digital systems managing these flows. More agility must be built in, and human insight must be introduced into the systems that are fully automated today.

Lessons from Our Research Interviewees

With this as background, let's examine what we learned from our interviewees.

Companies with well-prepared digital platforms shifted seamlessly to remote work

Two of our interviewees reported that they had completed rollouts of Microsoft Teams as their integrated collaboration environment shortly before the pandemic began. They were therefore able to support a remote workforce very quickly without the need for any immediate technology implementations. While this was clearly a stroke of good luck, as the Roman philosopher Seneca said, "Luck is what happens when preparation meets opportunity." A conscious decision had been made to provide a more digital work environment for efficiency and flexibility, and these companies were able to reap the benefits. The other interviewees all had substantial digital infrastructures, including cloud-based computing, secure remote access to information systems, and technical support for digital platforms.

Beyond our six interviewees, we heard similar stories from other Members of The Conference Board. For example, a global professional services firm had the necessary infrastructure, but not enough laptops for all their newly remote workers. Yet the CIO was foresighted enough in January to order hundreds of laptops to immediately supply to the company's workforce the day the work-at-home decision was made.

Providing the necessary technology was just the first step. Training, security, and support issues quickly arose. Again, companies that were already implementing digital technology had the necessary people and processes in place to deal with these issues. They were not slowed down or impaired by the need to acquire or develop these important capabilities.

The pandemic encouraged/forced companies to adopt a sharper strategic focus

We heard this universally from our interviewees and many other Members of The Conference Board. Everyone was in crisis mode; no one knew how their business would be

impacted. So it was critical to ensure that all firm activities and expenses were targeted to ensure their company's survival and ability to thrive beyond the pandemic. "Sacred cows" were put aside, and strategies were pared down to what really mattered.

All of the interviewees also viewed the adoption of a sharper strategic focus as a permanent change. As companies discontinued activities they once thought essential but now understood to be optional, they learned how to achieve a new level of excellence in strategic planning.

Many companies rethought their supply chain investments, either reducing their level of investment or refocusing investments to increase agility

Some examples of this were decisions about supply chain Enterprise Resource Planning (ERP) systems. Some companies deferred projects to improve their ERP systems in favor of more investment in customer-facing systems. Others ramped up their ERP investments, as the pandemic exposed critical shortcomings in their current systems. These decisions were not easy. One Member of The Conference Board, the CIO of a health care system, reported that the pandemic hit in the middle of a major patient medical information system rollout (for hospitals, this is the equivalent of a supply chain system). While resources were stretched to support the IT in their hospitals, the new system would dramatically improve their ability to manage their patients' health information. The implementation had been meticulously planned, so they decided to proceed, and the system was smoothly installed and activated.

Companies worked hard to maintain their company culture, which was much more difficult than the technological challenges

It is a truism that culture trumps technology. The companies we spoke with all understood that an abrupt and sustained shift from office-based work to remote work has enormous cultural implications. Successful companies develop cultures that define their identities and guide workers as they strive to achieve the company's mission and objectives. These cultures are instilled and reinforced in a multitude of ways, both overt and subtle, mostly via interpersonal contact. These "teaching moments" are unpredictable and ad hoc, and prepandemic, were centered in the office or on the road as teams traveled together. Transferring company culture to the world of virtual meetings is difficult, and companies are just beginning to learn how to do it. Another critical question organizations need to ask is whether the culture they had and wanted to preserve is the culture they will need or want going forward.

This is especially important regarding the assimilation of new hires—recent college graduates in particular. People enter the workforce from school with talent and skills, but little work experience. They learn how to work effectively in a company by observing what others do. A good deal of mentoring is involved—mostly informal. Experienced hires from other companies face the same difficulties in learning the new company's culture, norms, and expectations.

Our interviewees shared the following practices they employed to solve these problems:

1. "Home office talks": informal presentations or virtual poster sessions proved very effective

2. Borrowing from the software industry, holding virtual events to promote the rapid development of solutions (e.g., global hackathons) was encouraged to increase collaboration across geographies; this generated some important insights
3. Coaching on effective meetings via better, more appropriate use of video and chat

On the positive side, these companies all saw a more global collaboration quickly develop, and benefited from the geographic flexibility afforded by remote work. These were all pandemic responses, but the companies are already strategizing about how to incorporate these positives into their organizations in the long term postpandemic.

Another key issue is how to stay close/get closer to the ultimate customer in a remote environment

Firms that normally interact with customers in a physical environment had to be innovative in using digital technologies to reach their customers online. For example, a large European personal care company had to learn how to deal with customers at home rather than at retail stores, and overcome the challenge of helping customers try out colors and fragrances among its beauty products. The firm accelerated its investment in “virtual tryouts,” allowing customers to apply beauty products digitally. In addition, online consultations became popular in providing customers with real-time advice while they try out new products at home, such as mixing hair dyes. Moreover, influencers and medical skin-care practitioners needed better access to customers. The firm promoted its Edutainment offering where, through an online platform, customers were not only entertained, but also educated about how to combine beauty or health products and use them effectively. This not only provided entertainment for the company’s at-home customers, but also contributed to increasing product orders for the firm.

Due to significant supply-chain disruptions, firms also realized that they needed to be closer to their customers to better understand demand patterns. A US-based multinational conglomerate had long-standing partnerships with its distribution channels, which prevented it from having direct access to customers. This gave it less insight into its customers and whether their product purchases were for stock purposes or immediate use. Hence, the firm needed to become more like Amazon, where there is a direct link between the customer and the supply chain. Often the distribution channel is unable to provide such customer insights, so suppliers are trying to connect more directly with their customers using digital technologies.

The pandemic is also accelerating the need for a more integrated flow of data and information between product design and customers to enable more effective development of new products and services. A major US semiconductor company we interviewed maintains that when it has a direct connection to its customers, its data are much improved, and this not only helps with production planning, but also product design. Often data that are relevant to the design and engineering teams—for example, information about parts and how they are tested—are provided to the end user by third-party data syndication services. This information might not be accurate, as it often lacks correct information about the equipment provider. Therefore, firms are moving toward a more direct connection to their customers, putting the need for such data syndication service providers in question going forward. Direct connection with customers improves the data flow to the firm’s engineering design teams,

which enables them to develop the right products, and to help customers use them. This eliminates quality issues in their prototypes and ultimately their final products.

Implications for Firms

The main conclusion we drew from our follow-up research is that companies that were digital leaders performed better in managing the pandemic. They reacted faster and more effectively. They are also already adjusting their longer-term strategies to succeed in the post-pandemic "new normal."

Here are three other important takeaways for our readers:

1. Understand which pandemic-related company changes will be permanent.

The interviewees all stated that the most important, lasting change was their sharper strategic focus. Companies learned that strategy is as much about what they stop doing as what new things they do. They believed that this new strategic planning process would continue beyond the pandemic.

The role of office work has been redefined, and the new flexibility will be a long-lasting asset. That is not to say that office work will disappear. Rather, there will be a deliberate and thoughtful examination of what work requires teams to be together in person and what activities can be effectively done remotely. In other words, there will be a thoughtful mapping of the workforce to the workplace.

Both the midyear ***C-Suite Challenge™*** survey and the regular annual survey support these findings. CEOs and other C-suite executives think that the acceleration of digital transformation, business model innovation, and remote work are going to be legacies of the pandemic.

Finally, a key change will be the new approaches to customer centricity. The interviewees stated that there has been a general move toward more direct connection to the customer to better understand purchase and use decisions. This has implications in terms of how distribution channels are managed, as well as how customer-centric information will be used for new product development.

2. Rationalize your ad hoc responses into a secure and agile business and technology architecture.

All enterprises had to quickly adjust to the pandemic. Equipment had to be procured to allow employees to work at home. Secure remote access had to be arranged. Teleconferencing, via Zoom or its competitors, had to be contracted. Paper files were digitized. Collaboration tools were implemented. All of this was accomplished at speed, to ensure that businesses continued to operate, without consideration of the long-term consequences.

Some of these solutions are sustainable for the longer term, but many are not. Most are more costly than necessary. So the first priority for enterprises as they move into a new steady state is to rationalize short-term fixes. Redundant services should be weeded out.

The normal procurement process should be followed to ensure that services are obtained from qualified vendors under cost-effective contracts. Any security and privacy "short cuts" must be eliminated. It would be worthwhile to commission a security audit of the resulting environment.

Finally, enterprises should ensure that their new environment has the flexibility and agility to react to future shocks. We learned from our interviewees that companies with well-prepared digital platforms found it much easier to react appropriately to the pandemic. Now is the time for all enterprises to achieve at least a basic level of digital proficiency.

3. Develop a more agile strategic planning process that integrates business and digital strategies.

COVID-19 has taught us that the world is moving faster than ever. Businesses across industries adapted quickly, which changed the competitive landscape. More importantly, businesses learned that they *could* move much faster than they had thought possible. Hence, both strategic plans and the strategic planning process must become far more agile. Pre-pandemic, companies typically employed a layered strategic planning process. "Long-term" strategy—usually spanning a three- to five-year horizon—was a major exercise, taking many months to produce a complex plan requiring approval from the board of directors. The annual planning process was also elaborate, and translated the strategy into annual chunks that balance strategic and financial objectives. There were also midyear strategy reviews, either periodic (e.g., quarterly) or ad hoc, based upon the circumstances.

"It's the Strategy, Stupid!"

The pandemic has rendered many of these strategies worthless because of the fundamental shifts in the economy and workforce. A new, static strategy is not likely to be very effective for very long, given the accelerating changes in the business environment, so developing a new strategy according to the old, slow, and methodical planning process is not the answer.

One of our key findings is that enterprises learned very quickly that their prior assumptions about what they needed to do were incorrect—they found many activities that did not add sufficient (or even any) value and could be terminated with little negative impact. In other words, ***the criteria by which alternate strategies were evaluated must be reconsidered***. Strategy is all about focus.

We also learned that strategy development must be much faster and more flexible. This can be achieved on two levels:

1. **The strategy must have built-in agility.** For example, in the prepandemic world, companies optimized their global supply chains. These supply chains were amazingly efficient, but could not readily adapt to discontinuities in supply as parts of the world shut down. As supply chains are rebuilt, they must provide for alternative sources and providers by appropriately balancing efficiency and resilience. In addition, as firms find new ways to enhance their customer-centricity, they need to get closer to the customer by removing intermediaries, and then feed these insights

into the supply chain planning process. The benefits are better demand and supply management as well as more effective new product development. Firms must be ready to innovate their business models to reflect these overarching changes to the industry architecture.

Building agility into the strategy and business model design calls for an enterprise's business strategy to be fully integrated with its digital strategy. At the least, firms must ensure that the new digital platforms that are developed to cope with the pandemic are consistent with their business strategy. See our earlier report, *Realizing the Full Potential of Digital Transformation* for a description of why this is critical, and for examples of how to do it.

2. **The planning process itself must be more agile.** It is counterproductive for ad hoc, emergency decisions to be made completely outside of the current strategic plan. It would be far better if the plan itself could be quickly adapted to the new market conditions. Firms need to strike the right balance to enable strategy to be *planned* yet flexible enough to *evolve* in a rapidly changing environment.

What are the basic approaches and tools for such an agile strategic planning process? We believe the following components are fundamental:

- The plan must be described in terms of assumptions, drivers, decision points, and outcomes, all linked together in a logical model.
- To be understandable and usable by management, the model should incorporate "scenario analysis"—substantial examples that illustrate how the assumptions, drivers, and decisions will yield the various outcomes.
- There should be a library of potential scenarios that can be used to "stress test" proposed strategies.
- Finally, and perhaps most importantly, the models and scenarios must be expressed in terms of the underlying data. This will allow the powerful use of data science and data analytics to run and evaluate the models. The data should include, as appropriate, global, regional, and local economic data, customer data, and workforce data, as well as company-specific data. The goal is to continually scan the data and run the models to understand if the core assumptions of the strategic plan are still accurate, and if not, what the deviations portend.

Note that many such industry-specific models exist—industry analysts at the major brokerages and investment banks have used them for decades, as well as many leading enterprises. The Conference Board also maintains large economic databases ("Data Central"), available to its Members, that can be incorporated into these models. The new digital opportunity is to incorporate such models into real-time or near real-time dashboards that interact directly with the strategic plans.

Concluding Thoughts

Every crisis generates challenges and opportunities. The COVID-19 pandemic is one of the greatest health and economic crises we have faced in many decades, and the challenges

and opportunities are correspondingly great. Businesses have the opportunity to redefine and reinvent themselves in order to succeed in the postpandemic world. This paper has explored many of these issues in the specific context of digital technologies and digital transformation, offered a number of lessons learned, and recommended concrete actions for enterprises. There is indeed an opportunity for a better postpandemic world.

Background

Our previous research, summarized in the report *Realizing the Full Potential of Digital Transformation*, aimed to help businesses efficiently and effectively adopt digital technologies to achieve superior outcomes from digital transformation. Toward that end, we interviewed executives from 14 companies across the US and Europe. Our interviewees held diverse job titles, including chief digital officer, chief IT officer, and R&D director, reflecting the reality that digital transformation occurs across a multitude of functions. The 14 companies cover 10 industries, providing a vantage point into common success factors across industries.

We gained the following top three insights:

1. Digital transformation must be integrated within the business strategy. From the companies we interviewed, it was clear that those with a digital strategy closely derived from the overarching corporate or business unit strategy saw superior results from their digital transformations. Effectively, these companies were not "going digital" merely for the sake of "going digital." Rather, they were implementing digital technologies as part of their overall business strategy.
2. Digital transformation is most impactful when it leads to business model innovation, fully leveraging the opportunities the new digital economy introduces. New digital technologies can help firms realize revenue growth, market share gains, and operational efficiencies through tactical improvements such as upgrading the customer experience by offering new digital channels. However, they can be more powerfully leveraged to create entirely new business models. For example, a leading US publishing company digitizes its textbooks and develops different subscription models for students, professors, and institutions, allowing for innovative product bundles, deeper collaboration with professors and students in product development, and new profit channels.
3. Measuring and managing digital transformation requires a multifaceted approach. Most companies do not measure digital transformation because they lack a comprehensive way of doing so. We present a multifaceted measurement system that comprises 1) *inputs*, to gauge digital transformation readiness; 2) *throughputs*, to evolve the business model and take stock of digital transformation initiatives; and 3) *outputs*, to measure business results. By not measuring digital transformation, firms risk being in the dark regarding their readiness for and returns on digital investments.

We also found five Digital Transformation practices that work:

1. Customer centricity
2. Agility
3. Utilizing cross-functional teams
4. Leveraging external partnerships
5. Data proficiency

About the Authors

Charles Popper is a Program Director and Senior Fellow in the Innovation and Digital Transformation Institute at The Conference Board. In addition, he is a Founding Partner of TechPar Group (TPG), a strategic technology consultancy that has delivered services to 350 technology investor, vendor, and enterprise clients.

Prior to founding TPG, Popper served as vice chairman and chief technologist for Orama Partners, a boutique high-tech investment bank. Previously, he was global CIO at Merck, where he transformed the IT base and introduced formal IT governance and product/service management processes for Merck IT. Before working at Merck, Popper was a partner in the management consulting practice at Deloitte & Touche. Other roles include working as a mathematician for NSA; research scientist at Bell Laboratories, where he was recognized for leadership in the application of microprocessors and designed the first Bell Labs 8-bit microprocessor chip architecture; and leader of advanced technology (IT Innovation) for American Express (designed its image-based card-member billing system) and Lehman Brothers Kuhn Loeb (introduced Unix technology).

Popper received a BA and PhD from Harvard in applied mathematics and computer science.

Chander Velu is a Senior Fellow at The Conference Board and an Associate Professor at the Institute for Manufacturing (IfM) at the Department of Engineering, University of Cambridge, where he heads the Business Model Innovation Research Group. Chander has an interest in innovation and technology management with a specific focus on studying the implications of business model innovation. He holds an Engineering and Physical Sciences Research Council (EPSRC) Fellowship to study the implications of business model innovation on productivity following the adoption of digital technologies. Prior to joining the IfM, he was a member of the faculty at Cambridge Judge Business School. Chander has worked as a consultant with PricewaterhouseCoopers and Booz Allen & Hamilton in London.

THE CONFERENCE BOARD is a member-driven think tank that delivers trusted insights for what's ahead. Founded in 1916, we are a non-partisan, not-for-profit entity holding 501(c)(3) tax-exempt status in the United States.

Economy, Strategy & Finance Center

Innovation and Digital Transformation Institute

THE CONFERENCE BOARD, INC. | www.conferenceboard.org
AMERICAS | +1 212 759 0900 | customer.service@conferenceboard.org
ASIA | +65 6325 3121 | service.ap@conferenceboard.org
EUROPE, MIDDLE EAST, AFRICA | +32 2 675 54 05 | brussels@conferenceboard.org
COMMITTEE FOR ECONOMIC DEVELOPMENT
OF THE CONFERENCE BOARD | +1 202 469 7286 | www.ced.org
THE CONFERENCE BOARD OF CANADA | +1 613 526 3280 | www.conferenceboard.ca