

MANAGING ORGANIZATIONS IN A TIME OF CRISIS

Crisis and the Direction of Innovation

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Key Takeaways: The coronavirus pandemic has slowed the worldwide economy and imposed significant market frictions that may hinder future innovation. However, previous crises have shown that such black swan events can serve as a catalyst for some forms of invention and alter the direction of future innovation.

Innovation in a Time of Crisis

The coronavirus and the accompanying shelter-in-place orders have disrupted daily life across the globe and imposed significant turmoil on the worldwide economy. These disruptions are likely to have lasting effects on innovation in the United States and across the world. The closure of [R&D labs](#) and [research facilities](#) in the midst of the pandemic has implications for the pace of scientific discovery and may limit the ability of inventors to innovate and bring new products or services to market in the coming years. Economists have argued that innovation can be linked to market demand (Cohen, 2010; Schmookler, 1966), and the decline in demand across industries is likely to lower firms' ability and propensity to innovate. Research also suggests that market frictions can lead to an underinvestment in innovation by hindering the flow of information in the "market for ideas" (Chatterji & Fabrizio, 2016; Hegde & Luo, 2017). The added frictions in the marketplace may result in less innovation in the aggregate in the coming years.

However, in the midst of this disruption and economic downturn, pandemics and other *force majeure* events have historically also served as catalysts for innovation and economic progress. For example, while the economic crisis in 2008 reduced the short-term willingness of firms to invest in innovation, it led to a concentration of innovative activity among fast growing new firms pursuing exploratory strategies related to new product and market developments (Archibugi, Filippetti, & Frenz, 2013). In response to such events, novel business models and inventions that are relevant to the moment may disproportionately gain steam, and firms and industries innovate to adapt to externally induced threats or challenges.

For example, following the Three Mile Island nuclear power plant accident, energy firms were forced to innovate to meet heightened regulatory standards (Marcus, 1988), and the rise of fracking and US oil independence was [largely motivated as a response to the 1970s oil embargo](#). Similarly, wars and the accompanying increase in war-related expenditures can shift the trajectory of R&D spending towards defense-related technologies and industries (Moretti, Steinwender, & Van Reenen, 2019). By affecting the lifestyles and trajectories of individual inventors, crises can also have lasting impacts on the direction and magnitude of future innovation. Moser, Voena, & Waldinger (2014) show that the sudden rise of Nazi Germany and the resulting increase in Jewish emigres led to an increase in U.S. invention by attracting more domestic inventors to the research fields of emigres.

A similar process may play out with current events. Indeed, initial data suggest that some industries have seen increases in demand and consumer spending despite the economic slowdown. These recent changes in consumption behavior may provide a glimpse of where future opportunities lie. Figure 1 below uses data from the U.S. Census Bureau to show how retail spending changed from February to March 2020. [While overall retail spending fell by 8.4%](#), some industries saw increases in spending. Among the industries experiencing sudden growth in the face of this crisis [are digital services offering restaurant and grocery delivery](#). Similarly, companies offering services for teleworking, such as Zoom and Slack have seen [large increases in value despite the stock market decline](#), as individuals have shifted to working from home *en masse*.

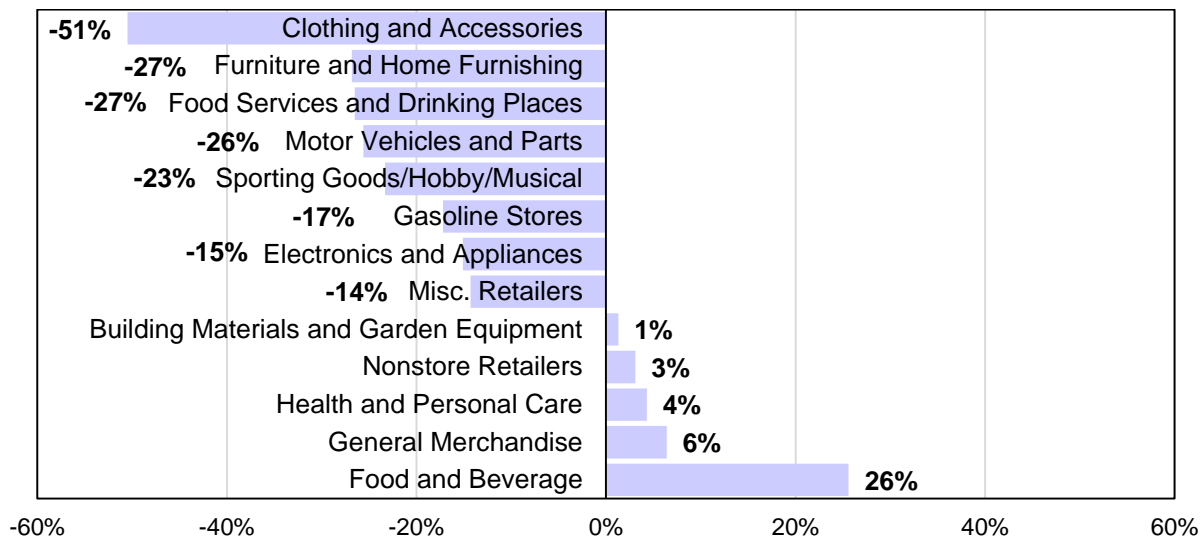


Figure 1: Percent Change in Retail Spending, February to March 2020 (Source: Census)

In addition to telework and food delivery, others have noted that the virus may also spur growth and investment in [telemedicine and remote learning](#), [e-commerce](#), and [artificial intelligence](#). Technological advancements made in these directly affected areas may also have applications in other settings and create spillovers that affect the economy as a whole.

Implications for Managers

The changes discussed above and the new opportunities created through this black swan event have meaningful implications for managers and policymakers. Policymakers should continue to prioritize policies that remove roadblocks for innovative solutions to the unique problems posed by the virus, such as [regulatory flexibility for biotech and pharmaceutical development](#).

Managers should be aware of potential changes in consumption patterns. The pandemic may serve as the impetus for adoption of many such technologies and accelerate innovation and product development in certain fields. Firms that are able to take advantage of such opportunities may be able to establish themselves as leaders in a novel and rapidly growing space. In addition, firms that are best able to adopt and adapt to such novel technologies may be better prepared for the future by increasingly embracing the digital economy.

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