

KENAN INSIGHTS

Innovation in a Time of Crisis: Entrepreneurs' Response to COVID-19

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Rising to a grand challenge

As COVID-19 began its march around the globe, the seriousness of the crisis quickly became clear. As healthcare needs intensified, innovators around the world began ramping up efforts to develop vaccines and treatments. At the same time, the economic impact of the virus brought swift and intense changes in supply and demand patterns, creating significant challenges, but also providing new opportunities for innovation and entrepreneurship.

"In response to COVID-19, several public entities defined mission-oriented grand challenges aimed at finding treatments and creating a vaccine for prevention," says Mahka Moeen of Kenan-Flagler Business School at the University of North Carolina-Chapel Hill. A long period of research and experimentation often precedes the first commercialization of new products to the mass market. Moeen's research offers insights on how to quicken the pace of innovation during the pre-commercial stage of new industries.

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Development of a commercialized innovation often requires the involvement of a diverse set of actors, who work to resolve critical technical problems and uncertainties. Defining mission-oriented grand challenges is one way to bring together different actors who have relevant knowledge and expertise, and as such is an important starting trigger for the pre-commercial stage of new industries.¹

"With COVID-19, we're seeing this pre-commercial stage play out as governments, as well as nonprofits like the Gates Foundation, fund and sponsor

¹ Agarwal, R., Moeen, M., & Shah, S. K. (2017). Athena's birth: Triggers, actors, and actions preceding industry inception. *Strategic Entrepreneurship Journal*, 11(3), 287-305. doi:10.1002/sej.1259

KEY TAKEAWAYS

- Finding a cure or vaccine for COVID-19 is an example of a grand challenge that is triggering a broad range of actors to work together to fight the pandemic.
- Collective action can be challenging to achieve when perceived returns are low. Intentional coordination could help, especially given the diversity of actors involved.
- Firms that have relevant expertise or capabilities will be more successful at reorienting to meet new needs and will be able to introduce new products and services quickly.
- When encouraging multiple parties to work together, redundant structures may seem inefficient, but they can help foster integration and collaboration.

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researchers to work on a cure and vaccines,” says Moeen. “Industry and academic scientists are all working toward the same goal, but more importantly, they are sharing knowledge across firm and country boundaries.”

Sharing knowledge can help shorten the industry pre-commercial stage. Moeen points out that such sharing can help overcome the “vast shortcomings in our scientific knowledge about COVID-19 and the complexity of finding a cure or vaccine.” The COVID-19 Therapeutics Accelerator Initiative is an important example of a collaborative effort, within which scientists can learn from each other’s advancements. In addition, to facilitate the knowledge flow, many scientific journals have lifted their paywalls so that new findings can be shared more easily.

Challenges with collective action

Although collective action is critical for fighting COVID-19, it can be challenging to achieve, says UNC Kenan-Flagler Business School researcher Chris Bingham. “It is increasingly unlikely that one organization or entity will have all the knowledge, skill and resources to deal with COVID-19 effectively,” he says. “Thus, collective action is needed. That is, finding a treatment or vaccine for COVID-19 is contingent on others’ contributions and willingness to cooperate.”

But Bingham’s research argues that, although collective action is critical, it is often difficult to achieve because other actors may not perceive their own and others’ contributions as making a difference, may have conflicting goals, may be unfamiliar with or untrusting of other actors, or may withhold contributions on the assumption that others will provide them instead.²

“In situations like COVID-19, perceived financial returns to each organization’s contributions are low, creating what is known as a start-up problem” says Bingham. “This is further compounded by coordination problems arising from the fact that specific kinds of resources are needed, such as specific types of masks or ventilators, so substitutions can’t be readily used to meet needs. Intentional coordination can help overcome these chal-

² Lee, B., Strueben, J., & Bingham, C. B. (2018). Collective action and market formation: An integrative framework. *Strategic Management Journal*, 39(1), 242-266. Retrieved from <https://doi.org/10.1002/smj.2694>.

lenges, especially with the diversity of actors involved.”

Moeen adds that sponsorship by public entities who define and coordinate mission-oriented grand challenges can alleviate some of these concerns, and increase the likelihood of achieving a solution.

Redirecting expertise to meet new needs

COVID-19 has upended supply and demand patterns with remarkable speed. While some industries are booming, such as virtual meeting software, those dependent on in-person interaction and travel are suffering. “This type of situation pushes innovation from businesses that want to hold their new position, as well as from those forced to find ways to stay afloat,” says Moeen.

In a study of what makes firms successful when they enter a new business area or industry, Moeen found that having expertise or capabilities that are relevant and can be modified

to meet the needs of the new industry can give firms an important advantage.³ “For example, if you think historically about when car manufacturing became an industry, companies producing carriages had the expertise, because carriages could be easily modified to make cars,” she explains.

Shortages in products like hand sanitizer, ventilators and personal protective equipment are motivat-

ing companies to reorient to meet the needs for these items. For example, companies that previously made beauty products or alcoholic beverages are using their equipment to switch gears and produce hand sanitizers. “We’re in a period where we want everything to happen very quickly,” says Moeen. “Our research shows that companies with preexisting expertise are more likely to introduce new products in this type of climate.”

Inefficiencies can be effective

Whether it is companies who are trying to use their expertise to meet new needs, or those who must work together because of

³ Moeen, Mahka. 2017. Entry into Nascent Industries: Disentangling a Firm’s Capability Portfolio at the Time of Investment Versus Market Entry. *Strategic Management Journal*, 38(10), 1986-2004 From: <https://onlinelibrary.wiley.com/doi/abs/10.1002/smj.2642>

the Defense Production Act, many new partnerships have been formed in response to COVID-19. For example, car manufacturers are partnering with companies that make ventilators to meet the critical need for these machines.

When trying to get multiple parties to integrate and work synergistically, Bingham's research has shown that inefficiencies can actually be effective.⁴ "Although common wisdom suggests firms should use their resources efficiently to maximize performance, our work suggests that an overemphasis on reducing redundancies leads to lower, not higher, performing solutions," he says.

Redundant and seemingly inefficient structures can actually generate success, including having mirror teams monitor and

⁴ Bingham, C., Heimeriks, K., & Meyer-Doyle, P. (2020). *Integrated Autonomy: Successful Collaboration Post Technology Acquisition*. Manuscript in preparation.

manage the integration process, providing double incentives, and over-communicating goals and progress.

"One reason redundancies help is that individuals are often reluctant to integrate or collaborate with new partners, particularly if the organizations are very different," says Bingham. "Redundant structures, such as double incentives that explicitly reward working together and alone, help promote active collaboration and networking between individuals."

When building new collaborative partnerships, over-communication also helps facilitate integration by ensuring that key employees are fully aware and on board with new plans. Mirror staffing of employees in the integration workstreams further propels progress by fostering the perception of fair process and procedural justice, thus encouraging the commitment of company employees to collaborate.

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