

Briefing Paper

Resuming operations and business activity post-COVID-19

Advanced Manufacturing Action Group

In collaboration with McKinsey

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Introduction

The COVID-19 global crisis continues to disrupt manufacturing and global supply chains with severe consequences for society, businesses, consumers and the global economy.

Recognizing this urgency, the World Economic Forum's Advanced Manufacturing Action Group, which brings together leading voices in the advanced manufacturing space, has been exploring how companies can best navigate the COVID-19 crisis, resume operations and business activity, and prepare for the "new normal". This will be done by identifying use cases and best practices that leverage advanced manufacturing technologies, and by uncovering new collaboration and partnership opportunities to successfully manage the COVID-19 crisis and build resilience.

Through a series of virtual meetings and workshops, The Action Group identified and defined four strategic needs and areas in which companies can work together to better navigate the crisis and prepare for a post-COVID-19 world:

1. **Resume operations** – Best practices and common business protocols related to the restart of operations and safety of employees
2. **Reimagine operations** – Underpinning enablers and use cases of future successful manufacturing facilities and supply systems
3. **Anticipate future needs** – Role of advanced manufacturing technologies in modelling future demand and managing capital and operating expense transparency
4. **Inform strategies** – Recommendations to develop next generation policies and industrial strategies for the "new normal"

This newsletter focuses on the first strategic need – resume operations. It gathers key perspectives on how companies can return to work and resume operations and business activity as early as possible, while ensuring employees' safety and preventing new infections.

Protecting people

For manufacturing companies, protecting people is the foremost priority as they resume operations and business activity.

Companies are implementing safety measures across a full range of work-related activities.¹

These include:

1. **A shift to remote work** – Several manufacturers shifted functions that do not require access to on-site equipment (such as finance, procurement and marketing) to a remote model.
2. **Symptoms assessment** – Businesses have adopted multiple ways to assess early symptoms, e.g. in South Korea several companies demand employees to complete an online health assessment before entering the workplace.
3. **Training and education** – Multiple companies in China and the United States have developed online training modules for employees to familiarize new safety and hygiene protocols before they return to work.
4. **Mental health** – Several companies are supporting employees in taking care of their mental health, providing free subscriptions to meditate on apps, or by offering on-demand video counselling services.
5. **Temperature checks** – An increasing number of facilities in China and the United States implemented temperature checks for employees and customers at the entrance, either through stationary employees equipped with contactless thermometers or automated temperature checks.
6. **Staggered entry and exit** – To avoid crowding, several factories in China are staggering start times for employees, inviting them to arrive in waves. Similarly, medium- size businesses have put limits on the number of people allowed within their facilities.
7. **Enhanced hygiene protocols and protective equipment** – In workplaces where people are required to be in close physical proximity to each other, the focus has been on dramatically enhancing cleaning protocols and enforcing the wearing of personal

protective equipment (PPE). Some companies have installed hand-washing stations in high-traffic areas at their facilities and have upgraded their air-filtration systems.

8. **Workspace redesign** – Many manufacturing plants — where workers are required to stand close together on an assembly line — have installed plexiglass partitions at workstations. They also redesigned workspaces to include barriers between desks, bold circles on the carpets around desks indicating where people can stand, and increased signage.
9. **Clear protocols for infected workers returning to work** – Businesses are defining clear triggers and protocols for handling infections or potential outbreaks. Multiple businesses in the United States have defined return-to-work indicators for employees who have been infected. These include multiple COVID-19 tests with negative results, a positive antibody test, and a two-week period of self-quarantine during which the person shows no symptoms.
10. **Contact tracing** – Whether technology based or manual, contract tracing solutions are essential to ensure safety and be able to react fast in case of new infections or outbreaks.

Technology can play a major role when it comes to protecting people. Some companies are already using camera-aided systems like [Trust AI](#) to identify areas at risk where employees are not maintaining social distance or not wearing PPE. A solution developed by [BLP](#) leverages existing video infrastructure and AI to alert managers about areas where social distancing has been breached. Another solution from [Industry.AI](#) uses a mobile app to send real-time alerts to employees when they breach social distancing measures. This can also be used as a contact tracing tool in case of outbreaks.

Ensuring data privacy is essential when deploying such measures or any other contact-tracing solutions. Companies can take various measures to protect anonymity, such as using Bluetooth over GPS-based solutions to eliminate downloading of personal data.

Companies have also created rule books with guidelines on prevention, distancing, hygiene standards, and the use of PPE. Topics might include the maximum number of people that can gather in a certain place, criteria for working from home, use of packaged food in the cafeteria, or strategies for reducing elevator use.

Defining capacity



Predicting the evolution of future demand and gaining visibility into the supply network is critical as companies try to redefine manufacturing capacity.

Asia shows an early glimpse of how manufacturing and supply-chain leaders are responding to disruption caused by the pandemic.² Demand volatility is causing issues for planning, with many leaders reporting that they are finding it challenging to trigger new orders because they cannot make accurate demand forecasts. To respond to these challenges, industry leaders are taking actions aimed at restarting operations and ramping up production, while considering resource availability and demand fluctuations.

To deal with challenges concerning material shortage, leaders are increasing end-to-end visibility and implementing nerve centres, while also increasing their supplier and logistics bases to mitigate potential long-term risk. Cloud-based solutions can be of help because they provide visibility both in terms of consumer demand and daily capacity of suppliers.

When redesigning supply chains, companies are prioritizing flexibility and agility in order to adapt their capacity to current and future needs. A flexible approach allows them to minimize disruptions across production processes, while agility helps react quickly to unexpected disruptions driven by rapid changes in supply or demand. Companies are also increasing resiliency by shifting from global suppliers to local ones in some instances.

Enhancing workforce capabilities

Workforce capabilities are another critical component when it comes to a safe return to the workplace.

Adapting employees' skills and roles to the post-pandemic ways of working will be crucial to building operational resilience. This means more than just remote working and the benefits that could be brought by adopting automation and AI drive solutions. It is about how companies can best reskill and upskill their workforce to enable new operating and business models in the post-pandemic era. For example, the current crisis has already accelerated the adoption of fully digitized approaches to recreate the [best of in-person learning through live video and social sharing](#).³

Advanced manufacturing technologies and solutions can play a key role to help bring capacity back to pre-COVID-19 levels. However, to be implemented and adopted successfully, technology-based solutions should enhance workers' capabilities and facilitate day-to-day tasks.

For examples, some automotive companies, such as Ford, GM and Tesla, have used augmented reality solutions to rapidly reskill their workers in order to repurpose production lines and start assembling ventilators during the COVID-19 crisis.

Creating a roadmap to ramp up

We expect the post COVID-19 recovery to be different across sectors. Most companies are carefully monitoring indicators in relevant industries as they create a roadmap to ramp up. They are also holding off on major footprint changes and instead adopting a wait-and-see strategy, observing which products will be most on demand and deciding where next to invest.

A central component of a successful ramp-up strategy is the creation of a “nerve centre”⁴ that can bring the transparency and visibility required for agile decision-making and to oversee the implementation of both strategic and operational actions.⁵

As they face higher levels of uncertainty for the medium term, companies are also adjusting their scenario planning, with a higher planning cadence and a wider range of potential scenarios included in their analysis. When closely tied to the organization’s wider response and recovery strategy, this accelerated planning helps companies develop strategies to accommodate substitute materials, or produce hard-to-source parts in-house and plan for an uncertain environment.

Way forward

The Action Group is collecting and sharing best practices and solutions that leverage advanced manufacturing technologies to facilitate the restart of operations (see [TopLink Library](#)).

Additionally, it is engaging with key stakeholders in the broader production system (e.g. governments, academia and civil society) to shape new practices and build new partnerships that will create shared value for businesses, society and the environment. These include:

- Response plans and common standards to rapidly react and adjust operations if new COVID-19 cases are identified
- Policy recommendations to help inform governments' decisions related to the future of operations and safety
- New business models that incorporate agility, flexibility and resilience (e.g. shared factories)

The Action Group is also providing inputs to further strengthen ongoing initiatives of the World Economic Forum's Platform for Shaping the Future of Advanced Manufacturing and Production Platform:

- [Global Lighthouse Network](#): Latest state-of-the-art advanced manufacturing use cases related to agility
- [Resilience in Manufacturing and Supply Systems](#): Key capabilities to build more resilient supply chains in the context of the new normal
- [Unlocking Data Value in Manufacturing](#): Applications to make the most out of data and develop new solutions
- [New Business Models Enabled by Advanced Manufacturing](#): How advanced manufacturing technologies are enabling the transformation of both operating and business models
- [Preparing for the Future of Work](#): Cross-company actions and collaborations to prepare for the future of work in advanced manufacturing
- [New Generation Manufacturing Leaders](#): To promote manufacturing as a meaningful, lasting and future focused career choice for younger generations

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Endnotes

1. Suzanne Rivera, Kate Robu, Virginia Simmons and Shubham Singhal, “Reopening safely: Sample practices from essential businesses”, May 2020, *McKinsey.com*.
2. Didier Chenneveau, Matteo Mancini, and Sahil Shinghal “A resilient return for Asia’s manufacturing and supply chains”, June, 2020, *McKinsey.com*.
3. Sapana Agrawal, Aaron De Smet, Sébastien Lacroix, and Angelika Reich, “To emerge stronger from the COVID-19 crisis, companies should start reskilling their workforces now”, May 2020, *McKinsey.com*.
4. Nerve center is a flexible structure for guiding the work that concentrates crucial leadership skills and organizational capabilities and gives leaders the best chance of getting ahead of events rather than reacting to them.
5. Didier Chenneveau, Karel Eloot, Jean-Frederic Kuentz, and Martin Lehnich, “Coronavirus and technology supply chains: How to restart and rebuild”, April 2020, *McKinsey.com*.



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