Ramping up operations and business activity post-COVID-19
Advanced Manufacturing Action Group

BRIEFING PAPER

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

Recognizing this urgency, the **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 collaborations 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 areas where companies can work together to navigate the crisis effectively 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. A successful resumption of operations and of business activities, hinges on (a) returning to work as quickly as possible, while ensuring employee safety; and (b) ensuring a successful and rapid ramp-up

2. R**eimagine 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 "normal"

In the first briefing paper of this series, we gathered key perspectives on how companies can return to work and **Resume operations** and business activity, focused on subtopic

(a), best practices to return to work as quickly as possible, while ensuring employee safety and preventing new infections.[1]

Maintaining our focus on the "Resume operations" topic, in this second briefing paper we are delving deeper into the second subtopic (b) related to best practices and solutions that can help organizations ensure a successful ramp-up of production and business activity.

Over the past weeks, companies have worked to ensure the safety of their employees, customers and suppliers. Now they are gearing up to accelerate manufacturing and economic activity, looking for opportunities to grow and finding ways to become more agile. Below are a few examples of how companies are doing this across the value chain.

Getting ready to accelerate

When ramping-up operations and business activity, speed will be key for companies in advanced manufacturing.

To ensure a rapid ramp-up, companies are primarily focusing on quickly returning to pre-COVID crisis productivity levels, rapidly adjusting to customer demand and needs, and securing availability of supplies, as well as of services from third-party providers while actively working on ensuring a healthy cash situation.

Below are some examples of key actions along the entire value chain that advanced manufacturing companies are deploying to accelerate ramp-up.

Procurement: Advanced manufacturing companies are moving quickly to renegotiate payment terms for high-spend suppliers and categories, to identify healthy suppliers and rapidly secure logistics slots and contracts. Given the challenges ahead, companies are also giving customers an incentive to make advance payments and asking banks for extended payment terms.[2] As an example, a $10 billion Chinese automotive parts has secured $300 million+ in additional cash on hand by renegotiating payment terms with his entire supplier base.

Manufacturing: Companies in the advanced manufacturing sector are developing plans to account for at least two to four weeks of ramp-up time with reduced capacity, mainly driven by the staggered return to work of employees, as well as reduced productivity due to the required time to adjust safety procedures and retrain workers across high-priority production lines.

To keep up with customer demand, companies are working to rapidly increase available capacity (also to cover for a potential backlog accumulated for make-to-order situations) by spreading shifts across nights and weekends to maintain social distancing, as well as evaluating short-term outsourcing options.

Engineering: Organizations are deploying dedicated SWAT teams and war rooms (i.e., centralized meeting spaces where project teams and stakeholders can co-locate and visually communicate project activities) to increase efficiency and speed of execution and recover lost time on priority programmes with unchanged launch or final delivery dates.

A Chinese automotive part manufacturer, for instance, has developed a new virtualization technology solution that enables remote design work usually performed at on-site workstations (e.g., cloud-based CAD software platforms for engineering team).

Support functions: Advanced manufacturing companies are accelerating hiring to match customer demands by, for instance, hiring temporary employees to handle demand surges and trying to leverage the labour market to attract top talents. Furthermore, companies are increasing the tempo of communication with employees to create awareness of ramp-up plans as soon and as frequently as possible. They are also increasing cost transparency through spend-control towers.

Commercial: Furthermore, manufacturing companies are adapting their marketing and sales strategies to rapidly address new consumer behaviours and draw insights into demand patterns ahead of and during the ramp-up. Leading organizations are leveraging advanced analytics and multiple sources of market insights (for example, point-of sales mapping, primary consumer research, social listening, etc.) to develop a deeply granular view on demands across key micro-verticals and sales channels.

Some are deploying agile squads to manage consumer and market insights to identify and prioritize high-impact commercial actions, promote growth, oversee digital marketing and perform other critical tasks.

Take, for example, a leading Chinese car-rental company, whose order volume collapsed by 95% in February 2020 as the coronavirus surged. The company invested in micro-level customer segmentation to guide personalization and in social listening to track the latest shifts in consumer sentiment. The research indicated that tech companies in southern China, in response to the virus, were advising employees not to use public transport. The company used this insight to send multiple targeted campaigns to promote car rentals. They also used geolocation analytics to identify customers most likely to need a car and their destination.

To drive the programme, the company pulled together three agile teams with cross-functional skills and designed a recovery dashboard so the senior executive team could track progress in real time. They were able to shorten the launch campaign

time from the two to three weeks needed pre-crisis to only two to three days. Within seven weeks, the company had recovered about 90% of its business compared with the 2019 level – almost two times the rate of recovery of the number one company in the market – and increased by 500% the campaign conversion rates.

Seizing new opportunities

The COVID-19 pandemic could fundamentally shift how people live, work, and use technology. Companies in the advanced manufacturing space will likely see a shift in preferences as the expectations of workers and leaders begin to change, as well as the unveiling of additional operational opportunities and commercial ones. These opportunities are expected to drive tangible economic impact for the organizations that will be capable to master them.

For instance, key opportunities include:

– Accelerated productivity increase, as well as augmented product quality and reliability driven by faster adoption of automation

– Faster adoption of new sales channels, as well as new product and service offerings for customers

– improved end-to-end transparency along the supply chain, to surface instances of suboptimal management of key spend categories and resources allocation

Organizations are reinventing themselves to seize these new opportunities and emerge much stronger from the crisis by undertaking various activities, including those described below.

Procurement: Companies are adopting new digital planning and supplier risk-management tools to create greater visibility and respond quickly to changes in supply or demand conditions. In addition, strategic sourcing teams are using advanced analytics to manage long-tail spend suppliers' base. With these new insights, companies can uncover opportunities that were previously difficult to unveil, such us cross-category suppliers consolidation, optimization of batch orders, tailored volume-based discount mechanisms, spot checks of order price fluctuations.

Companies are optimizing procurement spend by using real-time information on inventory levels and production capacity to determine what quantities must be ordered and assist with rapid contract renegotiations. This is paramount during the crisis because commodity prices have decreased significantly (oil and copper prices, for example, have fallen by about 20%-25%). Optimizing vendor allocations and improving negotiation strategies typically deliver up to a 2%-5% reduction in the cost of raw materials. Given current events, these savings will likely be higher in this phase.

Manufacturing: The rapid migration to digital technologies driven by the pandemic will continue into the recovery as Organizations focus on increasing automation and digital tools to raise productivity and decrease exposure to potential risks.[4]

For instance, an aerospace supplier achieved an 80% OEE for the production of key airplane component by deploying IIOT

solutions to monitor and isolate common productivity losses root causes, such us tools wear and material unavailability. While impact may vary dramatically across settings, companies may improve overall equipment effectiveness (OEE) by as much as five percentage points – for example, in low-volume, high-complexity, discrete manufacturing settings.[5]

Furthermore, remote assistance and maintenance tools can yield a 10%-40% reduction in field-service costs, especially travel, by reducing the need for in-person visits. The gains may be particularly high at machinery OEMs with a large installed base.

Commercial: [To capture commercial growth, companies are developing detailed maps of prioritized opportunities and reallocating resources accordingly.](#)[6] Short-term/high-impact moves include analytics-driven sales, deployment of aggressive marketing measures, including target pricing and promotion campaigns, as well as thoughtful use of high-performing sales channels, such as e-commerce platforms.

The necessity to act with urgency has allowed businesses to accomplish incredible things in short periods of time – something that would have seemed impossible six months earlier.

A furniture retailer, for instance, managed to achieve a 60% increase in sales in digital channels in less than four week, deploying tailored campaigns for high-demand products during the COVID-19 crisis. In another example, a company was able to develop and launch a new e-commerce business in only 13 weeks. This drove twice as many orders as forecast and resulted in a 2%-3% revenue growth.

In another best-practice example, Tesla's continuous drive to reinvent the car-buying process leveraging digital has proved especially prescient. Its state-of-the-art digital showroom and virtual user guide offer customers an immersive online experience, and the contactless car delivery is tailor-made for the current environment. To broaden its online reach in China, the carmaker partnered with Alibaba on an Tmall online store. From December 2019 to March 2020, Tesla saw its sales in China double while other carmakers experienced a 50% drop over the same period.

Making agility the new norm

Companies are making agility the new norm because of the crisis and have seen positive results. Studies have indicated that organizations excel at capturing and protecting value if they are agile – i.e., move quickly to reconfigure strategy, structure, processes and technology. [In a 2017 McKinsey survey,](#)[7] agile units performed significantly better than those who weren't agile, but only a minority of organizations were actually performing agile transformations. Knowing they need to act quickly, some companies have started taking action to embed agility in their key operations functions.

Procurement: Improvement initiatives include streamlining new supplier qualification processes to rapidly restructure the supplier base as needed, reacting quickly to potential local disruptions and potential suppliers that are unable to meet demand.

Furthermore, companies are continuously leveraging real-time information to predict supply chain fluctuations. In addition, they have put in place agile processes to capture early potential disruptions, shortage risks as well as potential bottom-line

optimization opportunities, e.g. direct and indirect spend control towers, spot-buy purchasing procedures and supply chain status review cycles

Manufacturing: To create a flexible workforce, companies are cross-training employees and increasingly using temporary employees. They have also adjusted lines and plants to handle product variations and become more agile.

A Chinese electrical components manufacturer, for example, ensured end-to-end visibility across the supply chain and ran sales and operations planning (S&OP) daily or every two days due to fast-changing circumstances, recognizing that historical processes were too slow and not accurate given COVID-19. Therefore, it built a more rapid demand planning process using all available data that will remain as a structural process. Key enablers in accelerating S&OP planning include: investment in data engineering to digitalize the S&OP process; standing up highly cross-functional teams to manage rapidly changing demand; and transparent connection with customers to anticipate rapidly changing needs.

Engineering: Companies should reprioritize R&D programmes, as well as new products launch, in response to rapidly changing demand. Furthermore, it will be fundamental to reassess product pipelines to reduce complexity and right-size product/technologies portfolio. Reducing portfolio complexity is particularly important for supply-chain resilience.

For example, a leading European manufacturer of large engines for industrial applications has dedicated a "plan-ahead" team to model the development of all its 10+ customer industries globally to better monitor and understand the different dynamics as well as the resulting implications for its respective business.

Support functions: With circumstances changing rapidly, support functions must change their processes to become more agile. For instance, they may need to undertake two-week sprints or daily scrums in many areas. Companies should also foster a culture of cross-functional collaboration. For instance, finance and HR teams might join daily demand-planning huddles to address cashflow management and staffing needs.

Commercial: Companies are developing medium/long-term forecasts of demand. Furthermore, strong focus is being applied to (a) understanding new customer needs and behaviours and adjusting the sales approach accordingly – e.g., more emphasis on digital sales, focus on stability and quality, higher flexibility; (b) developing digital demand sensing tools to help identify which regions, customers and products will ramp-up more quickly to identify high-growth areas; and (c) proactively influence demand volumes/mixes and customer preference to minimize/predict demand fluctuations.

As an example, a large Taiwanese OEM of PCs is applying customized pricing strategies to discourage ordering of scarce components, as well as deploying commercial promotions to dampen supply constraints.

Additional effort is devoted to create clear guidelines and objectives for the commercial teams – typically cross-functional groups or squads that bring together people with key skills such as representatives from data analytics, sales operations and design. Team composition is based on specific needs. At some point, representatives from HR, legal, finance, or other groups may participate in team activities to provide support.

The way forward

The Action Group will continue to collect and share best practices and solutions that leverage advanced manufacturing technologies to facilitate the ramp-up of operations across all key functions.

Additionally, it is engaging with key stakeholders in the broader production system (e.g. governments, academia and civil society) to identify collaborative actions to accelerate the ramp-up of operations and business activity post-pandemic, and shape new practices and build new partnerships that will create shared value for businesses, society and the environment.

These include:

Unlocking new operating and business models – Develop a shared narrative on unlocking new business and operating models and balancing current priorities with pursuing new opportunities

Driving fast-paced innovation: Capture use cases, best practices and key enablers and explore opportunities with adjacent industry groups

Driving agility through adoption of advanced manufacturing technologies: Develop a new shared narrative on how advanced manufacturing solutions have increase productivity and overcome production challenges during the pandemic

Optimizing product complexity through resilient design: Develop best practice examples on how complexity is being addressed across industries and learnings for this group

Building supply chain logistics resilience: Collaborate with Supply Chain & Transportation IAG to develop end-to-end supply chain resilience best practices

Key trends in manufacturing workforce/resilience/safety: Work with Advanced Manufacturing AMA taskforce to identify key trends and best practices from chief human resources officer (CHRO) discussion

The Action Group is also providing inputs to 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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