

The Impact of COVID-19 on Manufacturing Technology Adoption





Emerging Needs from COVID-19



Chinese manufacturing production is down 38.9% Year-over-Year (YoY) for the first three months of 2020 and the United States is experiencing its largest monthly decline in industrial production since 1946. Meanwhile, food and beverage manufacturers are mass producing hand sanitizer, automotive and aerospace companies are producing ventilators, and hundreds of companies with 3D printers are producing Personal Protective Equipment (PPE). This is not the new normal but an interim period of tremendous transition that is amplifying existing drivers of digital transformation.

This report outlines the impact of COVID-19 on manufacturing technology adoption on a near- to mid-term horizon. In doing so, ABI Research outlines four main scenarios for recovery and a set of best practices for suppliers to come out strong.

Potential Impact

There are four main recovery scenarios:



Previous Scenario Pushed Out: Unlikely There will be inevitable delay—for example, the 3rd Generation Partnership Project (3GPP) meetings to finalize R16 5G standards moved from March to June. Other factors include trade/ border control and when people are permitted to return to work.



V-Shaped Recovery: Optimistic. Unlikely in entirety due to the global nature of the pandemic and unsynchronized nature of factory closures and reopening economies.



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U-Shaped Recovery: Likely. Many economies such as the United States are taking a phased approach to reopening.



S-Shaped Recovery: Most likely. Overall, this represents a combination of forces such as social distancing, trade friction, and the global re-stabilization of supply and demand in addition to potential pockets of COVID-19 resurgence.



Potential Impact

Companies further along their digital transformation journeys have been able to pivot and respond more quickly to COVID-19. For others, the urgency of the pandemic has forced a level of digitalization upon them that might have not occurred otherwise.

Key innovations being fast tracked include everything that touches digital and distributed manufacturing: advanced wireless sensor networks, remote monitoring, analytics, digital twins, cloud, Augmented Reality/Virtual Reality (AR/VR), and cloud-based collaborative Computer-Aided Design (CAD) (*e.g.*, PTC/OnShape). Larger software rollouts and other site-deployed solutions (hardware and software), however, will be delayed due to the practicalities of on-site work. Most Capital Expenditure (CAPEX)-intensive investments without a definable near-term Return on Investment (ROI) path will also be met with headwinds due to near-term budgeting conservativism. Affected areas include cobots, Autonomous Mobile Robots (AMRs), and integrated vision systems.













Best Practices: Where to Place Your Bets

Many companies have been able to pivot and quickly adapt their dedicated factories and product development teams to make PPE and ventilators. The speed of this shift has been faster with digital transformation tools that help companies take existing process capabilities and align them with new products and processes. In an arrangement where an automaker is producing medical equipment, General Electric (GE) would receive a CAD file from Airon, a small, Florida-based ventilator manufacturer, and enlist Ford as its contract manufacturer. Ford would disassemble the original device, 3D scan relevant parts, and reverse-engineer a version it could mass produce (in this case, 50,000 in less than 100 days).

The fundamentals of this example present the business case clarity manufacturing end users need to get buy in for new technology deployments at a high level, but there are specific areas where technologies providers must align moving forward.

Recommendation 1:

Prioritize Cloud

Cloud is past the point of acceptance and for capabilities like remote monitoring, collaboration, and visibility, or Overall Equipment Effectiveness (OEE), cloud is critical. Fluctuating resources, supply chains, and suppliers merely make the integration of product lifecycle and production (automation) more important. For example, it isn't crazy to envisage a future scenario where generative design and/or CAD software is used to create a product based on supply chain constraints, *e.g.*, using part consolidation for supply chain advantage. Cloud allows information to be easily and quickly shared, improves compliance, and makes it easier to replicate and scale manufacturing optimization.

Recommendation 2:

Embrace Digital Twins and Simulation Software

A digital representation of physical assets allows better visibility into the health and performance of operations, which leads to better remote monitoring. Better remote monitoring means better predictive maintenance, which leads to better management of people. Digital twins and simulation software can also be used to accelerate learning and minimize error, which protects margin. These capabilities are a necessity in the face of global travel restrictions and even more so as manufacturers reopen factories with an impetus to ramp up production immediately to make up for lost time. Digital twin and simulation software providers must establish lighthouse partners with industrial Original Equipment Manufacturers (OEMs).



Define the Service Model

SKF wants to sell rotations and motion rather than bearings; Konecranes wants to sell weightlifting rather than cranes; Toyota Material Handling wants to sell capacity commitments rather than robots. While the decision to invest in digitalization is directly related to product complexity and ROI, COVID-19 dispels any residual notion that the future is not digital. This makes software-centric industrial companies that have already transitioned to a Software-as-a-Service (SaaS) model well positioned for the inevitable and broader shift to value-based, solution selling. Those that have not or do have an as-a-service or recurring revenue component in their roadmap must seriously consider if, how, and to what extent they can adapt, or risk being left behind.

Need To Adapt To The New Reality? We Can Help.

ABI Research's Manufacturing & Industrial Service delivers unparalleled insight into the technologies that are driving digital transformation in the industrial and manufacturing sector.

Whether you are new to the space, an established partner, or having trouble breaking in, we can help you identify potential market opportunities and investment strategies.

To learn more, contact our team today.

