A PANDEMIC THAT CHANGED THE GAME FOR THE METAL INDUSTRY

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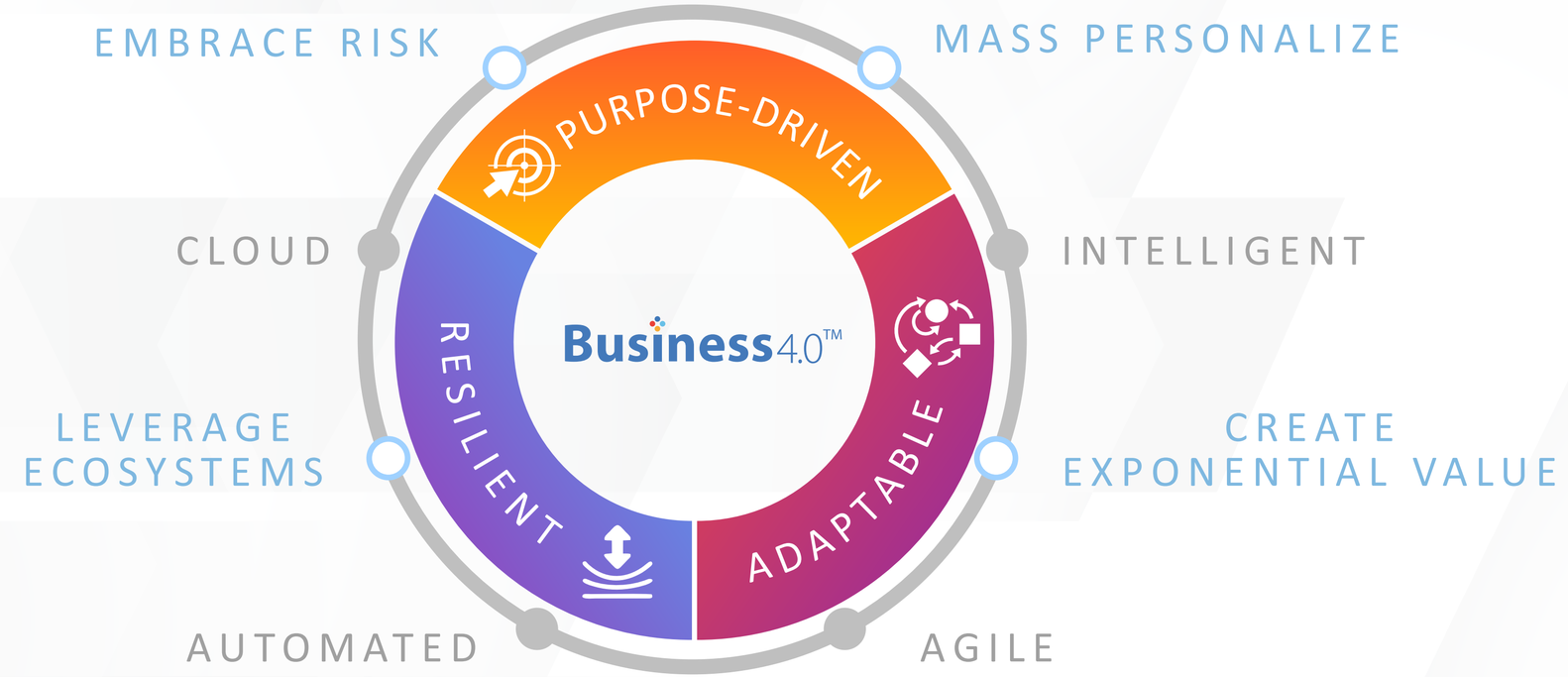


Abstract

COVID -19 has disrupted an already cash-strapped, asset-intensive metal industry. It is predicted that the industry may lose as much as USD 200 billion in earnings before interest, taxes, depreciation, and amortization (EBITDA) in 2020 compared with 2019[1]. In fact, the slackening demand and long leads to reopen operations require metal manufacturers to improve forecasting and swiftly respond to market dynamics. In addition, over supply of inventories can result in sudden price drop. Manufacturers are also under pressure to improve efficiencies while reducing costs, even considering shut down of facilities to avoid over production and inventory pile-up. According to the National Association of Manufacturers, about 80% manufacturers expect the pandemic to have a financial impact on their business[2].

It is time for metal producers to revisit their business strategy and shift focus from non-core business operations to core manufacturing. This will require centralizing or divesting non-core businesses and processes and outsourcing to reduce the total cost of ownership and accountability. This paper throws light on how IT integration can enable digital transformation and help the recession-hit metal industry resurrect itself during and beyond the pandemic.

[1] *Mckinsey&Company, How procurement leaders can bring metals and mining up to speed, May, 2020 https://www.mckinsey.com/industries/metals-and-mining/our-insights/how-procurement-leaders-can-bring-metals-and-mining-up-to-speed, accessed September, 2020*

[2] *National Association of Manufacturers, Economic and Operational Impact of Covid-19 to Manufacturers, https://www.nam.org/coronasurvey/ , accessed October 2020*

Industry implications of the pandemic

The metal industry has rapidly responded to the COVID-19 outbreak by ensuring the safety of employees while maintaining business continuity. However, a drop in demand has compelled manufacturers to lower production levels and limit inventories. At the same time, they have been forced to put CapEx intensive projects on hold to prevent cash outflow and maintain cash reserves for urgent needs. In addition, communication has been largely virtualized with reduced shift timings paving the way for short-term work to mitigate job loss.

To ensure long-term sustenance and respond faster in such a situation, businesses need to build resilience and flexibility. This requires accelerating digitalization across the entire value chain of metal manufacturing. One way to do it is by automating manual work for enhanced productivity and efficiency in an otherwise traditionally labor-intensive industry. It is also crucial to reduce waste and improve efficiency across the value chain to achieve success as well as focus on core operations while outsourcing IT support and centralizing IT, Finance, and HR functions across businesses. This helps lower operating costs and reduce maintenance overheads. In addition, with work-from-home fast becoming the new normal, the metal industry also needs to build capabilities to host virtual meetings, seminars, conferences, trainings and interviews to save travel and infrastructure related cost.

Building resilience with technology enablement

COVID-19 has also reduced the demand for metal consumption. This necessitates revisiting the product mix and building products that meet futuristic demands. For example, the automotive industry can offer autonomous EVs, BS6 engines, light weight, and high strength chassis components. It is also crucial to invest in automation to quickly and easily cover up for the run costs. Like many other sectors, the COVID-19 pandemic has exposed the lack of preparedness of the metal industry to manage uncertain situations. Metal manufacturing companies that prioritize rapid technology adoption can be better prepared to mitigate the risk of COVID-19-like exposures enabling a safer and more efficient way of functioning for the workforce. The technological enablers that can help achieve this include:

Virtualized operations

Virtualized training environments using AR/VR technologies and increasing cloud adoption can help in remote enablement as well as training and knowledge dissemination for an aging workforce. At the same time, remote operations have resulted in security related threats for physical assets and IT systems supporting various operations and business processes. It is therefore important to bolster security measures to protect assets and systems.

Manufacturing excellence

Offering new products and processes will empower the metal industry to explore newer markets and product applications, improving market share, profitability, and resource utilization. With limited control on the topline in a buyer's market, metal producers can focus on cost reduction opportunities to improve the bottom-line. Algorithms can be leveraged to predict and signal asset failures. This will help reduce the risk and costs associated with actual equipment failures. Metal companies thrive on innovation and spend reasonably well in R&D across product, process and new technology. Digital drivers are gaining an edge in today's world and propel such investments. Hidden value can be unlocked by looking at the manufacturing activity holistically, rather than in silos. The idea is to connect physical and virtual entities like assets, operations, and processes to realize through-chain optimizations and sustained improvements in the long run. Digital Twins, IoT, simulation modeling and their likes functioning in unison across the chain will be key to creating a truly connected enterprise. Once a solution framework is established, the same can be used to achieve such benefits across the manufacturing value chain that might include product, process and asset performance, customer order fulfilment, and delivery performance, inventory performance, waste reduction and so on, all optimized across the chain.

Supply chain

Inadequate and inconsistent demand for metal products and market uncertainties make it difficult to manage the risk of balancing production and capacity utilization vis-à-vis conversion to sales. Additionally, lack of insight into demand forecasting and sales and operations planning hampers working capital management. Planning and forecasting is key to ensuring optimum inventory levels and to support a healthy order fulfilment process. It is also crucial to build a nimbler salesforce, one that can promptly respond to customer needs in an efficient way. Firms can leverage digital and mobile solutions to build an agile salesforce that can work anywhere, anytime and quickly respond to customer needs.
Given procurement of essential commodities such as raw materials, consumables, operating supplies, and maintenance spares is a complicated process with a large number of variables impacting overall efficacy, automating procurement can help improve efficiency. Combining cognitive technologies such as AI/ ML with RPA and enterprise analytics can help underpin supply chain management and procurement and make the metal supply chain resilient and adaptive.

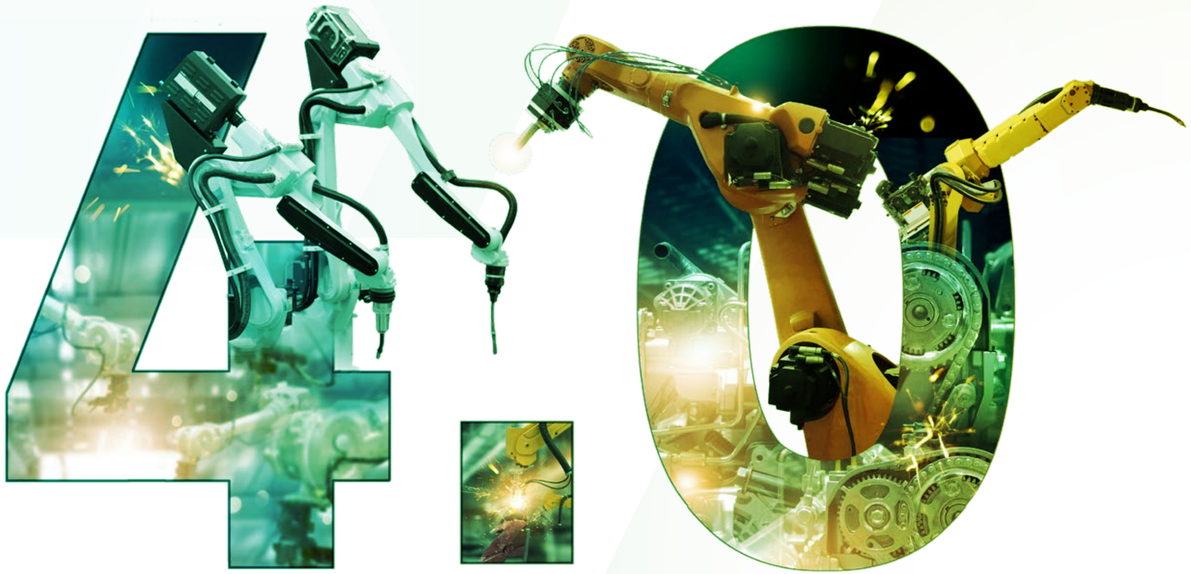
Analytics

Analytics is expected to play a key role in fostering innovation in the industry. Global industrial majors are allocating investments to nurture analytics in all walks of metal manufacturing in the pursuit of becoming truly data-driven organizations. As a result, big data analytics is likely to grow exponentially in the near and mid-term horizons, leveraging the high degree potential of data across the metal value chain. Investment trends are observed across application areas like procurement analytics for identifying maverick spends and collusive behavior patterns, pricing analytics for retaining market share in the face of fierce competition, identifying future demand for a new product, supply chain processes like forecasting in a low-demand scenario, real-time visibility of performance in the manufacturing floor and the same extended to the customer, intelligence in sustainability processes like energy, waste and carbon footprint management, customer buying patterns, health and safety of employees, and more.

Bolstering the supply chain with cross-industry innovation

Embracing digital technologies such as big data, IoT and AI would create exponential value for businesses and their customers while mitigating risks of associated investments. While manufacturing excellence can be explored with automation at scale, leveraging location independent agile and DevOps can further create intelligent processes driven by Business 4.0. In the post-COVID-19 world, collective endeavors are likely to flourish across industrial partners. For example, end-to-end eco-system partnerships or industry peer-government consortiums can be leveraged for enabling innovation and crisis management. This will help accelerate the overall process, enhance the probability of success, and share the risks of failure amongst the partners.

Metal producers need to rethink their digital strategies to not only weather the crisis but also become future ready. Business 4.0 provides the right tools to restructure the organizations, revisit business processes and evaluate strategic fitment of digital technologies such as IoT, Analytics, AI and cloud to transform their businesses - a need further re-affirmed by the pandemic.



About the Author

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Arindam Sarkar is a Subject Matter Expert in the metals manufacturing domain helping our global customers in the sector achieve manufacturing excellence. He holds a Bachelor of Engineering in Metallurgy and has 15 years of extensive hands-on experience in the metal industry shop floor processes and has led Business functions like Production, Quality, Planning, R&D and Technology.

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