Responding to disruption in an era of labor shortages — as well as new environmental, social, and governance requirements; rising costs; and more demanding customers — can challenge even the most prepared industrial manufacturer. Organizations that are more digitally enabled find it easier to navigate these challenges.

Today's Manufacturing Challenges Require a Digital-First Strategy

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Questions posed by: Oracle
Answers by: Mickey North Rizza, Group Vice President, Enterprise Software

Q. How are manufacturers fairing in this age of constant disruption?

A. The world has shifted to a more restrictive global economy with many continued disruptions, including worker/talent shortages, an aging workforce, supply chain talent and material shortages, and manufacturing missteps, all of which are eroding brand loyalty. Looking at these disruptions, IDC research finds that superior customer service depends upon how engaged the employees are; unhappy employees lead to poor customer experiences. Employee turnover and staff shortages are at record highs, especially in the supply chain. Employees are also making sure it is understood they want to work for companies that match their values (e.g., diversity, sustainability).

In addition to these employee disruptions and the new normal, manufacturers are also finding environmental, social, and governance (ESG) strategies are becoming more important to all their initiatives. These compounded disruptions have altered the manufacturing industry's priorities, putting a new focus on redefining practices and processes so the organizations can survive future disruptions and emerging trends.

Consequently, manufacturers are struggling to achieve full visibility and insight for managing their people, processes, suppliers, and materials. Making the right decisions about resources, constraints, and opportunities is required for an organization to be resilient and ensure its future. In IDC's February 2022 *Future Enterprise Resiliency and Spending Survey*, 94% of manufacturers found they had up to 49% improvement in business resiliency because of digital transformation (DX) initiatives. This same study also found that the top 3 business initiatives of 2022 are customer satisfaction, operational efficiency, and digital innovation. And when manufacturing organizations have worker/talent shortages, an aging workforce, and supply chain talent shortages, new technology has been proven to attract new workers with skill sets employees need.

It's clear that customer focus and revenue growth requires manufacturers to make the right technology investments to bring efficiency and utilize innovation to navigate the disruptions while also meeting new business requirements.

Q. What can manufacturers do to gain the insights they so desperately need?

A. Many manufacturers are stuck with semi-automated or, even worse, extremely manual business processes. In IDC's February 2022 *Future Enterprise Resiliency and Spending Survey,* 37% of manufacturers found the amount of data they need to understand and analyze process efficiency has grown exponentially over the past few years and is now beyond the capacity of their current systems. Trying to manage the massive amounts of data with legacy systems, designed for far fewer data streams and analysis, is stopping the business from moving forward.

With fewer and more constrained resources and legacy applications failing to meet the basic needs of manufacturers, new technology strategies are required for manufacturers to compete in this new world. These strategies include modernizing systems to enhance remote work capabilities, centralizing the monitoring of operations and asset diagnostics, reducing manual processes with increased automation, and helping the organization build resiliency into its supply chain across the many data sets.

The right strategy is choosing technology that is cloud native, modern, modular, and innovative. With these new cloud-native modular and innovative systems, not only do business processes and data analysis become easier but ESG goals can also be met with the reduction in datacenter usage. This same technology also provides operations with anywhere, anytime access and is multidevice enabled, is continuously updated with innovation that enables more data and analysis, and provides ideas to solve business issues as they occur.

When manufacturers focus on selecting the right technology, it enables a new culture of continuous innovation. Some 56% of C-level executive respondents in IDC's *Future Enterprise Resiliency and Spending Survey* stated that operational efficiency is their number 1 business priority for 2022 — and adopting new technology is the main pathway to success.

Moreover, supply chain resiliency requires new technology, as *IDC MaturityScape: Digital Supply Chain Resiliency 1.0* found 70% of companies are focusing on supply chain visibility and 80% are looking for ways to be more agile. While these two areas are critical for a manufacturer's survival, so too are employees. IDC finds that by 2023, chronic worker shortages will compel 75% of supply chain organizations to prioritize automation investments — improving productivity by 10%. It is obvious that automation with modern, modular, and innovative technology is the answer to gaining more insights for operations, manufacturing, and supply chains.

Q. Why can't traditional technology reduce manufacturing concerns?

A. Unfortunately, legacy systems cannot assist manufacturers in navigating the digital-first world. The legacy systems in use today are encumbered with thousands of customizations and provide only partial visibility of narrow data sets. These systems were typically built to support serial business processes and have only been semi-automated at best. They cannot handle the massive data sets required to optimize business processes and are lacking technologies such as artificial intelligence, machine learning, robotic process automation, and predictive analytics to enhance the employee experience while solving business problems faster. When employees spend more time trying to find, extract, and understand data from legacy systems instead of solving problems with insights, the business itself suffers.

To stay ahead in a digital-first world, manufacturers must focus on digitally enhancing their operations for lasting improvement. IDC's December 2020 *Vertical and IT Communications Survey* found that 64% of manufacturing organizations had increased their budgets to update or replace outdated and legacy technology. They updated to more modern, modular, and innovative solutions because they want to attract new customers (38%), must reduce their operational and product costs (25%), and must improve operational performance (22%).

IDC finds manufacturers that invest in transforming their organization with sound digital technology strategies have improved revenue and profitability. In fact, according to IDC's December 2021 *COVID-19 Impact on IT Spending Survey,* businesses that had digitally transformed had improved their financial performance by an average of 14% over the previous few years.

Q. As manufacturers move toward digital savviness, what key points should they consider?

A. Moving to a digital-first strategy requires an honest look at the business, from systems to processes to employee practices. The following are five key points manufacturers should consider:

» On-premises systems traditionally cost more to run than a cloud solution. When the products are onsite in your own datacenter, the costs add up. And when new updates are brought forward, costs are incurred for additional customizations or changes to existing customizations.

» Outdated business processes that are long, cumbersome, and mostly manual with very little automation expose manufacturers to data integrity issues that typically result in employees making the wrong decision.

» Changing employees' perspective on how they can best use new technology in a much more simplified manner takes time and education. Change management is a major requirement moving from the antiquated systems of days gone by to new systems that scale quickly and easily but must be understood. The change involved moving from transaction processing to insight guidance and selection and is a major shift for employees. The digital-first world enables employees to better leverage the new insights and quickly make better business decisions.

» Upgrades on modern systems are no longer about customizing everything but rather about focusing on simpler, easy-to-use technology with best practices including new innovations built into the product. Organizations find it is much easier to upgrade in the cloud and stay current with their technology and best practices.

» Evolving business processes help manufacturers continuously innovate.

In summary, the easier it is for manufacturers to use technology and keep it up to date, the more business benefits are derived, without downtime and situational duress.

Q. What should manufacturers look for as they build out their digital-first strategy?

A. Organizations should consider the following seven modern technology application attributes when evaluating vendor offerings:

» **Cloud first.** The anytime, anywhere access of cloud allows businesses to be flexible and agile in coping with rapidly changing business dynamics. In addition, moving from on-premises technology to the cloud enables the organization to reduce carbon emissions by moving the datacenter to the technology vendor.

» **Automated workflows.** Automation provides the ability to complete tasks faster, reduce human errors, capture critical operational information, and improve decision making.

» **Scalable and flexible.** Software vendors must demonstrate that they are building a solution that is ready for both today's business hurdles and tomorrow's technology challenges.

» **Innovation.** Vendors must offer technology advances like machine learning and artificial intelligence to support the collection and analysis of relevant data to expose possible risks/exposure.

» **Integrated suite.** The best systems continuously evolve to become software suites integrated with IoT, mobile, and other capabilities for more efficient and flexible operations. In addition, connecting data across the business brings a clearer picture of the entire business while also enabling the business to make more informed decisions.

» **Predictive analytics.** Organizations must understand what is happening now but also need to devise a set of actions to help navigate toward the right outcome.

» **Microservices architecture.** Loosely coupled services that are independently deployable and organized around business capabilities help evolve the technology stack within an organization.

About the Analyst

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Mickey North Rizza is Group Vice President for IDC's Enterprise Software. She leads the Enterprise Applications & Strategies research service along with a team of analysts responsible for IDC's coverage of the next generation of enterprise applications including digital commerce, employee experience, enterprise asset management and smart facilities, ERP, financial applications, HCM and payroll applications, procurement, professional services automation and related project-based solutions software, supply chain automation, and talent acquisition and strategies. In her role, Mickey and the team advises clients on these intelligent, modern, and modular enterprise applications for businesses of all sizes with an emphasis on the key trends, opportunities, innovation and the IT and business buyer concerns, requirements, and buyer behaviors.

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