Digital Transformation 2.0:

The Next Phase for Manufacturing

Manufacturing is undergoing a massive business transformation, shifting from a process-driven model emphasizing speed and cost efficiencies to a model that puts the focus on working smarter to uncover and embrace new opportunities.

Although technology has played a crucial role in manufacturing—indeed, some might argue manufacturing wouldn't exist without technology—the sector has been slow to embrace digital transformation. The cost of replacing or updating the machines that run the factories traditionally has been a barrier to digital transformation, with many manufacturers choosing to hold off on their transformation efforts.

Other industries, however, are experiencing positive results and reaping the benefits of their digital transformation moves. Technologies such as big data and analytics, machine learning and artificial intelligence, cloud services, IoT and more are helping companies of all sizes in all sectors uncover new opportunities and take their businesses well beyond their traditional boundaries.

As a result, manufacturing companies are now recognizing the long-term value of digital transformation: Eighty-seven percent of manufacturing companies taking part in a recent IDG survey have adopted or have plans to adopt a digital-first business strategy.[1]

While some manufacturers are just starting their digital transformation journeys, other forward-thinking companies are looking to expand their transformation efforts to create even more opportunities and address new challenges. The drivers, technologies, processes and mindsets that drove their initial digital transformation efforts have evolved. As such, so must the organization's tools to address those changes.

As organizations embark on the next phase of their digital transformation journeys, the manufacturing space is poised to take great advantage of a data-driven business model to gain insight to streamline processes, improve product quality and increase customer satisfaction.

Continuing the Benefits of Digital Transformation

The first wave of digital transformation leveled the playing field by showing organizations how technology could help them work smarter and more efficiently.

In a survey of more than 300 executives across a variety of industries, 71 percent of respondents said that 50 percent or more of their business decisions now include analytics. What's more, 63 percent of

survey respondents who have a finance function said they are using data and analytics to find new opportunities to fund business growth.[2]

And, it is predicted that by 2020, 25 percent of Global 2000 companies will have developed digital training programs and digital cooperatives to better compete for new employees and retain current ones.[3]

Big Data

In manufacturing, data has been —and continues to be—the driver for digital transformation, providing insights to create greater efficiencies and discover new market opportunities.

Prior to digital transformation, the traditional business model in manufacturing focused on creation of the end product, rather than on the processes involved in the creation of the end product. As a result, much of the data that was generated during the process was simply discarded, including valuable information such as environmental factors impacting worker productivity, conditions impacting the product build process or daily health of the systems running the machines.

Today, however, a greater number of manufacturing companies are relying on big data and analytics to provide valuable insight into their operations and illuminate processes and systems in need of care and improvement. The data from systems throughout the company—ranging from the marketing department to the factory floor—and data collected from outside sources—for example, long-range weather forecasts, the price of oil and export tariffs and even social sentiment—is being collected, stored and analyzed for insights to help companies advance their business.

Given the opportunities that data can help uncover, it's no wonder companies of all sizes have embraced big data and analytics. In fact, big data/analytics is perceived as a contributor to revenue growth by 70 percent of IT executives taking part in an IDG survey.[4]

IoT and IIoT

The internet of things (IoT)—or industrial internet of things (IIoT), in manufacturing's case—also is major driver of helping manufacturing companies work smarter. The connected devices in an IIoT environment produce data that can enable manufacturers to be proactive in their systems' maintenance by recognizing when certain units are close to breaking down, as well as understand where bottlenecks in the manufacturing process are, for example.

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In addition, IIoT devices connected between and among manufacturers, suppliers and dealers in the supply chain can alert the appropriate people and systems about any issues such as product or component availability and quality, which can help reduce waste and cost while ensuring only the highest-quality products reach customers.

Manufacturers with operations outside the factory, such as oil rigs or wind farms, for example, can manage connected devices remotely, including any issues impacting their performance, saving the company time and money spent sending out technicians to diagnose and fix equipment problems. What's more, other issues that have the potential to impact equipment performance can be measured through other connected devices, with the data sent to the manufacturer for analysis. For instance, a connected barometer could warn of steady, heavy rainfall flooding oil derricks or a ground sensor could warn of constant vibrations due to heavy truck traffic.

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Artificial Intelligence

When combined with connected devices and big data analytics, artificial intelligence holds the power to be truly transformative to manufacturing. AI can impact all areas of manufacturing, from the factory floor to operations and beyond, helping improve business processes, assist employees in doing their jobs more efficiently and increase overall end user satisfaction.

For example, manufacturing firms could use AI tools to find microscopic defects in products such as circuit boards, which can help reduce scrap rates and waste; better forecast and plan along the supply chain, which would help reduce errors in component creation or acquisition; and more accurately optimize inventory through automation, which can help improve end user satisfaction through product availability.

Manufacturing firms also could use AI bots to help communicate with and expedite service to their customers, answering questions and providing information instantly without human interaction. And AI used with such as sensors and RFID tags can help provide insight to manufacturers where there may be inefficiencies in their production processes.

Building the Infrastructure for Digital Transformation 2.0

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As organizations strive to push their digital transformations to the next level, they need an environment that supports digital transformation from every point on the network. Hybrid cloud and network environments, SD-WAN and high-speed broadband are just some of the technologies that can enable companies to better manage their business applications across all locations, while networking components such as WiFi and unified communications can ensure employees can work anytime, anywhere, with no impact on productivity.

No digital transformation happens overnight, regardless of how far down the path manufacturing organizations are already. To help them as they move deeper into digital transformation without overly stressing their current network and to help streamline processes for IT managers, managed services can help tie disparate systems together and "fill in the gaps" as manufacturing companies update their current infrastructure and after networks have been upgraded.

Working with a network service provider can help IT leaders reimagine how to build a modern network and IT infrastructure that's capable of handling the all aspects of digital transformation 2.0. Manufacturing organizations can leverage virtual and physical private Ethernet connectivity to assure there are no issues regarding network performance and availability for critical applications at all company locations. They also can receive all or some of their most critical connectivity functions as a managed service, including managed connectivity, WiFi, security, voice and business continuity, among others.

Conclusion

Manufacturing has much to gain from digital transformation, whether they are just starting their

transformation journey or are looking to expand their existing transformation efforts to create even more opportunities and address new challenges. Gone are the days when the focus in manufacturing was on creation of the end product; companies today must focus on the processes involved and leverage the insights from big data analytics and other transformational technologies to work smarter and more efficiently and find new areas of opportunity.

In the second iteration of digital transformation, organizations are building upon the foundation laid with their initial digital transformation efforts to address new challenges and create even more opportunities.

To learn more about how Comcast Business can help, visit ComcastBusiness.com/digitalfirst.

1 Louis Columbus, "The State of Digital Business Transformation, 2018," Forbes, April 22, 2018 https://www.forbes.com/sites/louiscolumbus/2018/04/22/the-state-of-digital-business-transformation-2018/#4c5131f45883

2 "Analytics Accelerates into the Mainstream," research report, Dun & Bradstreet/Forbes, June 2017 https://www.forbes.com/forbesinsights/d&b_enterprise_analytics/index.html

3 Shawn Fitzgerald, Robert Parker, Sandra Ng, Philip Carter, Lynne Dunbrak, Leslie Hand, Serge Findling, Michael Versace, Kimberly Knickle, Kevin Prouty, "IDC FutureScape: Worldwide Digital Transformation 2018 Predictions," report, IDC, Nov. 1, 2017, https://www.idc.com/getdoc.jsp?containerId=prUS43188017

4 "2018 State of Digital Business Transformation," research report, IDG http://resources.idg.com/download/white-paper/2018-digital-business