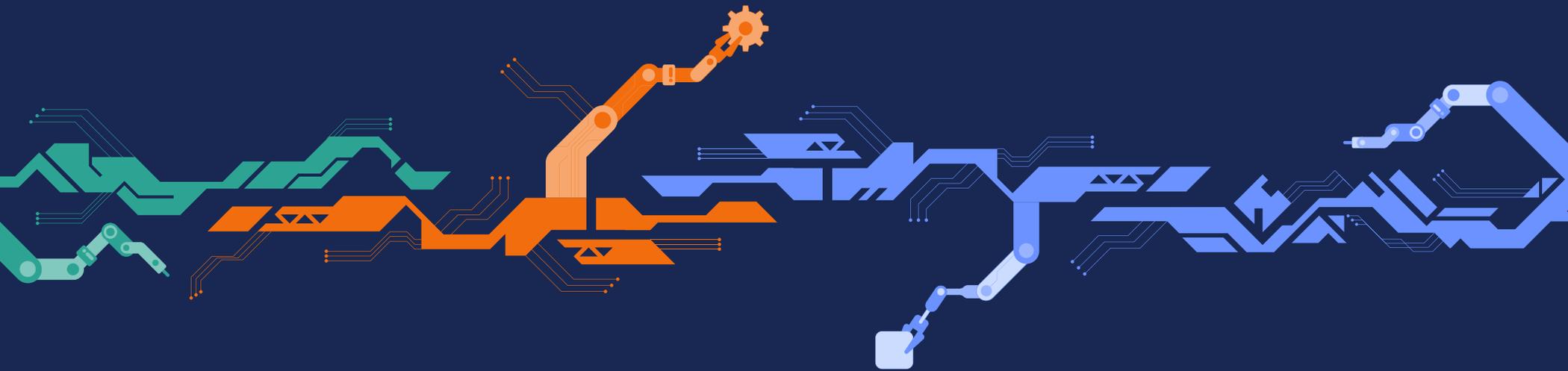
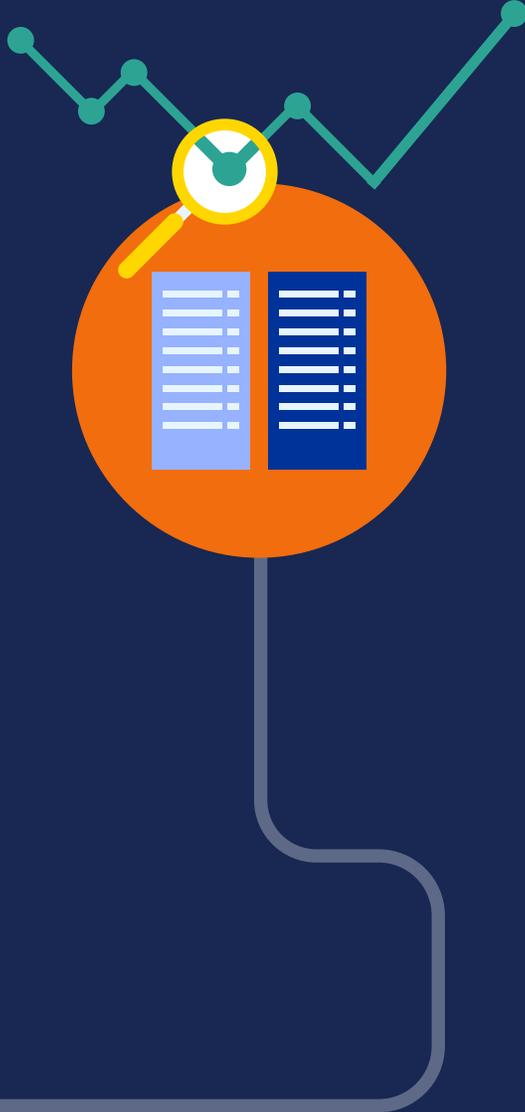


Driving Digital Transformation To Meet Customer Demands

SnapLogic and Infosys for Manufacturing





Customers expect more

The manufacturing industry is undergoing intense changes in response to many shaping forces. This includes new and emerging technologies, such as artificial intelligence, machine learning, robotics, code manufacturing, and integrated workflows, processes, and data pipelines. But the overarching factor affecting change in manufacturing is customer experience.

Manufacturers are expected to own responsibility for the consumer's experience more broadly than ever before. Not only in quality assurance, and for retailers and distributors, but for the end consumer experience. It's no longer just about making and shipping a solid, reliable product that meets specifications. Now, the process of manufacturing is far more visible and directly tied to the end consumer.

What does this mean for IT decision-makers as they lead their companies in modern, high-tech manufacturing?

For all, it means a move to the cloud if they aren't fully there yet. It also means understanding the power of integration to weave the network of systems, applications, tools, and resources to truly drive efficiency, speed up product development, ensure adequate production, and ultimately, meet customer expectations.

In this eBook, we'll explore:

- The major digital trends shaping the manufacturing industry
- How manufacturers have adapted to change
- How IT can support digital transformation

Read on to learn how to evaluate and apply new technologies to create a connected ecosystem that drives a seamless customer experience at every touch point along the way.

Manufacturers are reinventing their identity to view their organizations as data companies making tangible products.



Five trends transforming the manufacturing industry

Multiple factors are impacting the manufacturing industry. Macro trends shape industries in broad sweeping strokes, but how individual organizations are uniquely shaped is nuanced by the decisions leaders make today about the future. As we'll explore later, one of the keys to intentionally shaping your organization is through the technology choices you make about integration.

1. You need to be digital-savvy

Manufacturing has been harnessing digital transformation for decades; today's organizations are required to be digitally sophisticated. In fact, many manufacturers are reinventing their identity to view themselves as data companies that make tangible products. Operations harnesses AI, machine learning, IoT, as well as robotics, for research and development, production and assembly, order management, pick-and-pack, just-in-time inventory, logistics management, reverse logistics, and other key functions.

While the digital focus is on improving the actual manufacturing process, today there is a secondary driver coming from the retail industry.

2. Retail customer expectations are driving a cultural shift

The pandemic made "supply chain" a household term, and the growth of omnichannel experiences across vast swaths of everyday life has brought manufacturers out of the shadows for consumers.

Retail customer experience expectations of speed, convenience, real-time visibility into product and inventory status/location, fast delivery times, real-time communication, and a seamless end-to-end experience are now expectations of manufacturers, too. Unlike the past when manufacturers were distanced from the end consumer and retailers were the connecting link, today's consumers buy direct-to-consumer from manufacturers and understand the role that manufacturers play in the supply chain and in their customer satisfaction.

Retailers, in turn, look to manufacturers to help them deliver on customer experience, and in doing so, need manufacturers to align with those expectations. It's a ripple effect, and more than before, consumers are willing to blame manufacturers and the supply chain, rather than the retailer, for negative customer experiences. To satisfy customers, every member of the supply chain has to be at the top of their game, connected, and communicating in real-time through automation with every other member.



Adopting Industry 4.0 technologies pays dividends in the long run through increased capabilities and improved efficiencies.

– [National Association of Manufacturers \(NAM\)](#)



3. The cloud is fundamental to advancing smart technology and supply chain

Cloud-based solutions are critical for advancements like smart manufacturing (aka [Industry 4.0](#)), delivering smart services, sustainability efforts, and navigating the supply chain. A cloud-based data platform can enable manufacturers to democratize data and bring together operations and information technology networks. A collaborative partnership with an established cloud services provider such as AWS or Snowflake lays a strong foundation for a technology ecosystem that can facilitate the future.

4. Automation is expanding and expected

Manufacturers have long deployed automation to make production more efficient. This continues with robotics and other automated systems. However, today manufacturers are fast becoming data companies – data informs and runs their processes, feedback loops, and production, to the point where some manufacturers are turning autonomous and will run without humans. Automation to this extreme requires data, applications, software, IoT, platforms, and systems to be integrated.

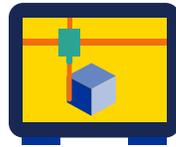
5. Post-covid era expectations demand a supple ecosystem

Now that the pandemic disruptions in the supply chain have eased and the prices of raw materials have declined, manufacturers are turning their attention back to growth and expansion. This means assessing what's possible with new and emerging technology. Many manufacturers are building tech platforms or partnering with software companies to transform the experience for customers and develop new innovative capabilities (such as predictive maintenance) to better serve customers. The entire retail and supply chain ecosystem now expects greater innovation, visibility, connected systems, and automated real-time communication. Manufacturers that can't meet that expectation will be left behind for those that can. It requires a supple, agile ecosystem.

Nike® offers a product called, Nike By You, where customers customize their own shoes. To make this possible, Nike has the tech and manufacturing capacity to customize, assemble, and produce these shoes individually. This on-demand manufacturing capacity creates a new value chain and differentiates the company from competitors. Nike has integrated, automated systems that rely on real-time data and processes that efficiently coordinate their shoe production.

How manufacturing has responded to change

Manufacturers are working hard to address and embrace these trends; creating competitive advantage through innovation and leveraging advanced technology. Here are some of the ways they're responding.



Innovative product design and engineering

Real-time data is informing product design and engineering, driven by richer customer and IoT feedback. Data and automation are also powering more interactive engagements between end consumers and manufacturers.

Manufacturers will continue innovating to leverage new customer experiences, either direct-to-consumer or through the retail industry.

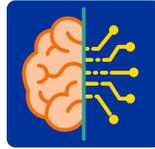


Visible supply chain management

Cloud-based, integrated order management systems and inventory management systems help connect every member of the supply chain while providing real-time visibility. This enables anyone in the supply chain to easily track inventory status. Automation enables rules to trigger actions or alerts so that disruptions or delays can be managed before they impact production or customer satisfaction. Visibility across the supply chain mitigates risk and increases the ability to meet customer expectations.

This global equipment manufacturer has more than 200 independent dealerships around the world. The company uses SnapLogic to integrate data and IoT, which enables them to implement predictive maintenance. Equipment is embedded with call-home streaming data technology via IoT sensors that track information such as battery life.

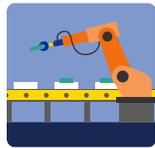
Based on data, the manufacturing company is able to monitor when forklifts at one of their dealerships are reaching end-of-battery life, which triggers demand forecasting and production scheduling. The automated predictive maintenance enables them to send batteries to their dealers without the dealers having to request them. The streaming data is sent to a data repository where it undergoes strategic analysis to help the company continuously improve its processes and customer experience.



Automated demand forecasting and production scheduling

In order to meet customer expectations, manufacturers need to accurately forecast demand. Integrated data and systems are able to track connected customer inventory and sales volumes autonomously, and inform production of upcoming demands. Manufacturers that integrate with their suppliers in real-time can create an automated purchase order process that ensures inventory or material demands are met according to need.

Cognitive supply chains use AI and automation to track supply and demand and automatically order more inventory from available suppliers as it reaches certain thresholds. Automated demand forecasting then triggers automated production scheduling based on certain rules or thresholds. This creates a more stable, predictable supply chain and ensures that demand can be met.



Predictive maintenance and operations

Manufacturers are increasingly applying predictive maintenance and operations protocols that automatically notify end users so that issues can be proactively addressed. Applied internally, this keeps production moving smoothly and decreases the chance of unexpected disruption to equipment or systems. Applied to consumers, such as in the auto industry, it shifts the responsibility for maintenance notifications back to the manufacturer.

Insights from predictive analytics can inform demand forecasting, as well, for example, when IoT and performance data on products relays end-of-life or time for replacement data that can then trigger production before the consumer even knows it needs to be replaced. Meeting customer needs before they know they have them is one of the distinct advantages of predictive analytics in manufacturing.

A major energy company was carved out of a conglomerate and inherited multiple legacy applications, with numerous integration technologies. With hundreds of interfaces, the company needed to streamline its integration strategy.

Working with SnapLogic partner and IT consulting and service provider Infosys, the energy company created standardized integration patterns for different types of interfaces. Then they could access data from legacy apps via APIs and point-to-point interfaces.

Now that the data is available via SnapLogic, the entire organization can use it for innovation and product development. They were able to harness valuable data that had been siloed in legacy applications to build new products faster. And, they reduced costs by moving from multiple integration technologies to the SnapLogic all-in-one platform.

Where to start

The importance of data and technology means that IT has a central role in determining how manufacturing will rise to meet these trends and shape the future of the industry. The following are ways IT is responding.

Platform engineering

As we mentioned, manufacturers are increasingly becoming data companies that make things. With so many moving parts, applying a platform engineering approach that standardizes your tech stack and builds common, configurable tools to be used across the organization makes sense. Platform engineering will create stability, reduce wasted tech stack cost, prevent developers from reinventing the wheel, and bring a level of repeatable development that is not lost when developers leave the company.

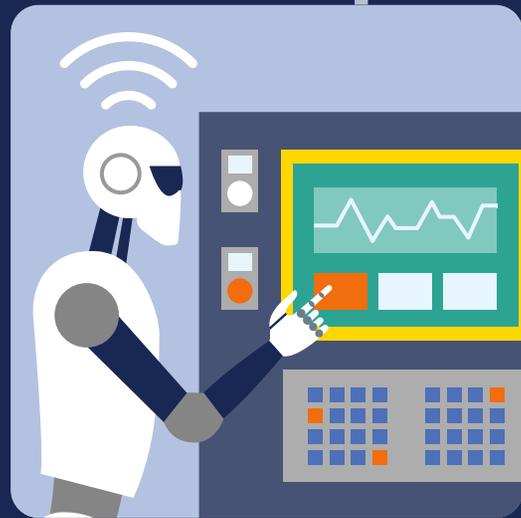
Building services and tools on your platform will simplify IT and give your company the infrastructure it needs to innovate faster and more efficiently.

Continuous customer experience

Continuous integration/continuous delivery (CI/CD) is a core concept of DevOps. Continuous customer experience follows the same principle. By automating processes, deploying predictive analytics and alerting, and making continuous adjustments, customer experience can become a smooth continuous experience.

AI and automation

Artificial intelligence and automation are required for predictive analytics, customization, IoT, robotics, communication, and streamlining processes, applications, and systems. Modern manufacturers cannot succeed or meet customer expectations without them.



Real-time integrations

Integration is the common core solution that makes every response to these trends possible and enables possibilities not yet imagined. Without integrating data, applications, systems, and platforms, you cannot create the connected, supple, transparent ecosystem that manufacturers need to be a part of today.

Integration starts with determining what needs to be connected. While it's possible to integrate on-premises and cloud systems, cloud systems are designed to easily integrate and be accessible. Application programming interfaces (APIs) are the most common access point, and an extract-transform-load (ETL) or extract-load-transform (ELT) process has been the typical manual way to integrate. Manual integrations are time-consuming, laborious, and require long-term vigilance to maintain and update.

You can simplify integrations by using an intelligent automation platform that automates the integration process for you.

Automated integration with SnapLogic and Infosys

Modern IT infrastructure in a dynamic industry like manufacturing is the digital backbone for the company's success. And it can be effectively and sustainably achieved – with the right team and the right tools.

[The SnapLogic Intelligent iPaaS](#) is a simple no-code/low-code way to automate your application and data integrations. As an integration platform, it enables users to easily build integration pipelines with [pre-configured Snaps](#) to the most popular applications and data sources or to custom-build integrations.

As one of SnapLogic's premier consulting partners, [Infosys](#), one of the top IT Services organizations in the world, can help build this Digital Backbone for enterprises using SnapLogic Intelligent iPaaS and design, develop and deploy SnapLogic projects of all sizes and complexities.

An introduction to Digital Backbone (infosys.com)

<https://www.infosys.com/services/api-economy/documents/digital-backbone2.pdf>

For more information on how this partnership can help your organization drive digital change, reach out to us at snaplogic.com/contact-us.



About SnapLogic

SnapLogic delivers an AI-powered integration platform that integrates, automates and orchestrates the flow of data across the enterprise. SnapLogic brings together multiple technologies to connect complex enterprise systems and break down data silos to improve the way data flows through the organization. This unified approach delivers faster insights that boost user productivity, accelerate innovation, and drive business results. Learn more at snaplogic.com.

About Infosys

Infosys is a global leader in next-generation digital services and consulting. Over 300,000 of our people work to amplify human potential and create the next opportunity for people, businesses and communities. With over four decades of experience in managing the systems and workings of global enterprises, we expertly steer clients, in more than 56 countries, as they navigate their digital transformation powered by the cloud. We enable them with an AI-powered core, empower the business with agile digital at scale and drive continuous improvement with always-on learning through the transfer of digital skills, expertise, and ideas from our innovation ecosystem. We are deeply committed to being a well-governed, environmentally sustainable organization where diverse talent thrives in an inclusive workplace.

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