



TOP 5 TRENDS IN MANUFACTURING



CHAMPION
GUIDES

EBOOK

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INTRODUCTION

Economic upheaval and global and regional crises are causing supply chain disruptions, demand volatility, pricing fluctuations, and labor shortages. As a result, there are challenges in nearly every step of the supply chain process—from planning and sourcing decisions to managing inventory, handling logistics, fulfilling orders, and more. At the same time, advanced technologies are revolutionizing the industry, from AI and machine learning to automation and robotics.

Data analytics is a critical driver to enable manufacturers to overcome today's challenges and unlock new opportunities to stay ahead of competition. Data is generated at every point of a supply chain, from the production of raw materials to the delivery of the finished product to the customer. But manufacturers still struggle with siloed data across the enterprise and shop floor and data collaboration between customers, suppliers, and partners, leading to fragmented insights.

The five trends in this report show how it is imperative to adopt a cloud solution that eliminates data silos, enables secure and seamless data sharing, and implements advanced analytics. Manufacturing companies that do so can build a data foundation, power smart manufacturing, improve supply chain performance, and increase customer satisfaction.

TREND #1

DATA ANALYTICS DRIVES NEW, EMERGING TECHNOLOGIES

Industry 4.0 and smart manufacturing are here to stay. Advancements such as AI, machine learning, automation, robotics, digital twins, and Industrial IoT can help companies maximize factory throughput, offset labor shortfalls, predict maintenance needs, and improve product yield and quality.

To enable smart manufacturing, organizations need to break down data silos across the value chain so they can collect, analyze, and share the vast amount of data generated internally, as well as by partners, third parties, and consumers. The foundation of these data capabilities is a modern cloud platform with data pipelines that can ingest both information technology (IT) and operational technology (OT) data at scale.

IT and OT have traditionally been independent and siloed in industrial organizations. Now, companies that converge the hardware and systems that control shop floor processes with business systems and infrastructure are realizing synchronized processes across the value chain. These highly connected enterprises power smart manufacturing, where information flows in near real time between production and enterprise systems. Leaders can use technology like edge computing to communicate data back to IT systems for efficient monitoring and analysis.

By 2025, 95% of decisions in large organizations that currently use data will be at least partially automated.¹

TREND #2

DATA VISIBILITY POWERS SUPPLY CHAIN RESILIENCE

With major political and economic disruptions roiling the manufacturing industry over the past few years, supply chains have looked more like supply roller coasters. As a result, industry leaders are moving away from linear, lowest-cost only supply chains and toward multi-dimensional supply networks that better balance risk, speed, and cost.²

But unplanned supply chain risks will always be present, with materials access, customer demand, and pricing likely to continue to fluctuate. To navigate these risks, leading manufacturers are applying these multi-dimensional supply networks that can help them weather the future disruptions and adapt more quickly. Data visibility is a key component of high-performing and highly resilient supply chains because it enables manufacturers to gain a comprehensive view of historical and real-time data, and use that data in advanced analytics to predict and plan for future disruptions. These disruptions could include labor shortages, raw material scarcity, delayed shipments, extreme weather events, and more.

Armed with analysis and insights from this visibility, industry leaders can make better decisions about operations and shift strategies accordingly.



Only 6% of companies report full visibility on their supply chain.³

TREND #3

DATA SHARING CREATES NEW REVENUE STREAMS

Manufacturers who can provide their own valuable data to external parties in a responsible, secure manner are creating new sources of revenue. There are several types of data manufacturers could monetize, such as customer behavior and preferences, aggregated customer usage patterns on products, supply chain operations and logistics, and product performance and quality. Potential buyers could include companies in related industries looking to expand their operations or improve their processes and data brokers who collect and sell data to other businesses.

But traditional methods of data sharing, which involve copying or moving data between multiple entities and systems, loading, transforming and integrating this data, are complex, time-consuming, and risky. Industrial companies must be able to keep data secure as they share it externally to protect IP and sensitive information. And for that data to create value when shared externally, it must be easily curated according to demand and updated at the speed needed to support decision-making processes. Leading manufacturers are understanding that by using a secure data marketplace to share and monetize their data, their data is not just a byproduct of their operations, but an asset.



According to Gartner, “To succeed in promoting data sharing and increasing access to the right data aligned to the business case, [the firm must] collaborate across business and industry lines. This will accelerate buy-in for increased budget authority and investment in data sharing.”⁴

TREND #4

DATA INTEGRATION INCREASES OPERATIONAL EFFICIENCY

In the era of increasing costs and decreasing margins, optimizing resources such as time, labor, funding, equipment, and inventory is vital. Leading manufacturers are creating operational efficiencies in a variety of ways:

- **Utilizing new technologies such as robotics and automation to manage labor shortages and remove bottlenecks**
- **Creating multi-dimensional supply chains to increase speed and time to market**
- **Nearshoring supply chains to reduce risk and improve control, and to better meet regulatory requirements**

Efficient operations involve reporting on and analyzing historical data to make better business decisions. And this type of in-depth analysis requires the integration of data from multiple sources—suppliers, vendors, customers, external parties, and a variety of internal sources—demonstrating the need for strong data governance structures in one place.

But data integration is difficult when silos persist. Massive volumes of data are being generated from machine sensors, supplier inventories, human resources, and financial information, to name just a few. Data quality is crucial, as inaccurate or out-of-date information can increase operational inefficiencies. Companies need to collect and process structured, semi-structured, and unstructured data into a single, clean source of truth that can be securely accessed by various entities, systems, and applications.



TREND #5

DATA MOBILIZATION TURNS RISKS INTO OPPORTUNITIES

Governments and consumers are continuously prioritizing corporate responsibility and sustainability in their dealings with businesses. Manufacturers that don't factor sustainability and ethical sourcing practices into their processes run the risk of legal, brand, and economic repercussions.

Governments offer economic incentives to companies that show progress in areas of job growth and sustainability, and consumers reward companies that can show positive ESG data. To manage the risks and reap the rewards, leading manufacturers are incorporating ESG principles into their businesses. But the data to track activities stemming from those principles is often siloed across geographic regions and organizational boundaries. ESG data can reside in the systems used by finance, HR, manufacturing, engineering—virtually any team in the company—and throughout the supply chain.

The mobilization of accurate data is at the core of this problem. As more companies adopt a modern data cloud approach to data management and converge IT/OT systems, it will be easier for manufacturers and suppliers to share data and agree on how to track, measure, and report ESG data. Manufacturers can also apply ESG scores of suppliers and vendors as they make decisions about business partnerships.



87% of investors surveyed by PwC say they think corporate reporting contains sustainability claims that are unsupported by data.⁵

LEARN MORE

For information on how your company can unlock the power of manufacturing data, visit [Snowflake for Manufacturing](#).





ABOUT SNOWFLAKE

Snowflake enables every organization to mobilize their data with Snowflake's Data Cloud. Customers use the Data Cloud to unite siloed data, discover and securely share data, and execute diverse analytic workloads. Wherever data or users live, Snowflake delivers a single data experience that spans multiple clouds and geographies. Thousands of customers across many industries, including 573 of the 2022 Forbes Global 2000 (G2K) as of January 31, 2023, use Snowflake Data Cloud to power their businesses.

Learn more at [snowflake.com](https://www.snowflake.com)



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CITATIONS

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