

Top 10 Supply Chain Trends

2023

Introduction

Industries across the globe continue to battle the Great Supply Chain Disruption. They're striving to optimize execution, diminish risk, improve dexterity and identify ways to gain a real competitive advantage. To achieve these goals, it will be essential to create data-driven networks, maximize the latest digital transformation capabilities, prioritize risk management and resilience, streamline logistics, and much more. Getting ahead of these and other key trends enables supply chains to proactively shape a successful, sustainable future. Read on to discover what's coming in 2023 and beyond.

New trends and changes, year over year

2023 trend ranking	Change from 2022
1 Big data and analytics	None
2 Digital supply chains	▲5
3 Supply chain risk and resilience	▲3
4 Artificial intelligence and machine learning	▲6
5 Robotics	New in 2023
6 Data security and cybersecurity	▲2
7 Circular and sustainable supply chains	▲5
8 Essential goods supply chains	New in 2023
9 Smart logistics and the internet of things	New in 2023
10 Logistics vulnerability	New in 2023

Digital supply chain transformation themes in 2023

Research reveals numerous themes related to the importance of digital supply chain transformation in the coming months.

Key takeaways include the following:

- Collection of data, advanced analytics and automation are pillars of future supply chains.
- Using smart logistics solutions, based on the internet of things and next-generation robotics, is a focal point of future supply chain design.
- Artificial intelligence and machine learning will have a much greater impact, as processing huge datasets in real time demands these capabilities.
- As the amount of data grows, treating it as an asset and effectively securing it become vital.
- Risk management and resilience remain essential to the future of supply chain.
- Circular and sustainable supply chains, as well as supply chains dedicated to essential goods, must be prioritized — especially after the last two years of disruption.
- The continuous logistics disruption will drive the need for constant master data maintenance for logistics parameters and inventory levels.

1

Big data and analytics

Big data, analytics and automation are enabling organizations to mitigate disruption via digital, agile supply chain management. The implementation of predictive and prescriptive analytics — as well as advances in big data, algorithms and robotics — will have broad-reaching effects. Those organizations that harness the power of these solutions will benefit from greater visibility, synchronized planning and execution, data-driven decision-making, predictability, agility, and profitability.



2

Digital supply chains

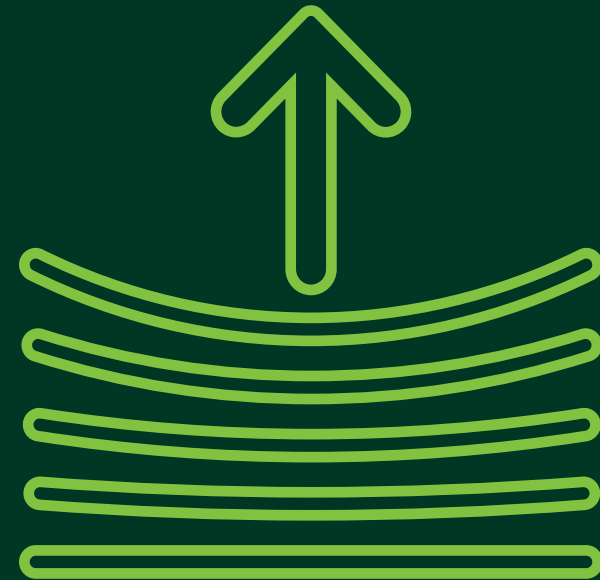
Digital supply chains will continue to be essential elements of numerous trends on this list, including risk, resilience and security. Successfully digitizing supply chains requires large-scale sensor implementation via the internet of things; digital twins; shared internal and external interfaces, such as cloud-based networks; and process automation and verification. Best-in-class organizations will adopt digital supply chain capabilities or be left behind by nimbler and more efficient competitors.



3

Supply chain risk and resilience

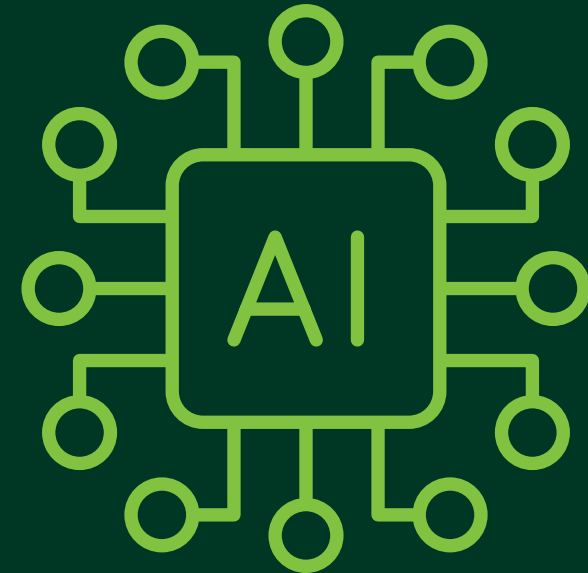
Supply chain risk and resilience require collaboration among global networks that are highly complex and interconnected. Key strategies include diversification of suppliers, production capabilities and transportation processes, as well as finding alternative materials and nontraditional partnerships. Many supply chains will become more compact and localized. Resilient supply chain design will also be critical to mitigating adverse events faster than the competition, providing excellent customer service, and generating value and market share.



4

Artificial intelligence and machine learning

Artificial intelligence and machine learning, key components of numerous trends on this list, are becoming a driving force for maximizing and enabling systems thanks to interoperability across various business landscapes. They are foundational to integrating people, processes and systems in a wide array of operational environments. The technology-driven evolution to industry 5.0 — which involves a more collaborative approach, as well as partnerships between humans and robots — will have significant impact on numerous supply chain functions.



5

Robotics

Labor shortages, supply disruptions and demand surges are compelling organizations to tap into robotics — and, as a result, intelligent robotics are transforming supply chains. Driven by rapid technological advancements and greater affordability, both mobile and stationary robots will assist workers with warehousing, transportation and last-mile delivery tasks. Safer, more efficient warehouses, with fewer people in them, will drive down costs. Although the initial capital investment will be high, the cost savings are primed to be dramatic.



6

Data security and cybersecurity

The more digital supply chains become, the more vulnerable their global networks are to cyberattacks. This interconnectedness means supply chain partners can inadvertently expose each other and their customers to privacy breaches, identity theft and worse. Expect greater collaboration when safeguarding networks, devices, people and programs. In addition, more organizations will choose to invest in redundancy, firewalls, advanced anti-hacking technologies and employee training.



7

Circular and sustainable supply chains

The traditional linear business model of take, make and throw away is an economic dead-end for the earth, raises raw material costs, and increases the likelihood of shortages and volatility. Meanwhile, many conflicts and wars evolve around access to rare minerals, energy and commodities. As supply chains touch every part of our global ecosystem, circular economies that prioritize responsible, restorative and regenerative aspects are imperative and singularly consequential.



8

Essential goods supply chains

Supply chain managers must support essential goods producers in order to move product; get any surpluses to humanitarian organizations; and help retailers, governments and non-governmental organizations connect with capable suppliers. Further, there will continue to be growth in temperature-controlled goods fulfillment, creating new challenges for picking, packaging and transporting shipments with temperature integrity via special processes, innovative cold-chain packaging and optimized infrastructure.



9

Smart logistics and the internet of things

Insights and agility prove to be key competitive advantages in supply chain. The internet of things provides near-real-time transparency and information about product location, speed of movement, estimated arrival and local atmospheric conditions. This is the foundation of smart logistics, as it illuminates delays, disruptions and potential quality degradation. The insights gained will enable organizations to curtail costs, raise service levels and optimize networks.



10

Logistics vulnerability

Transportation planning systems rely on supply chain stakeholders collaborating in an integrated and flexible way. This enables them to dynamically adapt their various transport modes based on near-real-time information. The benefits include improved visibility, integration and flexibility. Logistics organizations must create the conditions necessary for a seamless interaction among multiple transportation networks and their digital replicas. They also should be rethinking the physical connections among warehouses, highways, ports, waterways and air transportation.



The sensing process

1

Create a deep and diverse team of supply chain subject matter experts representing a variety of industries, academic institutions, geographies and personal experiences.

2

Identify resources from a broad collection of high-quality research reports and articles, Google analytics, surveys, subject matter expert knowledge, and more. This includes 183 citations, more than 2,000 pages of research and 125 unique resources. The list is consolidated, and any gaps are filled.

3

Assign each team member a set of resources from which to extract trends. For each trend identified, a brief explanation of its relevance to the future of supply chain is written.

4

Rank trends into a top 10 list through discussion followed by a vote of each trend's likelihood and its potential impact, using a 0-10 scale. Along the way, 115 subtrends are eventually narrowed down to the top 10.

Trend impact and likelihood



Criticality of final votes

Likelihood x Impact = Criticality

Trend ranking	Score
1 Big data and analytics	1,504
2 Digital supply chains	1,476
3 Supply chain risk and resilience	1,392
4 Artificial intelligence and machine learning	1,368
5 Robotics	1,326
6 Data security and cybersecurity	1,288
7 Circular and sustainable supply chains	1,251
8 Essential goods supply chains	1,157
9 Smart logistics and the internet of things	1,109
10 Logistics vulnerability	1,069

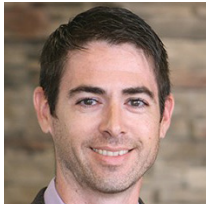
Trend ranking	Score
11 Customer-centricity	1,057
12 Global-regional-local networks	1,053
13 Talent management	998
14 Autonomous vehicles	880
15 Self-replenishing supply chains	793
16 Wearable devices for near-real-time transactions	791
17 Blockchain	757
18 Personalized products and late-stage customization	692
19 Government-induced supply chain design	666
20 3D printing	618

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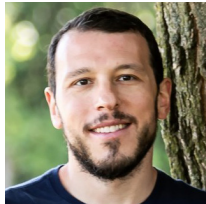
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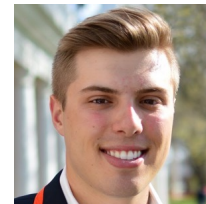
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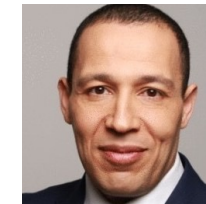
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