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Gartner for Supply Chain

The Top 8 Supply Chain Technology Trends

Benchmark your investments against new data on the most important emerging technologies for supply chains

How are supply chain technology trends affecting the CSCO's investment priorities?

Gartner surveyed more than 500 supply chain professionals to better understand supply chain technology focus, initiatives, value and challenges, including:

- The types of technology used today in supply chains

- The most important emerging technologies for supply chains

- How supply chain organizations leverage technology

- The business outcomes driven from supply chain technology investment

Figure 1 shows that 22% of the supply chain professionals surveyed describe their organization's use of technology as highly integrated/collaborative. The organization has implemented multienterprise process orchestration with innovative technology tools to enable collaborative networkwide value creation.

At the same time, 18% of survey respondents indicate their organization operates at the opposite end of the spectrum: Their organization operates a highly fragmented applications portfolio with many stand-alone applications on different technologies and from multiple vendors/sources.

Most of the supply chain professionals surveyed (38%) indicate their organization is improving technologies to support end-to-end processes, and that their organization has benefited from improved data rationalization and process integration capability.

Big data, the Internet of Things (IoT) next to advanced analytics and intelligence are considered the most important emerging technology areas for supply chains (see Figure 2). Gartner research shows that through 2024, 50% of supply chain organizations will invest in applications that support artificial intelligence (AI) and advanced analytics capabilities.

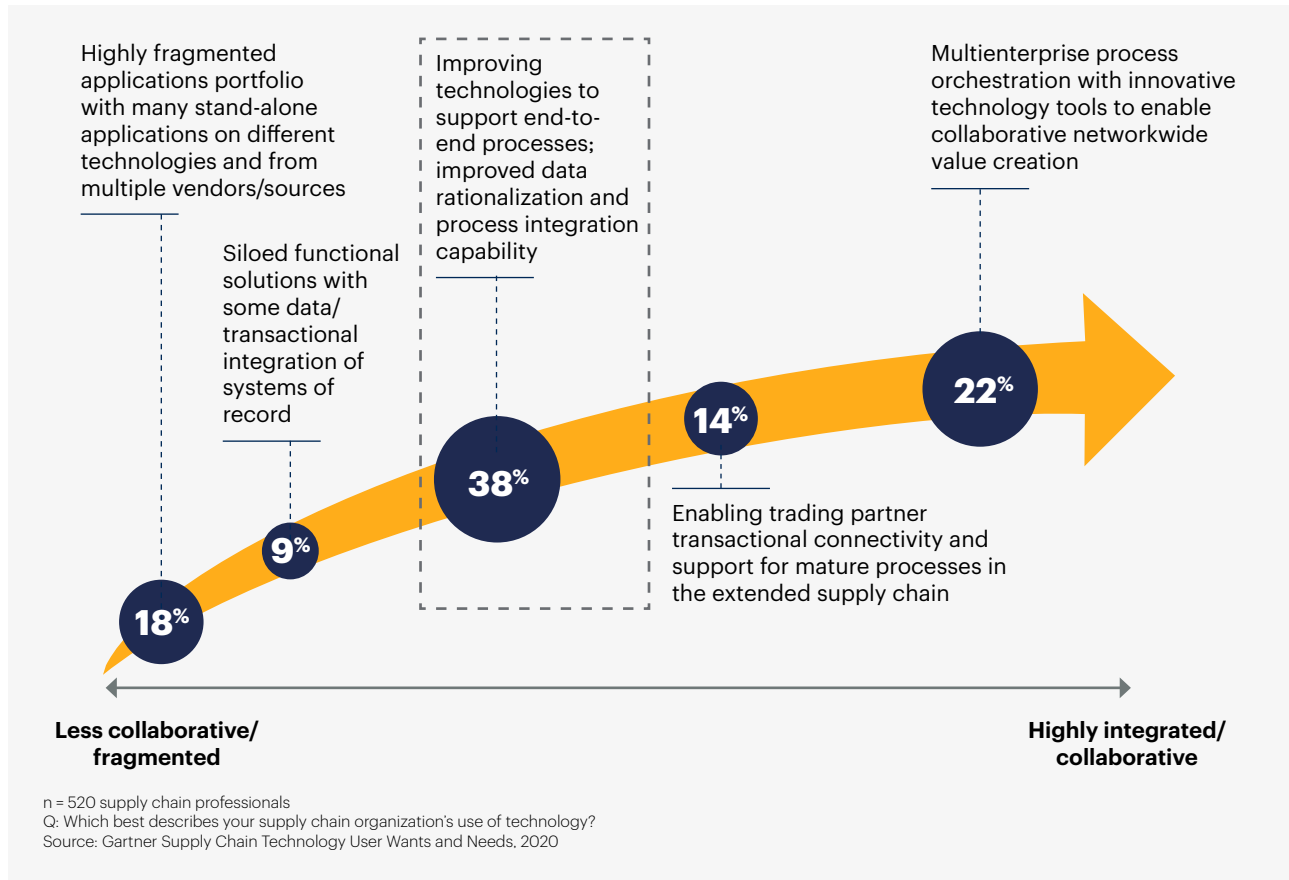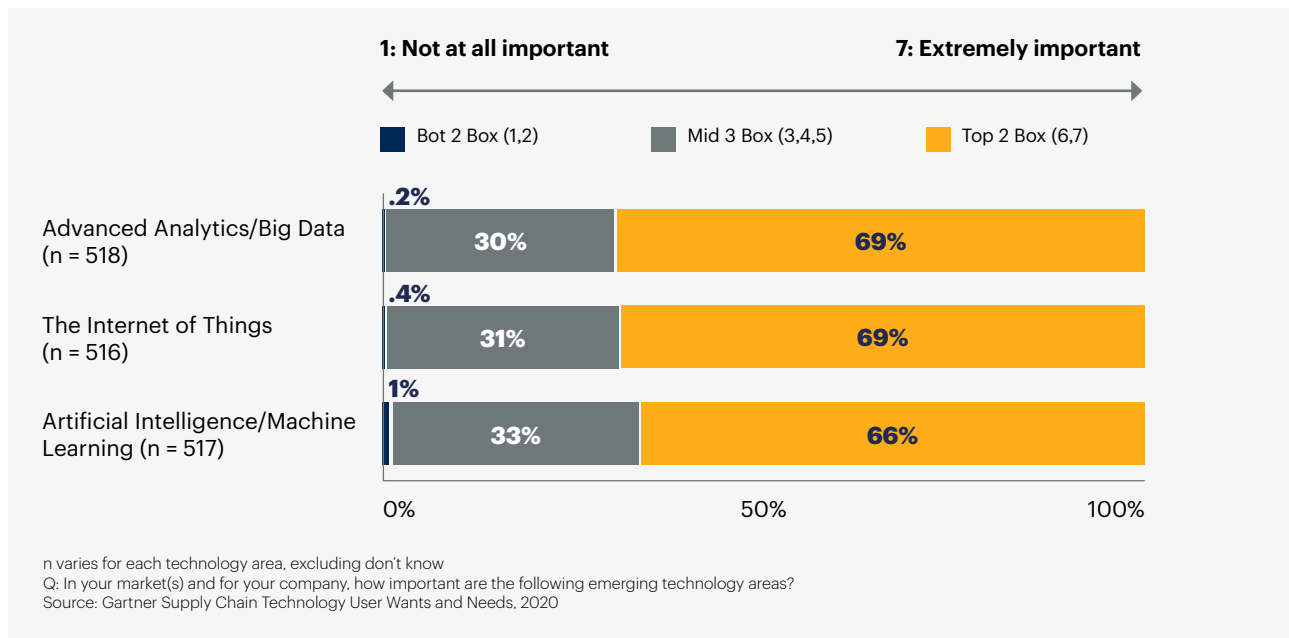Gartner

Figure 1. Supply Chain Use of Technology

Highly fragmented applications portfolio with many stand-alone applications on different technologies and from multiple vendors/sources

Siloed functional solutions with some data/transactional integration of systems of record

Improving technologies to support end-to-end processes; improved data rationalization and process integration capability

Multienterprise process orchestration with innovative technology tools to enable collaborative networkwide value creation

18%

9%

38%

14%

22%

Enabling trading partner transactional connectivity and support for mature processes in the extended supply chain

Less collaborative/ fragmented

Highly integrated/ collaborative

n = 520 supply chain professionals
Q: Which best describes your supply chain organization's use of technology?
Source: Gartner Supply Chain Technology User Wants and Needs, 2020

Figure 2. Importance of Emerging Technology Areas

1: Not at all important

7: Extremely important

■ Bot 2 Box (1,2)   ■ Mid 3 Box (3,4,5)   ■ Top 2 Box (6,7)

	.2%	30%	69%
Advanced Analytics/Big Data (n = 518)	.2%	30%	69%
The Internet of Things (n = 516)	.4%	31%	69%
Artificial Intelligence/Machine Learning (n = 517)	1%	33%	66%

0%   50%   100%

n varies for each technology area, excluding don't know
Q: In your market(s) and for your company, how important are the following emerging technology areas?
Source: Gartner Supply Chain Technology User Wants and Needs, 2020

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What are the top supply chain technology trends?

These eight supply chain technology trends will help to accelerate supply chain digital transformation over the next several years:

1. Hyperautomation
A combination of technologies — artificial intelligence (AI), machine learning (ML), smart machines, robotic process automation (RPA), etc. — that can facilitate or automate tasks and activities at scale, that originally required some form of human judgment or action

2. Digital supply chain twin
A digital — dynamic, real-time and time-phased — representation of the various associations between the data objects of the physical (and often multienterprise) supply chain, as a basis for local and end-to-end aligned decision making

3. Immersive experience and applications
The utilization of virtual reality (VR), augmented reality (AR) and mixed reality (MR) to enable users (including customers and employees) to perceive the virtual world through an advanced experience

4. Edge ecosystems
The combination of edge computing and edge data processing, delivered through networks of human resources, devices, smart machines, sensors and computing systems that allow people to make informed, reliable, secure and agile decisions at the edges of enterprises

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What are the top supply chain technology trends?
(continued)

5. Supply chain security
The enforcement of security spanning physical levels (devices, machines, products, operations infrastructure and assets) as well as information and digital data (customer information, intellectual property, proprietary coding, transactions and personal data)

6. Environmental, social and governance (ESG)
Corporate performance and evaluation measures that assess the robustness of a company's governance mechanisms and its ability to effectively manage its environmental and social impact

7. Embedded AI and analytics
Software capabilities that deliver real-time reporting, interactive data visualization and/or advanced analytics and intelligence — including ML, predictive and prescriptive analytics — directly into an enterprise business application

8. Augmented data intelligence
A tool consisting of existing and new technologies combined with near-real-time data from the ecosystem, which facilitates advanced data processing and allows for the delivery of insightful information, predictions and suggestions that are relevant and adaptive to user experiences toward more connected supply chain data

Recommendations for supply chain leaders

01 Use a robust process to identify, evaluate, select and deploy innovative technologies.

02 Include influencing factors like maturity, risk tolerance and industry in your process.

03 Recognize that technologies are often sequenced and bundled together to deliver outcome.

04 Select those technologies that have a positive impact on business performance.

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Actionable, objective insight

Position your supply chain organization for success. Explore these additional complimentary resources and tools on supply chain technology:

Playbook

Three-Step Plan for Supply Chain Digital Transformation

Blend the physical and digital supply chains to compete in today's market.

Download Playbook

Tool

Business Case for Supply Chain Digital Transformation

Demonstrate the value of supply chain digital transformation, and surface the risks.

Download Tool

Webinar

CEOs Expect Supply Chain Leaders to Balance Optimization and Business Growth

Align your digital supply chain roadmap with your CEO's definition of digital.

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Report

Nine Skills That Fuel Digital Supply Chain Planning

Focus your talent management initiatives on digital supply chain skills.

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