

The features and trends of food supply chains

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Abstract: *Industries across the globe continue to battle the Great Food Supply Chain Disruption. They are 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 overcome today's intense labor challenges, maximize the latest digital transformation capabilities, streamline sourcing and inventory management, prioritize customer centricity, and much more. Getting ahead of key trends will enable food supply chains to proactively shape a successful, sustainable future with energy efficiency and less food waste.*

A smooth modern supply chain requires the high skills of workers and managers. Essential skills include software use, accounting, heavy machinery operation, and the use of robots. Managers need quick decision-making skills including AI; increased flexibility; ecological thinking, and behavior; awareness of the circular economy.

I. 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 overcome today's intense labor challenges, maximize the latest digital transformation capabilities, streamline sourcing and inventory management, prioritize customer centricity, and much more. Getting ahead of key trends will enable supply chains to proactively shape a successful, sustainable future.

Among the items first and foremost is supply chain logistics, which deals with the sourcing and delivery of essential materials and products. These are followed by sourcing, order processing, warehousing, material handling, inventory control, packing, inbound transportation, outbound transportation, fleet management, logistics network design, supply/demand planning, and management of third-party logistics service providers. ²



II. The features and trends of food supply chains

1. A smooth modern food supply chain requires highly qualified management and employees.

Logistics business professionals use their skills to gather data, find areas for improvement within the supply chain and ensure production operations are executed accurately. Drivers that affect supply chain performance are production, inventory, location, transportation, and information.

The logistics cycle is formed by the activities: purchasing, transport, and delivery; warehousing - receiving and storage. According to the Chartered Institute of Logistics & Transport UK, 2019

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Elements of logistics are: delivering the right product, in the right quantity, in the right condition, to the right place, at the right time, to the right customer, at the right price.

Logistics makes extensive use of digital technology to monitor and manage the supply chain, inventory, transport, goods movement, customer database, customer behavior, and warehouse utilization. Any delivery process can only function if an order processing system is in place.

HR must have basic, technical, leadership, and soft skills

Technical skills are acquired through education or practical experience. These are concrete, measurable, specific abilities. Proficiency in basic skills can be demonstrated through relevant certifications, portfolios, and skills assessment tests.

Good logistics professionals need to communicate effectively with a wide range of people - from important customers to drivers, suppliers, colleagues, and management. To do this effectively, they must have strong interpersonal skills that can be used to build relationships.

Logistics is a limited, discrete part of the larger, collaborative supply chain network.

Both warehousing and logistics perform functions within the supply chain. On the one hand, warehousing focuses on the safe storage of goods in a building, while logistics is the functional aspect of storing and delivering goods stored in a warehouse. The logistics industry covers the distribution of tangible goods, services, and information. In keeping with its complexity, occupations in this field are diverse, ranging from purchasing managers to drivers and machine operators.

Technical skills imply knowledge of the tools and machines that staff work with and which they master after a certain time. Soft skills are the interpersonal abilities to work with people that can be used within the team or with customers. They include communication and adaptability. The soft skills needed by a logistics manager are, in addition to communication skills, also leadership, and management skills. Supply chain managers must have knowledge of information technology and automation; knowledge of economics and market dynamics; an understanding of the cost of service; and the ability to get the best from people.

Perishable goods in logistics require special handling. These are products such as meat, fish, dairy products, fruit and vegetables that deteriorate over time due to environmental conditions.

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For a successful career in this complex sector, problem-solving skills; crisis management skills; timeliness/accuracy, data analysis; technological aptitude for digital resources, such as GPS tracking software and inventory programs; inventory management software, adaptability as customer needs and system processes change rapidly; attention to detail; organization and resource management; teamwork; people skills and customer service, interpersonal skills, such as patience, empathy, and actively serving Other tasks performed are distribution management, product returns; invoice preparation, customs documentation, packing and uniforming, inventory. Important qualities are spotting and correcting mistakes as soon as possible and learning from experience; quality assurance; key performance indicators in logistics management; responsibility to staff, nature, and society - striving to reduce food waste; formulating new ideas and strategies to deal with inefficient processes. 4

Current trends in logistics and transport management and their relationship to supply chain management. Logistics makes extensive use of digital technologies to monitor and manage supply chain, inventory, transportation, goods movement, customer database, customer behavior, and warehouse utilization. Core IT skills make professionals in this field indispensable in performing day-to-day tasks - skills such as digital sourcing, networking, digital analysis and change management, warehouse management systems, negotiation, project management, industry knowledge, and macro analysis skills.

The technical skills 5 can be categorised in several different ways, with specific knowledge in each group. Programming Languages. Programming Skills; Microsoft Suite; Operating Systems; Cloud Computing; Technical Writing; Social Media Skills; with Artificial

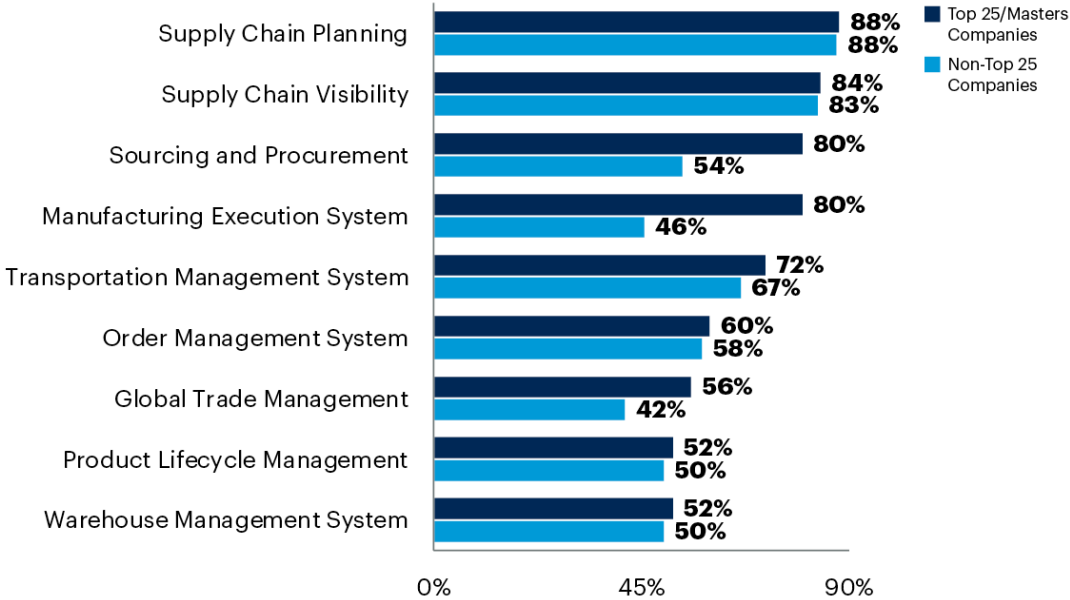
Intelligence.Technology Skills relevant for 2023:1. HTML;2. Excel;3. SQL;4. GIT;5. Low code development platforms.

2. Planning and Visibility in food supply chain

People tend to focus mostly on inventory and logistics when they think of supply chain planning. But of course, it’s so much more than that. For physical products and manufacturing, it starts way back with managing the suppliers who grow and mine raw materials, and goes right up to the moment an item is delivered to a shelf or a front door – and even beyond, to returns, recycling, and reverse logistics. Supply chain planning is also informed by consumers at every level: their shopping habits, their reviews and feedback, and their ever-changing shopping behaviours.

Visibility will be a key objective for organizations under pressure to achieve true transformation, satisfy customers and capture new markets. People are willing to pay more for ethical and responsible business processes, and this will be a catalyst for investment in supporting technologies. For instance, as the ability to track and trace goods to the source is increasingly expected by consumers, the internet of things will continue revolutionizing real-time visibility. Look for new business models and heightened trust and collaboration within and beyond organizational boundaries.

Technologies Leading Supply Chains Are Pursuing Capabilities



(Figure 1)

Planning and Visibility are the most important capabilities in supply chain (figure 1).With good planning the cost for supply chain decries consumer prices. Visibility increase quality of the of the service. The combination of good planning and visibility, the client receives low price product in the exact time and condition.

3. The rise of e-commerce

The rise of e-commerce is perhaps the most obvious and commonly understood force affecting today's supply chains. All around the world, warehouses are jam packed — some even have products piling up outside their doors. In fact, this incredible demand squeeze represents the longest ongoing expansion peak in five years. E-commerce and omnichannel fulfillment will continue to shape the way organizations identify and establish key priorities, creating challenges with regards to scale and network efficiency while producing new opportunities to gain competitive advantage.

4. Supply chain resilience

Supply chain resilience will continue to require data expertise, novel solutions and strong 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. 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.

5. Supply chain agility

Supply chain agility will be essential to creating flexible networks that can effectively respond to dynamic customer demand and ever-increasing uncertainty. It will be important to proactively identify ways to increase responsiveness through variable cost structures. However, as there is no one-size-fits-all approach, organizations must also foster continuously innovative cultures. The agile supply chains of the future will be those that can react quickly to changes, delays and unexpected events in order to meet customer expectations, outpace the competition and drive growth.

6. Advanced analytics and automation and Digital supply chains.

Advanced analytics and automation will continue to accelerate, helping organizations 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. Specifically, the organizations that harness the power of these solutions will benefit from greater visibility, data-driven decision-making, execution efficiency, predictability and profitability. Of course, all of this hinges on effective data security and governance, as well as a dedication to reskilling employees.

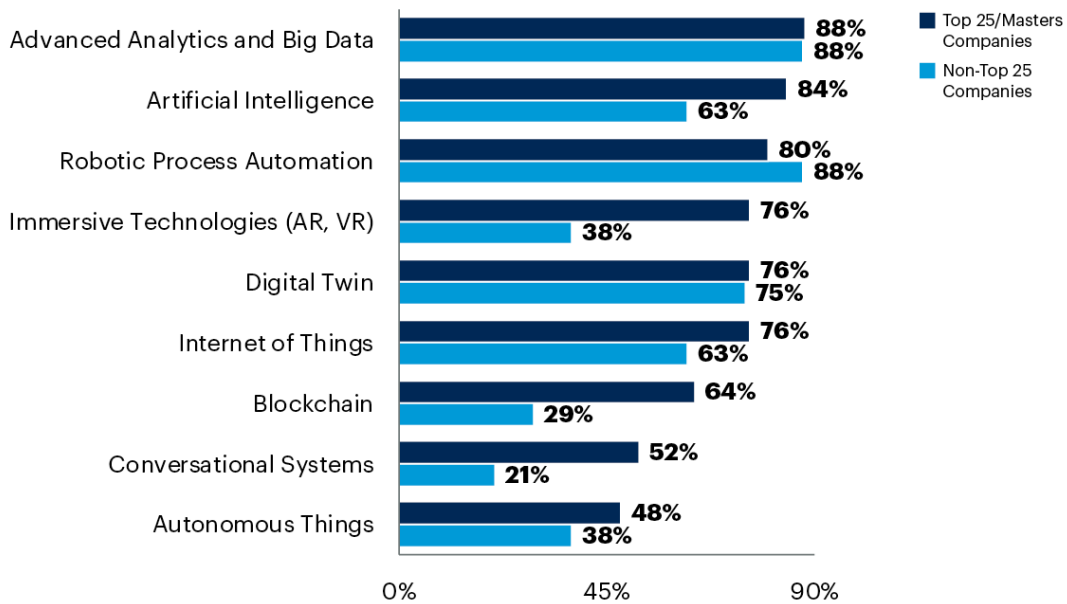
The digitization of supply chains is based on the full application of a wide range of digital technologies - "cloud services", big data - Internet of Things, 3D printing, augmented reality, etc.

The goal of using these technologies is to deliver the right product to the customer as quickly as possible while ensuring reliability and emergency response, while reducing costs and increasing operational efficiency. This is possible through the eight key components of digitization: integrated planning and execution, transparency, intelligent warehousing, effective management of spare parts, effective analytics of supply chains, autonomous transport, procurement, development of enabling factors. Companies that have already understood the need to develop these components will be significantly ahead of their competitors and will ensure their survival and development in world markets.

Until recently, just-in-time was a rule of thumb in supply chain management. The accumulation of resources, intermediates and finished products was considered expensive and inefficient. Instead, companies tried to buy only what they knew they would need to produce and produced only what they knew they would sell. Well-integrated supply chains, abundant and cheap shipping, and data on customer behavior made this work in companies' favor—at least for a while. Then, the pandemic and war led to highly volatile resource prices, rising shipping costs, disrupted supply chains, and major changes in customer behavior. Suddenly having some resources and products in stock doesn't seem like such a bad idea anymore. As of today, digital solutions seem to be the right direction for the optimal future in the food supply chain.

Digital supply chains will continue to be essential elements of numerous trends on this list, including visibility, resilience and agility. Digitized networks use technology to augment workflow and data collection — meaning that this trend has ramifications on both talent and data infrastructures. Successfully digitizing supply chains requires large-scale sensor implementation via the internet of things; shared internal and external interfaces, such as cloud-based networks; and process automation and verification. The adoption of tools such as blockchain, artificial intelligence and machine learning will meaningfully improve decision-making.

Technologies Leading Supply Chains Are Pursuing Applications



(Figure 2)

Implementation of digital products in food supply chain reduce the waste and optimize the process on supply chain management.

7. Combined transport as a solution in transport- From the farmer to the fork.

By its very nature, combined transport represents an effective integration of different types of transport. It is also known as intermodal or multimodal transport. Combined transport is the transport of goods in which at least two types of transport are used. Combined transport provides a significant reduction in the cost of transport due to the consolidation of multiple activities in one operator. Combined transport is the preferred complex solution for manufacturing enterprises due to the perfect ratio between price and quality of the transport service. This also leads to a reduction in the time for delivery of goods to the recipients. The main requirements of the production enterprises to their logistics service providers are price, quality and delivery time. The advantages of combined transport consolidate the perfect combination between price, quality and delivery time.

The strategy of the EU countries regarding combined transport is aimed at its rapid development. It is considered the third most important transport system after road and rail transport for the transport of goods especially over medium and long distances.

The priority development of combined transport is determined above all by the possibility of the most effective combination and use of the advantages of individual types of transport when carrying out freight transport.



8. Customer-centricity

Customer-centricity is on the minds of supply chain professionals everywhere, as consumer expectations continue to expand and — as noted earlier — people demand ethical, sustainable business practices. Managing a successful supply chain will require upskilling talent with greater cross-functional and analytical skills so people have the training to support these new levels of customer-centricity. Those supply chains that find ways to meet today's escalating and intense customer expectations at the lowest cost will prevail.

III. Conclusion.

Circular economies, increased flexibility, environmental stewardship and better employee retention are among the supply chain trends that are trending ⁶. With shipping volumes higher than ever, companies will need to adjust their supply chain operations for greater efficiency, flexibility and cost reductions by taking note of some supply chain trends.

Supply Chain as a Service (SCaaS); Circular Economies - this methodology rewards small suppliers for their commitment to sustainability throughout the process, with the ultimate goal of reducing environmental impacts for an inclusive economy. Flexible supply chains - when done effectively, can help reduce costs, improve service, reduce risk and increase a company's competitive advantage. Focus on last mile supply solutions - in this scenario, the use of artificial intelligence and machine learning will be beneficial and will determine who will be seen as the supply chain leader. Investment in staff retention - companies rely on HR to keep their supply chain running. This is why companies need to invest in people.

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