

Implementing IoT in supply chain management will streamline operations & maximise profits



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Reading time 10 mins

Key Points

- As supply chains become more intricate with multiple touch points and global operations, there is a growing need for real-time visibility, transparency and tracking of goods, components, and assets.
- The Internet of Things (IoT) technology allows you to monitor and track the movement of materials throughout the supply chain—and, more importantly, even after final products have passed into consumer hands and need to be tracked for traceability purposes.
- Rising customer expectations have also played a crucial role in propelling demand: Customers expect faster and more accurate deliveries, and IoT significantly helps to meet these expectations.
- IoT in supply chain solutions is increasingly sought after by managers looking to gain better visibility and control over their operations and assets: Optimised inventory management, reduced losses (e.g., spoilage or damage), increased efficiency, and predictive maintenance of critical equipment and machinery helps to minimise downtime and disruptions.
- These solutions also facilitate seamless integration and communication between stakeholders (e.g. suppliers, manufacturers, distributors, retailers, and customers). This interconnectedness further enhances collaboration and enables faster decision-making.
- Rapid market growth and increased competitiveness have reduced the barriers to entry for small businesses (e.g. implementation costs), making IoT solutions more affordable, accessible, and easier to adopt.
- By leveraging the power of IoT, businesses can transform their supply chains

into highly efficient, responsive, and profitable operations, ensuring long-term success in an increasingly connected and competitive world.

We can help you streamline and optimise your product supply chain for increased efficiency and profitability. Call us to learn more!

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Last updated May 23, 2024

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Supply Chain Management (SCM) is the process of managing the flow of goods and services to and from a business. This includes every step in turning raw materials into final products ready for the consumer market. Investing in IoT in supply chain management is crucial for companies in all industries because it significantly enhances efficiency, reduces costs, and improves real-time decision-making, providing a competitive edge in the market:

- IoT-enabled RFID tags and beacons in [retail increase sales](#), improve inventory management and enhance in-store customer experiences.
- In [healthcare, IoT sensors](#) and devices are crucial for cold chain monitoring (i.e.,

monitoring the temperature and humidity of sensitive medical products during transport to ensure they remain within safe limits to maintain efficacy) and asset tracking.

- For improved traceability and quick response to contamination issues in the Food and Beverage, and [Agriculture](#) industries.
- Monitoring the condition and location of parts in transit, reducing delays, and managing fleets in real-time is essential for the Automotive industry.
- For manufacturing, IoT-enabled automated guided vehicles (AGVs) and robotics in warehouses streamline the movement and storage of goods, thereby increasing efficiency and accuracy and improving [building management](#) by further reducing operational costs.

[Contact us](#) if you want to strengthen your company's supply chain management. After over a decade of bringing concepts to production and onto the consumer market for local and international clients, we have hands-on experience streamlining supply chains for maximum efficiency and lower risk. Schedule a free consultation with an expert on our team to discuss how we can do the same for you!

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How will IoT in Supply Chain Management benefit you?

IoT is a network of interconnected devices that communicate and exchange data via the internet. In the context of supply chain management, these devices include sensors, [RFID](#) (radio frequency identification) tags, GPS trackers, and other smart devices embedded in products, vehicles, and infrastructure. By collecting and analysing real-time data, IoT will enable your company to monitor

and manage its supply chains more effectively. Key [benefits](#) include:

1. Enhanced visibility and transparency

One of the most significant advantages of IoT in supply chain management is its increased visibility. IoT devices can track products at every stage of the supply chain, from manufacturing to delivery. This real-time tracking will help you monitor your goods' location, condition, and status, leading to better inventory management and reduced risk of theft or loss.

2. Improved efficiency and productivity

IoT technology automates many processes within the supply chain, reducing the need for manual interventions. For instance, automated inventory management systems can reorder stock when levels are low, and smart warehouses can optimise storage and retrieval processes. This automation speeds up operations and minimises errors, leading to higher productivity and lower operational costs.

3. Predictive maintenance and reduced downtime

IoT sensors can monitor the health and performance of equipment and machinery in real-time. By analysing this data, you can predict when maintenance is needed and address potential issues before they lead to equipment failure. This predictive maintenance reduces downtime, ensuring supply chain operations run smoothly and without interruption.

4. Real-time tracking and enhanced customer satisfaction

With IoT-enabled supply chains, companies can provide customers accurate and timely information about their orders. Real-time monitoring lets your customers know exactly where their products are and when they will be delivered. This transparency improves customer satisfaction and builds trust, leading to repeat business and increased profitability.

5. Data-driven decision-making

IoT generates vast amounts of data that can be analysed to gain insights into supply chain operations. You can identify patterns, predict demand, optimise routes, and make informed decisions by leveraging advanced analytics and machine learning algorithms. This data-driven approach enhances overall supply chain performance and profitability.

Is IoT for enhanced supply chains worth the investment for small businesses?

IoT in supply chain management has multiple objectives to meet: It has to fulfil a high level of customer expectations, play a role in exceeding profitability targets, and demonstrate resilience to disruptions. For companies preparing for an eco-responsible future (e.g. ensuring raw materials come from sustainable and ethical sources where workers are paid fair wages), the benefits of [supply chain management for ESG](#) (environmental, social, and governance) and [sustainability reporting](#) are invaluable.

Until recently, the cost of meeting these objectives was exorbitant and often required companies to make a trade-off by sacrificing one (e.g. sustainability) for the other (e.g. profits). However, a [rapidly growing market](#) has decreased the cost of IoT sensors and increased its value for companies worldwide – making it an affordable solution that visibly provides a return on investment. This is evidenced by the UK small businesses and startups that have implemented IoT for supply chain management and improved successes they have achieved as a result:

1. Hummingbird Technologies

Precision Agriculture: [Hummingbird Technologies](#) uses IoT sensors and drones to collect data on crop health and soil conditions. This information helps farmers optimise their supply chain by predicting yields, improving crop quality, and reducing waste.

2. Concirrus

Insurance and Risk Management: [Concirrus](#) leverages IoT data to provide insights for the marine and automotive insurance industries. By monitoring real-time data from ships and vehicles, they help clients manage risks more effectively and streamline supply chain operations related to insurance claims.

3. Thingstream

Global IoT Connectivity: [Thingstream](#) provides connectivity-as-a-service for IoT applications, enabling businesses to track assets and monitor global environmental conditions. Their technology supports supply chain management by ensuring seamless communication and data transfer across regions and networks.

4. Pointr

Indoor Positioning and Navigation: [Pointr](#) offers IoT-based indoor positioning solutions that enhance the management of extensive facilities like warehouses and shopping centres. Their technology helps improve inventory tracking, optimise space usage, and streamline logistics operations within these environments.

5. Farmer Connect

Agricultural Supply Chain Transparency: [Farmer Connect](#) uses IoT and blockchain technology to improve transparency and traceability in the agricultural supply chain. Connecting farmers with end consumers ensures that product information is accurately tracked from farm to table, enhancing trust and efficiency in the supply chain.

Are you ready to supercharge your supply chain?

Integrating IoT makes supply chains robust and more resilient to disruptions. Numerous benefits, from enhanced visibility, cost-savings, and efficiency to improved customer satisfaction and data-driven decision-making, have increased demand and continue to contribute to rapid market growth worldwide. This makes IoT in supply chain management more affordable to implement. As technology evolves, we can expect even more innovative applications and a more significant future impact on supply chain management.

Embracing IoT is no longer a nice-to-have option for companies looking to stay competitive—it's a necessity. By leveraging the power of IoT, businesses can transform their supply chains into highly efficient, responsive, and profitable operations, ensuring long-term success in an increasingly connected world.

[Call us for more insights into how IoT can help your business work smarter – not harder!](#)

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FAQ's

What is IoT in supply chain management?

IoT in supply chain management refers to the use of interconnected devices and sensors to collect and exchange data in real time. This technology enhances visibility, efficiency, and decision-making throughout the supply chain. It helps businesses track products, monitor conditions, and optimise operations.

How does IoT improve supply chain efficiency?

IoT improves supply chain efficiency by automating processes and providing real-time data on inventory and logistics. This reduces manual intervention, speeds up operations, and minimises errors, resulting in a more streamlined and productive supply chain.

Why is IoT important for supply chain management?

IoT is essential for supply chain management because it provides enhanced visibility, better inventory control, and real-time tracking. This leads to reduced costs, improved efficiency, and higher customer satisfaction. Businesses can make more informed decisions and respond swiftly to changes.

When did companies start using IoT in supply chain management?

Companies began adopting IoT in supply chain management in the early 2010s. The technology gained traction as businesses recognised its potential to enhance visibility and efficiency. Over the years, IoT adoption has grown significantly across various industries.

Which industries benefit the most from IoT in supply chain management?

Retail, healthcare, food and beverage, automotive, and manufacturing industries greatly benefit from IoT in supply chain management. These sectors use IoT for inventory management, quality control, fleet management, and predictive maintenance. The technology helps them optimise operations and reduce costs.

How does IoT enhance inventory management?

IoT enhances inventory management by providing real-time data on stock levels and product locations. This helps businesses maintain optimal inventory, reduce overstock and stockouts, and improve order fulfilment. Automated inventory systems can also reorder stock when levels are low.

What are some real-world examples of IoT in supply chain management?

Real-world examples include Amazon's use of warehouse robots, Maersk's cold chain monitoring, and Walmart's RFID-based inventory tracking. These companies leverage IoT to enhance efficiency, reduce costs, and improve customer satisfaction. They use IoT for tasks like automated inventory management and real-time monitoring.

Who can benefit from implementing IoT in supply chain management?

Implementing IoT in supply chain management can benefit both large enterprises and small—to medium-sized enterprises (SMEs). Startups and entrepreneurs also gain from enhanced efficiency, reduced costs, and better decision-making. IoT helps businesses of all sizes stay competitive and

responsive.

Why should startups invest in IoT for supply chain management?

Startups should invest in IoT for supply chain management to enhance efficiency, reduce operational costs, and improve decision-making. IoT provides real-time data and automation, which helps startups manage inventory and logistics more effectively. This gives them a competitive edge and supports growth.

How does IoT support predictive maintenance in supply chains?

IoT supports predictive maintenance by using sensors to monitor the condition of equipment and machinery in real time. Data from these sensors helps predict when maintenance is needed, preventing unexpected failures. This reduces downtime and ensures smooth supply chain operations.

What role does data analytics play in IoT-enabled supply chains?

Data analytics plays a crucial role in IoT-enabled supply chains by analysing data collected from interconnected devices. It helps identify patterns, predict demand, and optimise routes. This data-driven approach improves efficiency and decision-making.

Which British companies have improved their supply chain with IoT?

British companies like Tesco, Unilever, and Rolls-Royce have improved their supply chains with IoT. Tesco uses IoT for smart shelving and inventory management, Unilever for supply chain transparency, and Rolls-Royce for predictive maintenance. These companies benefit from enhanced efficiency and reduced costs.

What is predictive maintenance in the context of IoT?

Predictive maintenance in the IoT context involves using sensors to monitor equipment and predict when maintenance is needed. This approach prevents unexpected failures and reduces downtime. IoT data helps schedule timely maintenance and extend the lifespan of machinery.

How does IoT improve supply chain transparency?

IoT improves supply chain transparency by providing real-time tracking and monitoring of products and materials. This ensures visibility at every stage, from production to delivery. Enhanced transparency helps prevent losses, improve customer satisfaction, and ensure compliance.

When did IoT start being used in retail supply chains?

IoT began being used in retail supply chains around the early 2010s. Retailers recognised the benefits of real-time inventory tracking and smart shelving. Over time, IoT adoption in retail has expanded significantly, improving efficiency and customer experience.

Who are some British SMEs using IoT in supply chain management?

British SMEs like Hummingbird Technologies, Concirrus, and Thingstream use IoT in supply chain management. Hummingbird Technologies uses IoT for precision agriculture, Concirrus for risk management, and Thingstream for global IoT connectivity. These SMEs enhance efficiency and transparency in their operations.

What are the key benefits of IoT in supply chain management?

The key benefits of IoT in supply chain management include enhanced visibility, improved efficiency, and reduced costs. IoT provides real-time data, automates processes, and supports predictive maintenance. These advantages lead to better decision-making and increased profitability.

Why is real-time data important in supply chain management?

Real-time data is essential in supply chain management because it allows businesses to instantly monitor and respond to changes. It improves inventory management, reduces delays, and enhances customer satisfaction. Real-time insights help optimise operations and prevent disruptions.

Which technologies are commonly used in IoT-enabled supply chains?

Standard technologies used in IoT-enabled supply chains include RFID tags, GPS trackers, and various sensors. These devices collect and transmit data on the location, condition, and status of products and equipment. They enable real-time monitoring and automation of supply chain processes.

How does IoT help with cold chain monitoring?

IoT helps with cold chain monitoring by using sensors to track temperature and humidity in real time. This ensures that perishable goods are stored and transported under optimal conditions. Continuous monitoring reduces spoilage and ensures compliance with regulatory standards.

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