Automation

ENHANCING OPERATIONAL EXCELLENCE IN LOGISTICS

Warehouse management

Dashboard

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Overview

One of the backbones of the international economy, the **global logistics market size** is worth over US$ 9 trillion. The logistics industry forms the lifeline of B2B, B2C, and C2C supply chain networks, transporting, storing, and moving goods between two or more parties. Companies like FedEx and Deutsche Post DHL have been the big players in the domain. But the growth of e-commerce retailers (B2B2C) like Amazon is rapidly changing the logistics narrative. While the increasing shipping volume contributes to the growth of the logistics industry, the expansion puts immense strain on the existing infrastructure. In particular, logistics companies fulfilling e-commerce orders out of dated or makeshift facilities bear the brunt of expanding e-commerce transactions.

Automation technology has proven to be the panacea for almost all logistics woes. Let's dive in and explore how automation is transforming the logistics sector.

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What is Automation in Logistics?

Automation refers to technology applications involving various control systems that minimise human intervention and ease workflow. Automation in any area brings speed, convenience, and cost-effectiveness whether IT automation, business process automation, or robotic process automation.

Logistics automation entails using software, machinery, and control systems in the distribution centre or warehouse to boost operational efficiency. Not just logistics, even procurement, customer service, and several key supply chain steps can benefit from automation. Naturally, the logistics industry stands to gain immensely from automatic control technology.

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Automation Systems in the Global Logistics Network

Like most other sectors, the global logistics industry has undergone a paradigm shift with the wave of digital transformation. In addition, the COVID-19 pandemic has highlighted the need to shift to contactless services and experiences across business processes. Moreover, cost and speed have become critical factors since individuals and businesses today demand fast and flexible delivery with real-time information of the goods-in-transit.

Logistics operations span several domains such as manufacturing, warehouse, transportation, etc. Thus, logistics process automation involves multiple applications to connect discrete systems.

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Applications that help in the management of end-to-end supply chains

Warehouse Management System (WMS)

A WMS comprises processes and software to manage business inventories and supply chain fulfilment operations. Warehouse management software allows businesses to respond quickly to fulfilment needs in today's omni-channel and dynamic economy.

Transportation Management System (TMS)

Often part of a more extensive supply chain management system, a TMS leverages technologies that help businesses streamline the shipping process. It includes transportation solutions that enable shippers to automate freight movement, saving time, reducing costs, and improving efficiency.

Order Management System (OMS)

One of the biggest challenges e-commerce platforms face is receiving, tracking, and fulfilling orders across multiple sales channels. OMS solutions simplify order and inventory management, sales tracking, and fulfilment across all points of sale, including physical stores and online platforms.
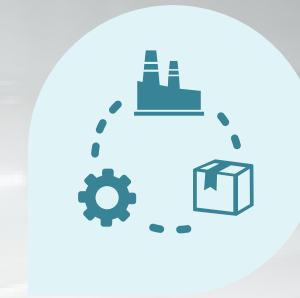
Manufacturing Execution System (MES)

MES are software solutions that provide visibility into the manufacturing process. These solutions ensure the systematic and proactive enforcement of quality and efficiency by connecting manufacturing activities across distributed facilities. It offers real-time quality checks, traceability, and yield monitoring for higher productivity and optimal performance.

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Benefits of Automation in Logistics

For automation technologies to give the desired ROI, organisations must execute them across the logistics value chain. Here's an overview of the benefits of automation technology in logistics:

Recently, Eastern Enterprise helped one of Europe's largest dealer in used trucks and trailers by developing modules and features in ERP system that helped them automate the order management system and its' logistics processes while minimizing errors due to reduced manual interventions. The client was also able to improve their customer service through a module that helps provide **a guarantee for a trusted delivery and guaranteed payment**, making sure their customers face no financial losses in the journey from selling to buying.
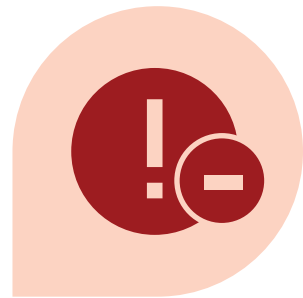
Minimisation of errors

Automation in logistics mitigates manual errors that often lead to delayed shipping, damaged products, and wrong deliveries.

Real-time access to data

Automation technologies allow access to information that can be used to run reports, conduct analyses, and make better business decisions.
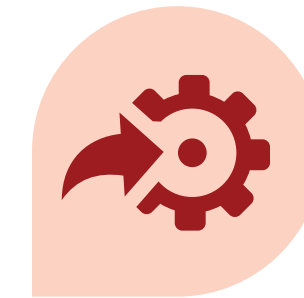
Improved customer service

Automation technologies ensure 24/7 and instant front-line customer services ranging from real-time tracking to complaint resolution.

Improved speed and scalability

Automation technologies are scalable, reduce human labour, and enhance operational speed.

Integration of logistic processes

By employing multiple logistic process automation systems such as MES, WMS, TMS, and OMS, companies can integrate the entire supply chain. It leads to reduced overall costs and increased productivity.

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Use Cases of Automation in Logistics

So, how does the logistics industry cope with the burgeoning e-commerce volume and evolving customer expectations? What lies ahead if the logistics sector goes fully automated and digital? Well, investing in new-age, advanced technologies is the most practical way logistics companies can deal with the changing times.

Below is a list of technologies and use cases demonstrating how automation streamlines business processes in the logistics industry:

Internet of Things (IoT)

Internet of Things (IoT) and big data solutions such as sensors, beacons, GPS, data analytics, management, and visualisation tools allow efficient asset management. Drone-based deliveries, automated inventory, and vehicle and people tracking are some of the most successful applications of IoT in logistics.

Artificial intelligence (AI)

The use of artificial intelligence (AI) in supply chain operations is forecasted to reach a valuation of US$ 14.3 billion by 2028. The widespread applications of AI in logistics include chatbots, demand forecasting, automated shipment scheduling, and tracking. Along with AI, Robotic Process Automation (RPA) can automate everyday back-end operations such as scheduling deliveries, tracking, updating customer information, etc.

Automated invoice data capturing

Automated invoice data capturing such as Optical Character Recognition (OCR) can help logistics firms scale by eliminating manual data extraction procedures. Machine learning-powered data capture technologies save time and money while enabling scalability.

Cloud-based tools

Cloud-based tools are another blessing to the logistics industry. For instance, cloud software integrates automation into the supply chain by checking errors in automated tasks through one-click authorisations and reminders. Moreover, cloud solutions provide reliable data backup and allow inventory and supply tracking across multiple operation sites.

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The Bottom Line

Automation technologies bring tangible benefits to the logistics industry and are undoubtedly the future of supply chain operations. Robotic and autonomous logistics solutions allow contactless goods movement, enhance productivity, and reduce operational costs. From autonomous cargo ships and crewless heavy-lift freight aeroplanes to chatbots and tracking systems, automation is rapidly transforming the way logistics function. Although initial costs, lack of standardisation, and reluctance among stakeholders limit full-fledged automation, overcoming hurdles will pave the way for future-proof logistics.

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