

How AI drives informed decision-making and sustainable impact on the logistics and supply chain industry

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Navigating the supply chain landscape presents a tapestry of challenges: ever-changing consumer expectations, intricate global landscapes, product complexities, and inevitable disruptions. Multi-tiered supply chains and partnerships complicate data handling and decision-making, leading to fragmented insights. The pursuit of sustainability goals across these multi-tiered supply chains not only adds complexity but also highlights sustainability as an essential imperative, catering to evolving customer inclinations and driving competitive advantage.

In the quest for lasting success, the integration of AI technology plays a pivotal role in infusing intelligence and sustainability throughout the supply chain. By leveraging AI-driven insights, businesses can embrace conscious practices and foster loyal and resilient customer bases while driving sustainable impact. To begin with, leaders must proactively assess their supply chain network, employing AI algorithms to identify visibility and sustainability gaps within and beyond their organization. Throughout the complete product life cycle, sustainability must be ingrained, covering design, raw material sourcing, manufacturing, last-mile logistics, product usage, returns, and recycling processes. Moreover, it falls on the shoulders of business leaders to leverage this technology to identify and build partnerships with suppliers, contract manufacturers, and logistics providers who uphold and value eco-friendly practices.

AI driving visibility, efficiency, and sustainability across Supply chain realm:

With AI at the helm, businesses can execute data-backed and verified actions, sculpting supply chain networks that prioritize customer-centricity, responsiveness, and environmental responsibility. AI algorithms steer the entire supply chain, analyzing an ocean of data, identifying disruptions and constraints, and providing insights to create customer-centric, responsive and responsible supply chains. For example, a 3PL company can leverage AI algorithms to examine origin-destination pairs based on various factors, paving the way for dynamic route planning and enabling businesses to eliminate detours, reduce dead miles, save fuel, and curtail carbon emissions, setting a precedent for responsible and sustainable logistics.

Through AI, warehouses can achieve unprecedented levels of operational efficiency. AI-powered intelligent energy management systems can automatically adjust the temperature and lighting in a warehouse based on occupancy levels, curbing energy waste. AI-driven models and advanced demand-sensing techniques can optimize inventory levels, warehouse layouts, improve SKU slotting strategies, and eliminate obsolete or expired items, driving efficiency and promoting environmental stewardship and social responsibility.

The amalgamation of AI and blockchain technology facilitates the tracking and tracing of products throughout their entire lifecycle. This enables informed decisions on return, reselling, repairs, repackaging, and recycling, encouraging a circular economy approach. By leveraging AI-powered control towers, companies can establish end-to-end visibility and real-time management of the product return journey, enabling prompt resolution of exceptions such as fraud, delays, or losses during transit.

The Future Ahead:

Embracing the myriad benefits of AI, the supply chain landscape can undergo a remarkable metamorphosis toward a greener and more sustainable future. The dynamic fusion of digital twins, AR/VR will equip companies to emulate and simulate processes, proactively averting errors that could cause production interruptions. This lays the groundwork for resilient virtual factories, adept at navigating disruptions and ensuring seamless and responsible operations.

In future, AI-powered predictive models will reach remarkable levels of sophistication, allowing businesses to closely analyze and monitor plastic usage throughout the entire supply chain journey. This will empower businesses to adopt sustainable alternatives, curb waste and endorse greener practices. Moreover, these models will be able to delve into labor data, precisely identifying potential areas of worker exploitation, and advocating for ethical and considerate workforce management. AI-guided autonomous vehicles, robots, and drones will evolve and efficiently reduce traffic congestion, lower carbon emissions, and ensure eco-conscious deliveries, even during peak hours.

This transformative partnership between technology and sustainability will set a new standard for supply chain management, leading to a

future where organizations seamlessly balance economic success with ethical practices.

