

# Data Science: A Game-Changer for Supply Chain Management



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Supply chains are amongst the most complex parts of any business. Involving diverse lines of business and processes, they need to be continually synchronised to mitigate the impact of wide-ranging markets, customer and competitive forces.

In recent years, the digital revolution has pushed businesses to adopt an expanding array of interconnected machinery, processes and technologies - such as artificial intelligence, blockchain, cloud computing, robotics, and the Internet of Things. This quest to enhance business and supply chain efficiencies and competitiveness has led to the generating of massive amounts of structured and unstructured information. In turn, business decision-making has become increasingly reliant on real-time analytics, reporting and dashboards.

It is against this backdrop that data science has earned itself the title of "[sexiest job of the 21<sup>st</sup> century](#)" - a reflection of the growing demand from companies for deep business insights that will enhance business practices, performance and profitability.

## Industry 4.0: Transforming Businesses and Supply Chains

Around the world, a growing list of companies across a broad spectrum of industries are leading the way in applying digital technologies successfully to achieve significant operational enhancements.

Take global logistics company DHL, which invested in a first-of-its-kind automation system at its 90,000sqm Advanced Regional Centre. This future-of-warehousing showcase is optimising efficiency and space usage by using 130 robotic shuttles to pick and store products from 72,000 locations spread across 26 levels. Furthermore, its fully-automated 24-hour express parcel sorting system to replace DHL South Asia's manual operations has tripled peak-hour cargo processing to 628 tonnes and increased its shipments and documents handling by six-fold to 24,000 units.

Another prime example is Netflix, the mail-order DVD company which transformed itself to become the world's largest internet-television network with 53 million subscribers across 50 countries. As a customer-focused, data-driven business, Netflix has leveraged big data to understand market trends and customers preferences, as well as to shape the way its business meets user expectations. By successfully fostering consumer engagement and loyalty, Netflix has built a thriving business in this hypercompetitive sector.

From differentiated go-to-market strategies to process and business improvements, more examples are available to clearly demonstrate the potential impact and importance of big data and data science on today's businesses. Being able to analyse real-time data from multiple sources, instead of only historical data, offers many benefits.

These include: firstly, being able to design more responsive and competitive supply chains, as a result of having greater situational awareness and sharper insights into ever-evolving market forces and preferences. Secondly, achieving cost savings from making well-timed, well-informed business decisions, based on real-time information. And, thirdly, enhancing customer service and satisfaction by using advanced features and functions, such as real-time product tracking, inventory management, and product transit management to minimise incidents of damaged goods or shipment delays.

## Embracing Data Science to Build Competitive Supply Chains

It is clear that data science solutions are highly varied and disruptive, but essential to businesses operating in today's competitive business landscape. What do companies and executives need to do today to garner its benefits? Here is a 3-step approach to consider:

Firstly, explore the world of Industry 4.0 to understand the myriad of digital technologies and related core issues, such as data integrity and data security. This fundamental understanding will be the foundation for putting in place a robust strategy to kickstart your company's plans to leverage big data and data science to transform your supply chains, or even the entire business.

Secondly, start small and grow. Implementing a proof-of-concept or pilot programme provides a focused way of learning the ropes, including getting a good grasp of the technologies, processes and outcomes. From there, an organisation can confidently scale up its digital platform to cover more supply chain and business functions, to reap greater value.

Finally, build digital skills to support longer-term growth. A two-pronged approach of investing in training programmes for employees and collaborating with third-party vendors or partners with digital and data science expertise may provide your organisation with the most comprehensive access to current knowledge, skills and technologies, all of which contribute towards a strong competitive advantage.