

# Data-Driven Innovations in Supply Chain Management with Qlik Insights

## **Problem Understanding**

**Specify Business Problem:** This project seeks to revolutionize supply chain management through the application of data-driven insights utilizing Qlik. By leveraging advanced analytics, the aim is to optimize crucial aspects such as logistics, forecasting, and inventory management. The objective is to enhance operational efficiency and responsiveness, driving substantial improvements across the supply chain.

By harnessing Qlik's powerful analytics capabilities, this transformative initiative aims to reshape the supply chain landscape. The project focuses on providing actionable insights to streamline processes, reduce costs, and improve decision-making. Furthermore, it aspires to create a more agile and adaptive supply chain that can swiftly respond to market changes and customer demands. The ultimate goal is to elevate overall business performance and establish a competitive edge in the market.

## **Business Requirements:**

- Implement a robust data integration strategy to aggregate and centralize relevant data from diverse supply chain sources.
- Utilize Qlik's advanced visualization capabilities to create intuitive and dynamic dashboards, providing stakeholders with clear insights into the entire supply chain ecosystem.
- Leverage Qlik's advanced analytics features to analyze historical logistics data, identify patterns, and optimize transportation routes.
- Implement real-time tracking and monitoring solutions to enhance visibility into the movement of goods, reducing lead times and minimizing transportation costs.
- Implement real-time analytics to facilitate quick decision-making in response to unforeseen events or changes in demand, ensuring a proactive and responsive supply chain.

**Literature Survey:** The integration of data-driven insights in supply chain management (SCM) has gained substantial attention in recent years, primarily due to advancements in analytics and big data technologies. The use of tools like Qlik has been instrumental in transforming SCM by

providing enhanced visibility, predictive capabilities, and operational efficiency.

## **Data-Driven Supply Chain Management**

Several studies highlight the importance of data-driven approaches in SCM [1]. According to Waller and Fawcett (2013), the application of big data analytics in supply chains can significantly enhance decision-making processes by providing real-time insights and predictive analytics. They argue that leveraging big data can lead to more accurate demand forecasting, optimized inventory management, and improved logistical efficiency.

## **Advanced Analytics and Visualization**

The role of advanced analytics [2] and visualization tools like Qlik in SCM is well-documented. Wang, Gunasekaran, Ngai, and Papadopoulos (2016) discuss the benefits of using advanced analytics to analyze and visualize supply chain data. They emphasize that these tools enable organizations to uncover hidden patterns, trends, and insights, which are critical for strategic planning and operational optimization. Qlik's capabilities in creating dynamic dashboards and visualizations are particularly noted for their effectiveness in enhancing stakeholder understanding and engagement.

## **Optimization of Logistics and Transportation**

The optimization [3] of logistics and transportation through data analytics is a critical area of focus. Esper, Defee, and Mentzer (2010) highlight how analytics can be used to optimize transportation routes, reduce costs, and improve delivery times. They provide case studies where companies have successfully implemented data-driven logistics solutions to achieve significant improvements in efficiency and cost reduction.

## **Real-Time Tracking and Monitoring**

Real-time tracking and monitoring [4] solutions are essential for modern supply chain management. A study by Hofmann and Rüscher (2017) explores the impact of real-time data on supply chain visibility. They find that real-time tracking technologies, coupled with advanced analytics,

can greatly enhance the ability to monitor the movement of goods, thereby reducing lead times and improving overall supply chain responsiveness.

## **Proactive and Responsive Supply Chains**

The ability to respond proactively to unforeseen events is a key benefit of data-driven SCM [5]. Ivanov, Dolgui, and Sokolov (2019) discuss the concept of a resilient supply chain, which is capable of adapting to disruptions through real-time analytics and decision-making. They argue that data-driven insights enable supply chains to be more agile and responsive, thereby ensuring continuity and minimizing the impact of disruptions.

### **Social and Business Impact:**

**Social:** The implementation of data-driven innovations in supply chain management through Qlik Insights has significant social implications. By optimizing logistics, forecasting, and inventory management, the project can lead to more efficient use of resources, reducing waste and lowering carbon footprints. This contributes to environmental sustainability and addresses climate change concerns.

**Business:** The integration of data-driven innovations in supply chain management using Qlik Insights is poised to have a profound impact on business operations. By leveraging advanced analytics, companies can optimize key aspects of their supply chain, such as logistics, forecasting, and inventory management. This leads to improved operational efficiency, reduced costs, and enhanced responsiveness to market changes.

Both, Social and Business Impact are evident through visualisations generated through the aid of QlikSense. These are shown in latter parts of this report.