



Supply Chain

Analytics [23BAE745]

UNIT I: DESCRIPTIVE ANALYTICS IN SUPPLY CHAIN MANAGEMENT

This presentation explores the fundamental concepts and applications of supply chain analysis. It will delve into the methods and tools used to optimize and improve the performance of supply chain networks.

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Recap of Previous Presentation



1

Introduction to Supply Chains

We discussed the basic building blocks of supply chains and explored different types of supply chain models.

2

Supply Chain Dynamics

We analyzed the factors that influence supply chain performance and identified key performance indicators.

3

Supply Chain Risk Management

We examined various risks and disruptions that can affect supply chains, and discussed mitigation strategies.



Guess the Topic



Inventory Management

Balancing supply and demand to optimize inventory levels.



Transportation Optimization

Finding the most efficient routes and modes of transport.



Supply Chain Analytics

Leveraging data to identify patterns and improve decision-making.



Real-Life Case Studies

Walmart's Supply Chain

Walmart utilizes sophisticated analytics to track inventory and optimize distribution networks, achieving cost efficiency and customer satisfaction.

Amazon's Fulfillment Network

Amazon's vast fulfillment centers and intricate delivery systems ensure rapid and reliable product delivery to millions of customers worldwide.

Zara's Fast Fashion Model

Zara employs a fast-paced supply chain to rapidly respond to changing trends and deliver trendy items to stores within days.



Supply Chain Analytics Concepts

1 Demand Forecasting

Predicting future demand to ensure adequate inventory and avoid stockouts.

2 Inventory Optimization

Balancing inventory levels to minimize holding costs and meet customer demand.

3 Transportation Network Design

Optimizing routes, modes of transport, and network configurations to reduce costs and improve efficiency.

4 Supply Chain Risk Assessment

Identifying potential disruptions and developing mitigation strategies to ensure supply chain resilience.





Applying Supply Chain Analysis



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1

Data Collection

Gather data from various sources, such as sales records, inventory levels, and transportation data.

2

Data Cleaning and Preparation

Transform raw data into a usable format for analysis, ensuring accuracy and consistency.

3

Data Analysis

Apply statistical and predictive modeling techniques to identify patterns and trends.

4

Decision-Making

Leverage insights from analysis to improve forecasting, inventory management, and transportation planning.



Student Learning Assessment



What are the key performance indicators (KPIs) used to measure supply chain performance?

Describe the differences between predictive and prescriptive analytics in a supply chain context.

Explain how a company can use supply chain analytics to mitigate the risk of disruptions.

Provide an example of a real-life supply chain problem that can be solved using analytics.



Summary of Key Takeaways

Supply Chain Analysis is Essential

Optimizing supply chain operations through data-driven decision-making is crucial for success.

Analytics Tools Provide Insights

Leveraging data analytics tools helps to identify patterns, trends, and areas for improvement.

Continuous Improvement is Key

Regularly evaluating and refining supply chain strategies based on data and feedback is essential.





Online References and Resources



Supply Chain Management Institute

A professional organization offering resources, certifications, and networking opportunities.



Harvard Business Review

Provides insights and case studies on supply chain management and analytics.



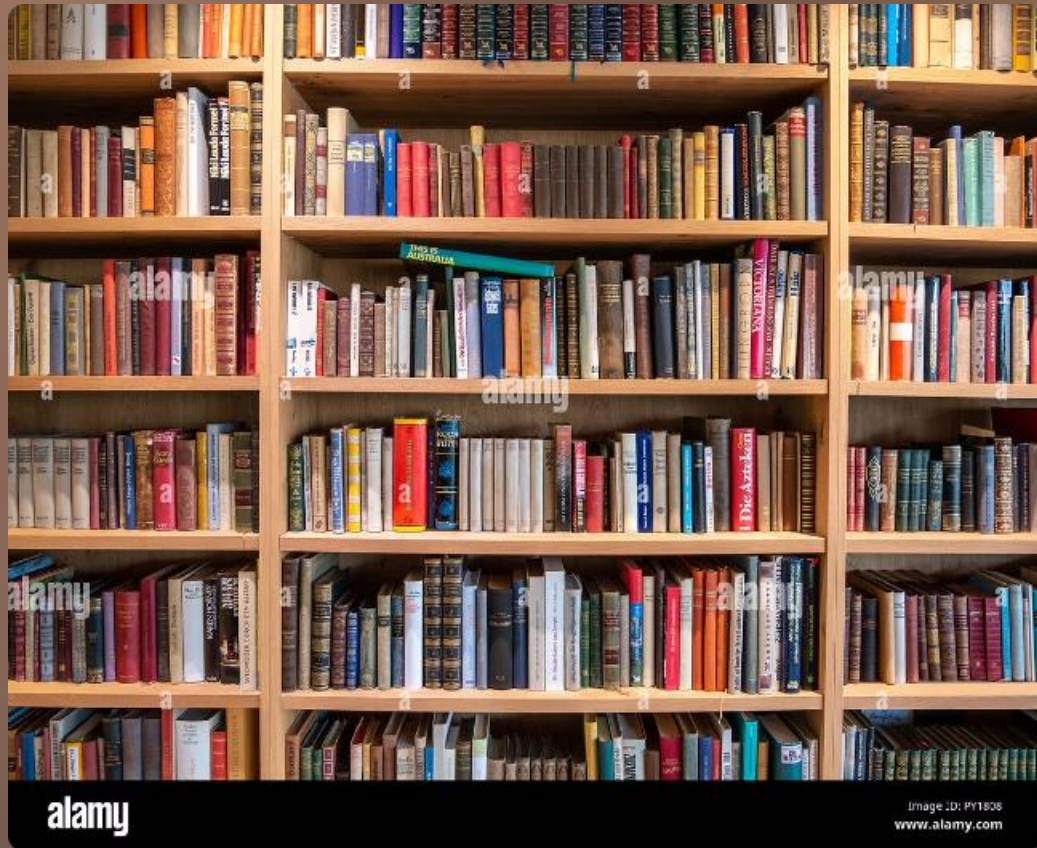
McKinsey & Company

Offers research and consulting services on supply chain optimization and innovation.



SAS Institute

Provides software solutions and resources for supply chain analytics and optimization.



Recommended Textbooks and Literature

- Supply Chain Management by Sunil Chopra and Peter Meindl
- Operations Management by Jay Heizer and Barry Render
- Analytics for Supply Chain Management by Michael K. Freimer
- Business Analytics for Managers by David A. Olson