Tech Saksham

Case Study Report

Analytics Data with Power BI

"SUPPLY CHAIN ANALYSIS OF INVENTORIES"

"GOVERNMENT ARTS COLLEGE IN DHARMAPURI"

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ABSTRACT

In the digital age, data has become an invaluable asset for businesses, particularly in the chain analysis. The proposed project, “Supply Chain Analysis of Inventories,” aims to leverage PowerBI, a leading business intelligence tool, to analyze and visualize chain analysis data. This project will enable products to gain deep insights into customer behavior, preferences, and trends, thereby facilitating data-driven decision-making and enhancing customer satisfaction. The chain analysis of inventories will allow products to respond promptly to changes in customer behavior or preferences, identify opportunities for discounts and product unit price, and tailor their products and services to meet customer needs. The project will also contribute JIT,VMI, and DRP developed for inventory management will be introduced.

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement

Appreciate What a supply chain is and what it does. Understand where your company fits in the supply chains it participates in and the role it plays in those supply chains. Discuss ways to align your supply chain with your business strategy. Start an intelligent conversation about the supply chain management issues in your company. Case studies are used to illustrate supply chain challenges and to present solutions for those challenges. These case studies and their solutions bring.

1.2 Proposed Solution

The proposed solution is to develop a PowerBI dashboard that can analyze and visualize chain analysis of inventories data. The dashboard will integrate data from various sources such as customers, products, sales data. It will provide a comprehensive view of customer behavior, preferences, and trends, enabling customers to make informed decisions. The dashboard will be interactive, user-friendly, and customizable, allowing products to tailor it to their specific needs. The components of a supply chain include producers, vendors, warehouses, transportation companies, distribution centers, and retailers.

1.3 Feature

- **Supply chain analysis of inventories**: The dashboard will provide chain analysis of customer data.
- **Customer Segmentation**: It will segment customers based on various parameters like birthdate, gender, PK products, customer name, total amount, discount, etc.
- **Trend Analysis**: The dashboard will identify and display trends in customer behavior.
- **Predictive Analysis**: It will use historical data to predict future customer behavior.

1.4 Advantages

- Inventory management: Inventory management is important in SCM as it ensures a balance between stock availability and demand, optimizing costs, and preventing disruptions.
- All well-managed inventory system enhances efficiency, boosts customer satisfaction by meeting their demands portly, and maximizes profitability.
  Low costs and saves money.

1.5 Scope

The scope of this project can identify known risks and help to predict future risks by spotting patterns and trends throughout the supply chain. By analyzing customers data, supply chain analytics can help a business better predict future demand. The scope of supply chains extends through the organization from the demand end to the supply end. However, the core supply chain functions primarily relate to the demand and supply management processes directly controlled by the enterprices.

CHAPTER 2

Supply Chain Operations: Planning and sourcing

2.1 Services:

- **Data Collection and Storage Services**: chain analysis of inventories need to collect and store customer data in chain analysis. This could be achieved through services like
- **Data Processing Services**: The functions of a supply chain include product development, marketing, operations, distribution, finance, and customer service.

2.2 Planning and Sourcing:

Planning:

- **PowerBI**: The main tool for this project is PowerBI, which will be used to create interactive dashboards for chain analysis data visualization.

Software Requirements: supply chain inventory planning involves forecasting demand and deciding exactly how much inventory is needed and when to order it. It helps companies meet demand while reducing expenses.

- **PowerBI Desktop**: This is a Windows application that you can use to create reports and publish them to PowerBI.

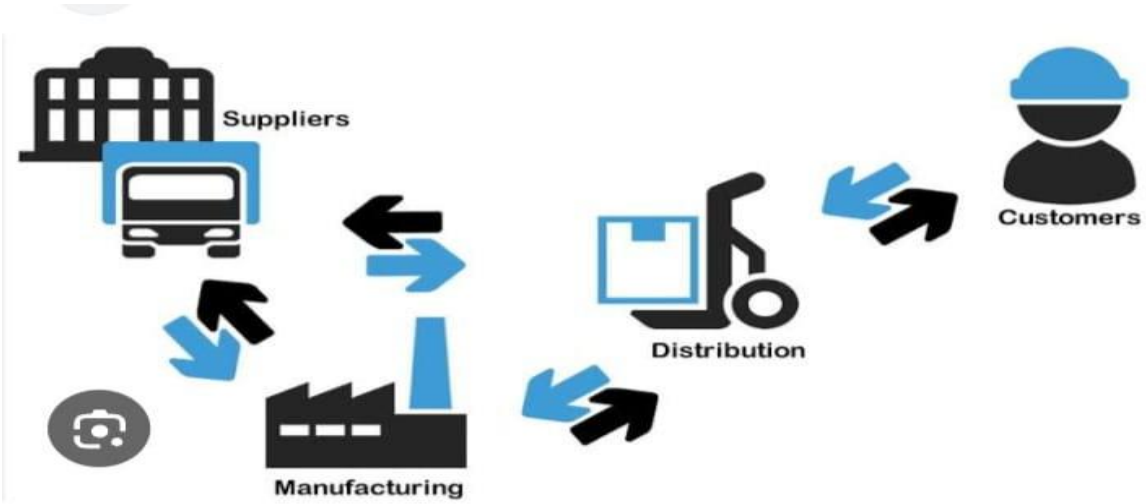
- **PowerBI Service**: This is an online SaaS (Software as a Service) service that you use to publish reports, create new dashboards, and share insights.

- **PowerBI Mobile**: This is a mobile application that you can use to access your reports and dashboards on the go.

CHAPTER 3

Supply Chain Operations: Making and Delivering

3.1 Making and Delivering:




Inventory management process
1
2
3
4
Collect data
Gather inventory info to identify strengths and weaknesses.
Build ID method
Determine how you want your inventory organized.
Choose a system
Pick the inventory management system that meets your unique needs.
Utilize software
Consider automating the process with inventory software.

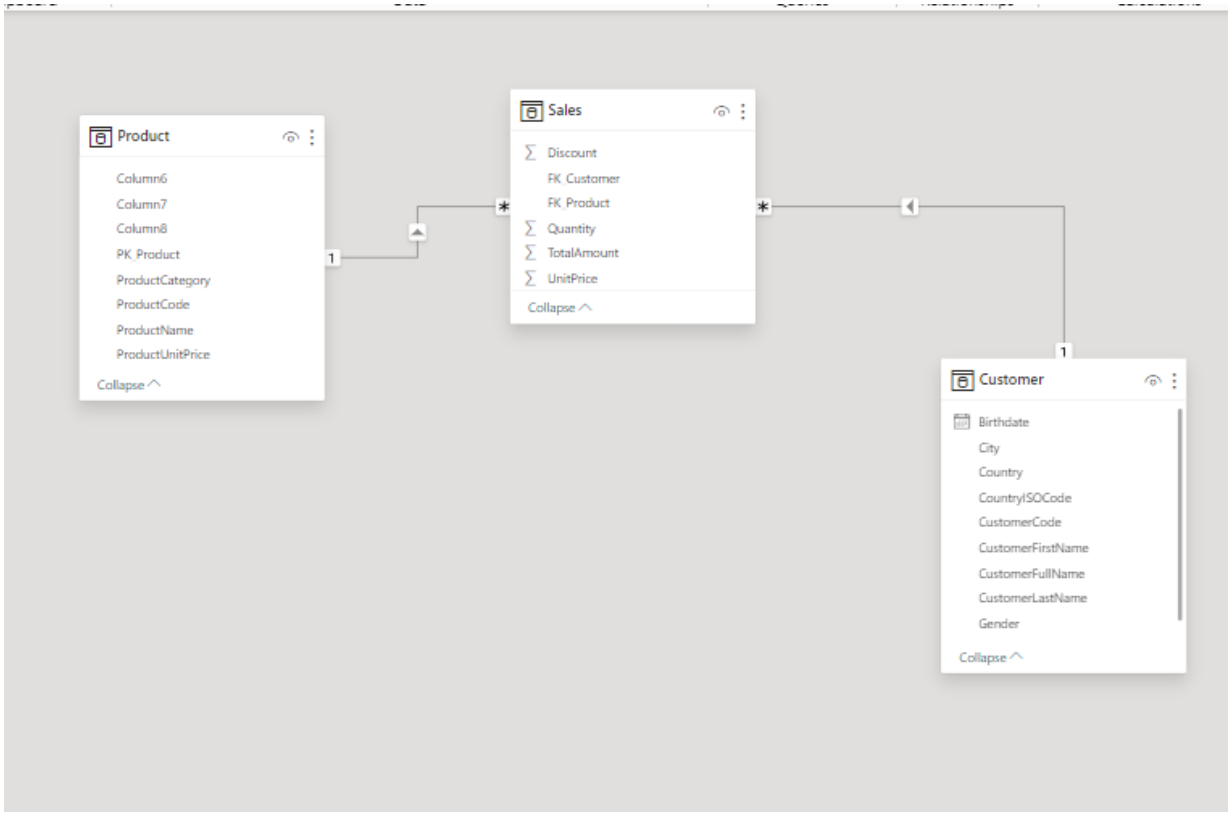
CHAPTER 4

Metrics for Measuring Supply Chain Performance

Inventory to sales Ratio:

One of the key supply chain metrics on our list, the inventory-to-sales ratio, is critical to track since inventory is crucial to business success. This metric measures the amount of inventory for sale compared to the actual quantity sold, expressed as a ratio.

The performance of each components is assessed based on reliability, flexibility, responsiveness, cost, and quality.

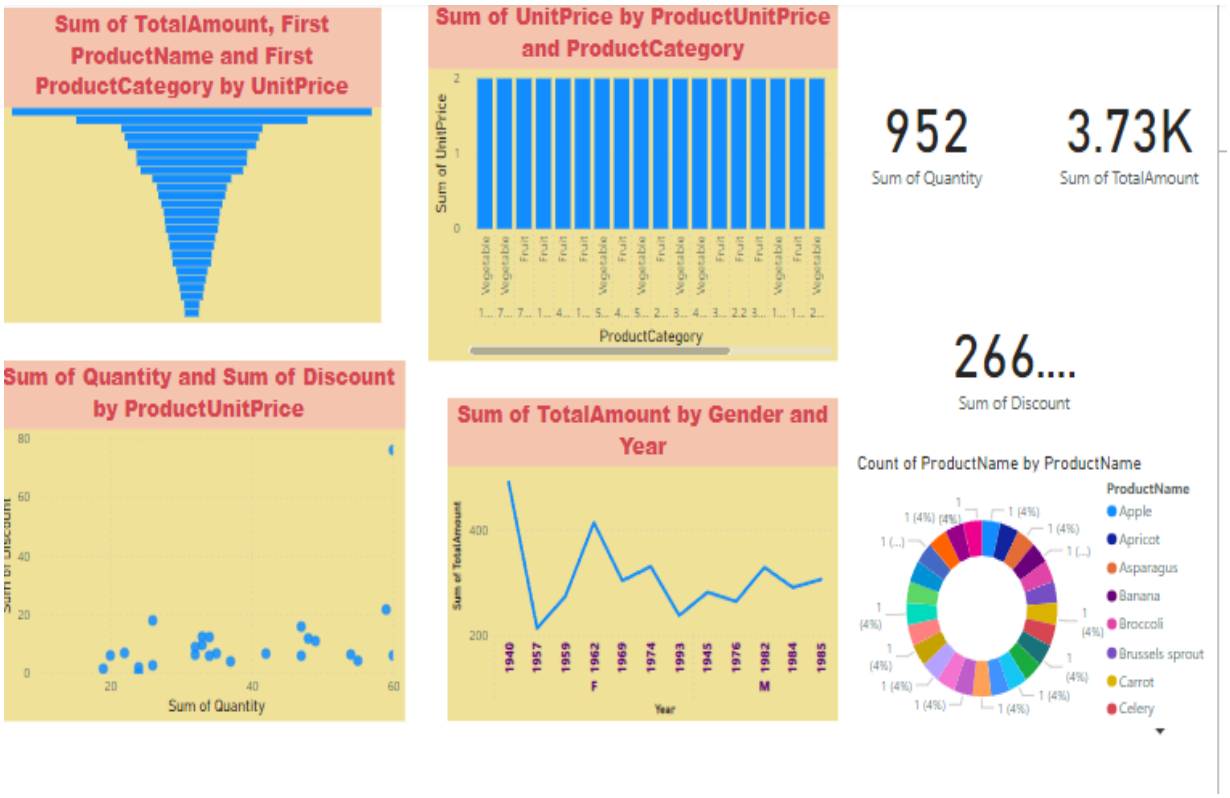


Supply Chain Management

TABLE 11.2 How Corporate Strategy Impacts Supply Chain Decisions

	LOW COST STRATEGY	RESPONSE STRATEGY	DIFFERENTIATION STRATEGY
Primary supplier selection criteria	• Cost	• Capacity • Speed • Flexibility	• Product development skills • Willing to share information • Jointly and rapidly develop products
Supply chain inventory	• Minimize inventory to hold down costs	• Use buffer stocks to ensure speedy supply	• Minimize inventory to avoid product obsolescence
Distribution network	• Inexpensive transportation • Sell through discount distributors/retailers	• Fast transportation • Provide premium customer service	• Gather and communicate market research data • Knowledgeable sales staff
Product design characteristics	• Maximize performance • Minimize cost	• Low setup time • Rapid production ramp-up	• Modular design to aid product differentiation

Dashboard


Sum of TotalAmount, First ProductName and First ProductCategory by UnitPrice
Sum of UnitPrice by ProductUnitPrice and ProductCategory
Sum of UnitPrice
ProductCategory
952
Sum of Quantity
3.73K
Sum of TotalAmount
266....
Sum of Discount
Sum of Quantity and Sum of Discount by ProductUnitPrice
Sum of Quantity
Sum of TotalAmount by Gender and Year
Sum of TotalAmount
Year
Count of ProductName by ProductName
ProductName
Apple
Apricot
Asparagus
Banana
Broccoli
Brussels sprout
Carrot
Celery


Just in time
Warehouse
Select all
Puerto Rico
USA
Shipment
Total Quantity
66,367
Total Orders
30,871
Orders Delayed
43.54%
Avg Delayed Days
49
Net Revenue
$5.55M
Net Profit
$3.99M
Avg Delayed Days by Customer Market
58
50
49
37
31
LATAM
Europe
Pacific Asia
Africa
North America
% of delayed orders for each shipping mode
First Class
Second Class
Standard Class
Same Day
% of delayed orders in top 10 ordering countries
Delayed
On-Time
USA
Mexico
France
Germany
Brazil
UK
Australia
China
Italy
Honduras
% and avg_days of delayed orders over time
2015
2016
2017
Y
Q
M
Product Name
Total Orders
Delayed Orders

CONCLUSION

Inventory management isn't just about numbers and formulas; it's about understanding the rhythm and flow of a business. It's about predicting the unpredictable, preparing for uncertainties, and ensuring that business can meet their commitments to their customers. The difference between a thriving business and one that struggles often lies in how well the business manages its inventories. A well-managed inventory system can lead to increased customer satisfaction, reduced costs, and improved profitability.

FUTURE SCOPE

Supply chain management, logistics, and procurement help business stay competitive by helping track and coordinate the cost-effective and efficient movement of goods and service, which is key to the profitability of an organization.

Based on the importance of management of the flow of goods and service between locations and business, growth of supply chain management, logistics, and purchasing are on par with average rates and above average.

Therefore, demand professionals skilled in supply in supply chain management, procurement, and logistics roles aren’t likely to dissipate anytime soon.

So, let’s discuss in detail the future scope and opportunities of supply chain management in 2025.

REFERENCE

https://researchgate.net/publication/356085653_Inventory_Management_in_Supply_Chains

LINK

https://github.com/Kalai102004/Power-BI.git