Project Proposal: Walmart Supply Chain Analysis

Authors

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1. Introduction

This project aims to dissect and understand the supply chain mechanism of Walmart, a global retail giant. By leveraging data visualization and analysis techniques, we will identify potential areas of improvement within the supply chain. This exploration will extend from procurement to the final delivery, with a particular focus on logistical efficiency and cost-effectiveness.

2. Problem and Objectives

The impetus for this project stems from the critical role that supply chain efficiency plays in Walmart's success. In the face of growing competition and increased customer expectations, there is a continuous need for optimization. This project will address specific challenges within Walmart's supply chain, including potential bottlenecks, inefficient routing, and inventory management issues, with the goal of improving overall efficiency and reducing costs.

The project is focused on achieving the following objectives:
- Comprehensive mapping and understanding of the Walmart supply chain.
- Analysis of the supply chain to identify inefficiencies and delays.
- Development of strategic recommendations to enhance supply chain management.

3. Methodology

Our methodological approach will encompass the following steps:
- Data acquisition from Walmart's supply operations.
- Use of Python and R for data analysis and visualization.
- Application of statistical models to interpret the data and propose optimizations.

4. Expected Outcomes

The project will aim to deliver:
- Detailed visual representations of the supply chain processes.

- A report highlighting inefficiencies and areas for improvement.
- Actionable strategies for supply chain optimization.

5. Resources Needed

Successful completion of the project will require the following resources:
- Data sets detailing Walmart's supply chain logistics.
- Software tools for data visualization and analysis.
- Academic resources for benchmarking supply chain efficiency.

6. Contributions

This project is expected to contribute to the field of supply chain management by:
- Providing insights into the supply chain of a major retailer.
- Presenting a case study on the application of data science to business operations.
- Offering recommendations that could significantly improve operational efficiency.

Team Responsibilities

Team Member	Responsibilities
Nilka Patel	Background research, writing introduction and problem statement sections
Harsh Dalwadi	Coding, writing methodology section
Krutarth Majmundar	Analyzing and graphing results, writing the results and conclusions section

References

1. Verma, A., Potluri, R., & Mahere, S. (2019). An incisive assessment of Walmart's supply chain management. This paper conducts an in-depth analysis of Walmart's supply chain management, focusing on its efficiency and global market influence. It discusses the importance of supply chain management in Walmart's rise, the efficiency of its supply chain, and the current challenges and improvement scopes.
2. Jawad, S. A literature analysis of Walmart's supply chain excellence in terms of integration, distribution, and operations. This work provides a literature analysis on the excellence of Walmart's supply chain, particularly looking at how integration, distribution, and operations contribute to its success.
3. Ren, X. (2023). Business Analysis of Walmart - Success Factors and Challenges. [Journal of Business and Commercial Pilot Publication, 44]. DOI: 10.54691/bcpbm.v44i.4838. This research analyzes Walmart's success factors and challenges, focusing on its localization and differentiation strategies, membership

supermarkets, and the information supply chain system that supports its efficiency and low costs.

4. Liu, X. (2022). Demonstration of Supply Chain Management in Big Data Analysis from Walmart, Toyota, and Amazon. [Journal of Business and Commercial Pilot Publication, 34]. DOI: 10.54691/bcpbm.v34i.3159. This thesis compares the application of big data technology in the supply chain management systems of Walmart, Toyota, and Amazon, highlighting the role of big data in promoting production efficiency and enterprise management.