



OPTIMIZATION OF ERP SOFTWARE TOOL IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT ON BLUEBHARATH EXIM PVT LTD

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ABSTRACT

This paper explores optimization strategies for ERP software in logistics and supply chain management, addressing challenges like inventory visibility and demand forecasting. It delves into features like data analytics and AI to enhance ERP performance, emphasizing real-time data integration and predictive insights. Case studies highlight successful optimization efforts, while recommendations address common implementation pitfalls, ultimately emphasizing the importance of leveraging advanced technologies for operational efficiency and competitive advantage.

INTRODUCTION

The critical role of ERP software in logistics and supply chain management and highlights the importance of optimization strategies tailored to these domains' unique needs. It emphasizes streamlining complex processes, integrating ERP systems with other technologies, and enhancing data management practices to improve efficiency and decision-making. Automation technologies are also highlighted for their potential to reduce errors and enhance customer satisfaction. Overall, the passage stresses the importance of optimization in achieving operational excellence and maintaining a competitive edge in the dynamic marketplace of logistics and supply chain management.

Optimizing ERP systems in logistics and supply chain management is crucial for enhancing visibility and collaboration across networks. Integration with IoT, Blockchain, and AI offers real-time data access for better decision-making. It future-proofs operations by embracing modular architectures and cloud-based solutions. This ensures agility and resilience to adapt to evolving market dynamics and customer expectations. Ultimately, optimization enables companies to drive innovation, unlock efficiencies, and achieve sustainable success in supply chain excellence.

OBJECTIVES OF THE STUDY:

PRIMARY OBJECTIVES;

- Evaluate and identify the key challenges and opportunities for optimizing ERP software tools in logistics and supply chain management.

SECONDARY OBJECTIVES;

- Assess the impact of ERP optimization on key performance indicators such as cost reduction, lead time reduction, inventory management, and Transportation management.
- Provide practical recommendations for organizations seeking to improve the effectiveness and efficiency of their ERP systems in managing logistics and supply chain operations.

NEED OF THE STUDY

- Optimization leads to cost reductions through improved inventory management and enhanced efficiency.
- Real-time insights enable better decision-making and proactive problem-solving.
- ERP optimization helps in mitigating risks and ensuring compliance with regulations

SCOPE:

- Analyzing and improving key processes within logistics and supply chain management, including inventory management, order fulfillment, transportation planning, and procurement.

- Implementing robust data management practices to ensure the accuracy, consistency, and integrity of data across the ERP system, including data cleansing, validation, and migration.
- Leveraging automation technologies to streamline repetitive tasks, eliminate manual errors, and improve operational efficiency across various supply chain processes.
- Utilizing built-in analytics and reporting tools to gain insights into key performance metrics, identify trends, and optimize processes for better decision-making.

LIMITATIONS:

- Limited budget, time, and expertise may hinder effective implementation of optimization efforts within the organization, impacting the extent to which improvements can be made.
- Legacy ERP systems or outdated technologies may pose compatibility and integration challenges with modern optimization solutions, affecting customization and efficiency.
- Resistance to change from employees, stakeholders, or organizational culture may impede the adoption of optimized processes and technologies, slowing down progress.
- Factors such as market volatility, geopolitical events, or disruptions in the supply chain ecosystem may impact optimization efforts, necessitating adaptable strategies and risk mitigation measures.

REVIEW OF LITERATURE:

- **Katarzyna Grobler-Dębska, Bartłomiej Żak, Mateusz Fijas, Marcin Kowalski, Małgorzata Kopa, Edyta Kucharska, Jerzy Baranowski (2022)** Supply chain planning is a difficult task for organizations and both crucial for their profits and for market penetration. Many processes belonging to supply chain planning and management belong to discrete optimisation problems. Although science provides many methods for discrete optimization, business cannot apply them. The main software supporting management in companies are ERP systems. ERP support decision-making at the strategic, tactical and operational level. Most ERP systems, even at the leading edge, do not have complex optimisation algorithms implemented to support supply chain decision-making. The paper presents the results of the InfoConsulting research and development project related to design and implementation of a solution that allows modelling and simulation of logistic processes, material area, in a company and the implementation and optimisation of material logistics processes, which will communicate with typical ERP systems using communication of mobile devices.
- **SC Lenny Koh, S Saad, S Arunachalam (2006)** To investigate the integration of supply chain management (SCM) and enterprise resource planning (ERP) systems for competing in the twenty-first century supply chain. ERP systems in the case company address only a subset of SCM needs. ERP's main added value is its combination of financial control with multi-facility coordination, but ERP does not deliver supply planning and demand planning functionality for the company. The systems are not designed to support internal supply chains. However, integration of SCM and ERP gives the company the opportunity to build effective processes with suppliers they trust, so they can get the maximum return on relationship with all their suppliers on a continuous basis.
- **Laureano Jiménez, Raúl Muñoz(2006)** In the global chemical industry it is of crucial importance to keep an up-to-date knowledge map of customers and providers in order to minimize supply chain inefficiencies. ERP (Enterprise Resource Planning) involves coordinating and integrating applications both, within and among companies. In this way, there is a centralized database to manage all the corporate information (financial, production or inventory).
- **JJ Shuai, Yi-Fen Su, Chyan Yang (2007)** Enterprise resource planning (ERP) and supply chain management (SCM) represent important technology investment options for operations managers, and have been acclaimed in the practitioner and academic literature for their potential to improve business performance. ERP systems provide benefits in the area of transaction automation; SCM systems provide more sophisticated planning capabilities. This paper focuses on the interactions between ERP and SCM A conceptual framework was proposed. The framework is featuring the ERP benefits, firm competences, and supply chain performance. It became clear that there exist close interrelations in benefits of implementing ERP system and SCM performances. We apply rough set theory (RST) to discover important ERP attributes leading to the success of SCM.
- **Arnab Banerjee (2018)** The chapter provides a high level understanding of how ERP system alongside Blockchain technology will be a powerful tool to improve supply chain operations. The chapter details out how the two technologies will complement each other in every aspect of supply chain functions bringing in transparency, efficiency, and cost reduction. The chapter considers every aspect of supply chain for an ERP enabled organizations and details out use cases for master data, engineering design, sales process, procurement process, demand and supply.
- **Helena Forslund (2010)** the demands from supply chain performance management (PM) on enterprise resource planning (ERP) systems. The second purpose is to evaluate the corresponding capabilities of common ERP systems. The findings can give two types of input to companies purchasing or upgrading ERP systems; a “checklist” of demands from supply chain PM to consider and an evaluation of the corresponding capabilities for common ERP systems. Even though investments in ERP systems represent significant costs for companies, few studies in the area of ERP systems and supply chain PM are identified.

RESEARCH METHODOLOGY:

RESEARCH DESIGN

- The research design typically involves a mix of qualitative and quantitative approaches. Qualitative methods may include interviews, case studies, and observations to gain insights into specific processes or challenges within the supply chain. Quantitative methods often involve surveys, statistical analysis, and simulation modeling to analyze large datasets and identify trends or patterns.
- The Data used for the study has both primary and secondary data.

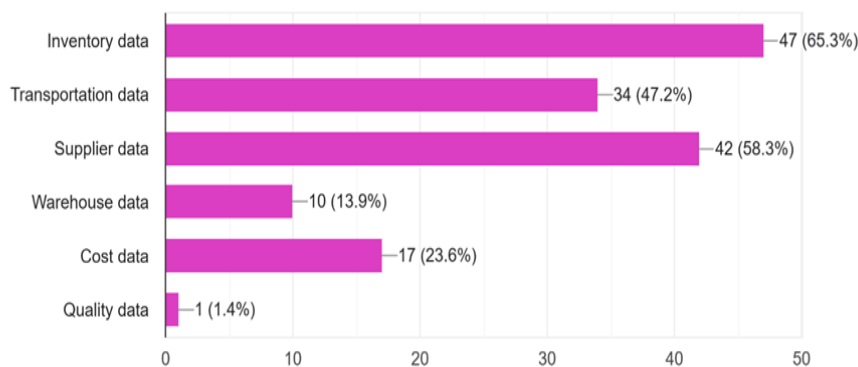
SOURCE OF DATA

- **Primary data** involves firsthand information collected specifically for a research project, utilizing methods like surveys, interviews, observations, and focus groups. For ERP optimization in logistics and supply chain management, surveys among stakeholders can gather insights into usage, challenges, and suggestions.
- **Secondary data**, on the other hand, comprises existing data collected by others for different purposes, including academic journals, industry reports, case studies, and government publications. It provides valuable context, background information, and benchmarks for analyzing ERP optimization in logistics and supply chain management.

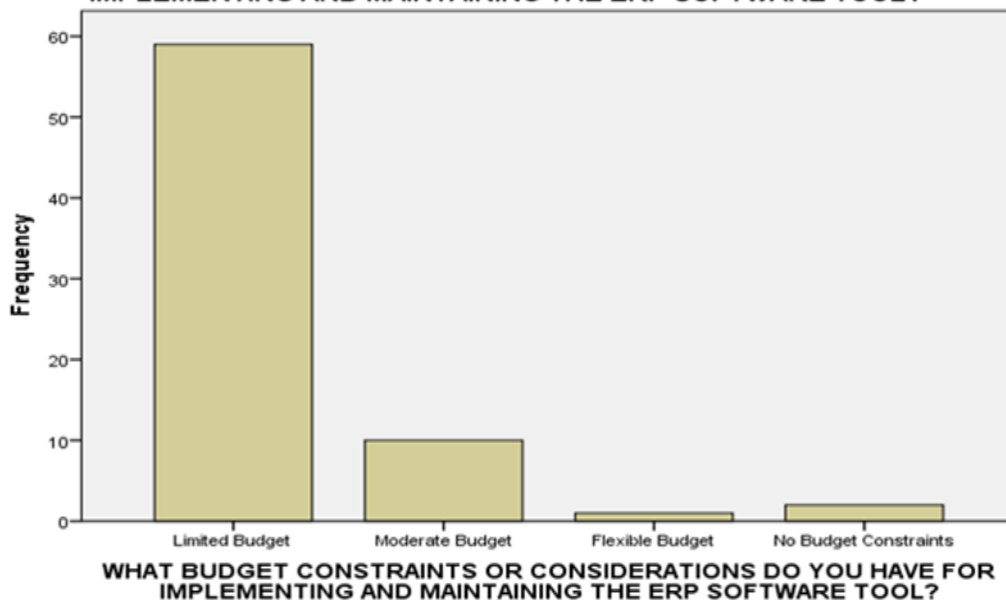
DATA ANALYSIS

WHAT TYPES OF DATA ARE BEING COLLECTED AND ANALYZED IN YOUR LOGISTICS AND SUPPLY CHAIN OPERATIONS?

72 responses



WHAT BUDGET CONSTRAINTS OR CONSIDERATIONS DO YOU HAVE FOR IMPLEMENTING AND MAINTAINING THE ERP SOFTWARE TOOL?



Correlations

		AGE	EXPERIENCE WITH LOGISTICS AND SUPPLY CHAIN MANAGEMENT
	Pearson Correlation	1	.824**
	Sig. (2-tailed)		.000
	N	72	72
EXPERIENCE WITH LOGISTICS AND SUPPLY CHAIN MANAGEMENT	Pearson Correlation	.824**	1
	Sig. (2-tailed)	.000	
	N	72	72

** . Correlation is significant at the 0.01 level (2-tailed).

HYPOTHESIS

- H0: There is No significant difference between the age using ERP software tool.
- H1: There is significant difference between the age using ERP software tool.

ANOVA**EXPERIENCE WITH LOGISTICS AND SUPPLY CHAIN MANAGEMENT**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	60.741	2	30.371	90.099	.000
Within Groups	23.259	69	.337		
Total	84.000	71			

ONEWAY AGE BY EXPERIENCEWITHLOGISTICSANDSUPPLYCHAINMANAGEMENT**ANOVA****AGE**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23.582	4	5.896	39.225	.000
Within Groups	10.070	67	.150		
Total	33.653	71			

FINDINGS OF THE STUDY:

- ERP software improves decision-making and cost reduction in logistics, yet challenges like warehouse efficiency and data security persist.
- Most respondents are male, aged 18-30, with Bachelor's degrees, and the majority are freshers. Blue Bharath Exim Pvt Ltd is content with its ERP tool despite limited budget constraints.
- ERP systems optimize logistics processes but may require customization. Data accuracy is vital for informed decisions, and ERP should enhance collaboration with suppliers for supply chain efficiency.

SUGGESTIONS:

- Customize ERP software for real-time tracking, inventory optimization, and demand forecasting.
- Integrate IoT devices and ensure seamless integration with TMS and WMS.

- Develop a user-friendly dashboard and provide comprehensive training to maximize ERP utilization.
- Address user dissatisfaction and neutrality to enhance overall satisfaction.
- Improve order processing and transportation modules to ensure compliance.
- Enable mobile accessibility for remote work and stay updated on industry regulations.

CONCLUSION:

optimizing ERP software in logistics and supply chain management offers opportunities for efficiency, cost reduction, and performance enhancement. Customized dashboards, IoT integration, predictive analytics, and compliance management streamline processes and boost competitiveness. Investing in user training, change management, and ongoing evaluation ensures successful implementation and adoption, enabling greater visibility, agility, and responsiveness in the business landscape.

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