

# Chapter 3

## A Systematic Review on ERP and Supply Chain Management

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### **ABSTRACT**

*Modern business operations rely heavily on enterprise resource planning (ERP) systems since they offer integrated solutions for handling many organizational activities. This abstract looks at how enterprise resource planning (ERP) and supply chain management (SCM) complement one another to boost productivity, visibility, and competitiveness in today's globalized market. ERP systems provide a centralized platform for data administration, facilitating efficient communication and coordination across the whole supply chain. Thanks to this integration, processes are improved, lead times are shortened, inventory levels are decreased, and customer satisfaction is increased. Additionally, putting ERP systems in place enables companies to respond rapidly to volatile markets and altering consumer needs.*

### **1. INTRODUCTION**

ERP (Enterprise Resource Planning) solutions are now essential tools for businesses looking to improve operational efficiency and optimize corporate processes. Likewise, efficient supply chain management (SCM) is necessary for organizations to satisfy client needs while continuing to run cost-efficiently. The main ideas and advantages of ERP and its integration with supply chain management are summarized in this abstract, which is supplemented by pertinent references (*Stadler, 2014; Gao et al., 2018*). To provide real-time information sharing, decision-making, and process automation, ERP systems act as central repository of information and functions for use by many departments within an organization.

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These technologies can generate a continuous information flow when used in conjunction with SCM, improving visibility and control across the supply chain.

Supply chain management (SCM) and enterprise resource planning (ERP) are two essential components of contemporary business operations. Every one of these functions is important to the smooth operation of organizations since they all work to increase productivity, simplify procedures, and increase customer satisfaction. We will examine the foundational ideas of ERP and SCM in this introduction, stressing their importance in the modern business environment. ERP, or enterprise resource planning, is a comprehensive software program that unifies and automates key corporate operations like accounting, human resources, purchasing, production, inventory control, and customer relationship management. ERP systems act as central processing and data hubs, allowing businesses to capture, store, and distribute information instantly. Through this integration, visibility is improved, data-driven decision-making is made easier, and cross-functional cooperation is encouraged. ERP systems are created to replace siloed, fragmented systems with a single, unified platform, promoting accuracy and uniformity throughout an organization's activities. By doing this, they support businesses in maximizing resource utilization, lowering operating expenses, and improving overall effectiveness. Additionally, implementing ERP gives businesses the ability to manage intricate supply networks, comply with legal obligations, and react quickly to changing market conditions (Kovács & Paganelli, 2003; Taghipour et al., 2023b).

SCM includes all activities involved in the production, distribution, and acquisition of goods and services, including their planning, execution, and control. Its main objective is to make sure that items move seamlessly from suppliers to final consumers while reducing costs and boosting customer satisfaction. Demand forecasting, inventory management, production scheduling, logistics, and supplier relationships are among the important issues that SCM handles (Ko et al., 2010; Lebosse et al., 2017). Organizations must have effective SCM if they want to survive in the globalized, customer-focused business world of today. Businesses can use it to cut lead times, improve supplier collaboration, minimize inventory levels, and deliver goods to customers when and where they're needed. By minimizing waste, lessening environmental impact, and enhancing social responsibility within supply chains, SCM also plays a crucial part in sustainability initiatives.

The internal functions of an organization are supported by ERP systems, and the flow of goods and services from outside the company is optimized by SCM (Rashid et al., 2002; Taghipour et al., 2021). Together, they give businesses the flexibility they need to respond to changing market conditions, increase their competitiveness, and satisfy stakeholders' and consumers' changing needs.

## **2. WAREHOUSE MANAGEMENT**

Goods are delivered by trucks, undergo quantity verification and quality checks at receiving docks, then are labeled, and potentially reassembled before being transported to storage as shown in Figure 1. Subsequently, order picking is performed to retrieve products based on customer or workstation requests, which may involve accumulating and sorting multiple SKUs before shipping or production. Warehouse management aims to efficiently coordinate all warehouse processes, involving planning and control to meet customer demand and ensure effective operations. Planning encompasses tactical (short-term) and operational (daily) decision-making, while control ensures desired outcomes are achieved through reactive measures (Van den Berg & Zijm, 1999).

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