

Role Of Digitalization In Improving Supply Chain Management: A Quantitative Investigation

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Abstract

Innovations pique people's interest, inspire them, and enhance their quality of life. The majority are constant adjustments used to keep ahead of the competition, but digital innovation redefines the market. The idea of digital management of supply chains will be crucial in the future. Digitalization has affected every facet of businesses, including operating styles and supply chains. Today's enterprises can change their supply chain structures from a hybrid of printed and IT-supported procedures to more adaptable, open, quick-moving, and participatory digital models thanks to Technology like RFID, GPS, and sensors. Different from hybrid supply chain approaches, which have led to rigid organizational structures, unavailability of data, and fragmented connections with partners, digital supply chains enable the automation of business operations and the digital management of firm assets. In the future supply chain networks, threat management will require an electronic supply chain risk monitoring system. Digitalizing the entire supply chain will make a considerable quantity of current information available, enabling speedier detection and response to any issues.

Keywords- *digitalization, supply chain management, digital management, partner interactions, company assets, IT-supported procedure.*

Introduction

Demand has recently evolved into a crucial strategic instrument for managing the industrial sector. Businesses that use overseas

sourcing methods must balance the benefits of cost-effectiveness with the drawbacks of OFF Offshore productions. One of the essential aspects of enhancing the efficiency of supply chains, which is necessary to achieve cost-effectiveness, is the capacity to minimize supply chain uncertainty. Supply chain management controls the processes that purchase resources and services, change them into intermediates goods and final commodities/products, and then transfer them to a transportation system to the point of consumption.

The flow involves transporting and storing both beginnings and commodities still in production as well as inventory and finished goods. It also contains the information needed for each action or process. The performance of conventional and digital chains of custody differs fundamentally. The methods and documents used in traditional supply chains are a combination of computerized and paper-based (Al-jawazneh, 2016). Functional and regional silos within the corporate structure frequently prevent open information sharing and result in subpar performance. On the other hand, digital supply chains provide improved digital platform-to-platform communication and collaboration and have the capacity for expanded access to data, leading to a rise in dependability, agility, and effectiveness. The delivery of digital material by electronic means is included in the digital supply chain. Starting at the place of origin, digital media must go through several processing steps before the consumer can use it.

The "Internet of Things" is a brand-new digital supply chain management idea. It only describes the current trend of connecting

common objects to the internet and one another (Rai et al., 2006). Because of this, almost anything you can conceive of uses wireless and near-field transmissions to communicate with other devices and the internet without human intervention. Whirlpool, for instance, has created cutting-edge Technology that enables users to start washing clothes from their iPhones. Thanks to the Internet of Things, manufacturing technologies can be connected to and communicate with one another in the factory. This could be a flaw in the product, the packing, or the machinery. This offers enormous potential for improving business processes, cutting down on waste and downtime, and raising quality. Over the past few years, multiple industrial trends have increased supply chain vulnerability (Matt et al., 2015). All supply chain participants may be negatively impacted by a supply chain glitch (a mismatch between supply and demand). Businesses often develop supply chain risk control departments to lessen the impact of these kinds of supply stream faults (Ben-Daya et al., 2015). This is because supply chain risk leadership has historically become a significant supply chain administration profession due to the rising number of events causing disruptions in the supply chain.

The World Wide Web (WWW) of Things (IoT) is increasingly crucial to a successful, modern supply chain. The IOT will perform various process upgrades, proactive maintenance, and figuring out how to move things more effectively. However, the DSN could greatly increase the IOT's current technical constraints because it depends on data exchange. For instance, data can be distributed across various places, operations, and even enterprises using the connected devices of the IOT.

Literature Of Review

Marinagi et al. (2014) said that implementing cloud computing provides business organizations with a great opportunity to excel in all facets of their operations and being a

strategic choice. In reality, what was once thought of as a tool that consumes a lot of money, work, and time is already available and extremely affordable. The potential of cloud computing technology to make sharing information and resources much easier than in the past, rather than intense competition, is what is driving the convergence in cooperation between competing enterprises.

Gezdur & Bhattacharjya (2017) concluded that such a business vision was developed as a result of ongoing conversations about the "digital revolution" and "disruptive competitive advantages." However, it is still unclear what the phrase means and how it will affect businesses. This essay fills the vacuum and focuses on the implications and opportunities of commerce for managing supply, demand, and distribution. The empirical results support the need for and presence of the maturity level, but they are merely a starting point for additional quantitative research. Due to significant investment expenses and equally high expectations, the data also show pessimism. The presented work contributes to our understanding of transformation and supply management because current studies about digitalization are quite in the context of particular firm functions.

Hu & Haddud (2017) revealed that businesses from almost every industry have started a number of projects recently to investigate and benefit from new digital Technology. Typically, this entails adjustments to critical business processes that affect the company's products, procedures, organizational frameworks, and management theories. It is essential to create a primary idea known as the digital transformation strategy to handle and carry out digital changes within an organization efficiently. Large segments of organizations frequently experience considerable differences in their supply chains, corporate processes, channels of sales, and product lines as a result of the use and adoption of digital Technology. Just a few of

the many potential benefits of digitization include rises in sales and efficiency, novel methods of value creation, and inventive methods of interacting with consumers.

Huddar et al. (2017) found that to remain viable in the current business environment. Individual enterprises must actively participate in a more extensive logistics system that involves an ecosystem of other companies and partnerships. Because of this, supply chains function in a continually changing environment and are vulnerable to various risks from all directions. This ecosystem is a dynamic landscape with many different influences. Due to their extensive geographic reach, many transportation networks are subject to several global dangers. Customers' demands for higher levels of service, lower prices, and more individualized products are growing. In many industries, fast clock speeds result from rapid technological advancements and the ongoing release of new goods, which has led to increased product complexity.

Grover and Saeed (2007) studied that managing supply chains (SCM) nowadays must contend with rising customer expectations and growing global competition. One element that allowed supply chains to be integrated into value systems was the development of information technology practices and procedures. The competitiveness value of IT methods and processes for SCM was examined using a cross-sectional group of companies in the Northern Greece region. A structured questionnaire used in the field study was created based on various criteria used in past empirical studies. The results confirm the significant role that IT processes and techniques play in developing a sustainable competitive advantage based on supply chain management. Therefore, making the most of IT investments could help businesses become more profitable and productive.

Shaik and Abdul (2013) discussed that Technology presents an opportunity to boost efficiency and profitability by enhancing supply networks. Undoubtedly, Technology has significantly affected the escalating

competition among distribution networks and between different businesses. Organizations in the food industry must consider the costs and benefits of a given technology before choosing whether it is appropriate for their specific business model. The possibilities available to managers and stakeholders to integrate electrical appliances, information technology, and environmentally conscious Technology into their supply chain

Bruque et al. (2015) highlighted that work empirically investigates the impact of digital disruption on B2B interdependencies. The elimination of physical items is altering how enterprises position themselves in the supply chain because of reduced production and shipping costs and the different ways businesses engage with customers. In particular, these altered market dynamics might give downstream industries additional sway. Additionally, upstream companies can still benefit from added value through the Internet if their productive firms offer elements that are difficult to duplicate. The background for the analysis is the publishing sector.

Casey et al. (2012) said the integration of the digital supply chain is evolving quickly. Access to consumer demand must be effectively shared, and goods and service supplies must be kept under close watch to provide insight into the supply chain. The framework for integrating corporate processes is provided by standards and reference designs, which ought to promote the complete integration of product data. Through specialized intermediaries, industry operators integrate interprets and data. These intermediaries' role is to foster interoperability through incorporating and visualizing association-specific data for various organizations and systems.

Objectives of the study

To measure the role of digitalization in improving supply chain management

Research Methodology

This study is empirical in nature. In this study 199 respondents were contacted to review the digitalization in improving supply chain management. The data analysis was done with the help of the frequency distribution.

Data Analysis and Interpretation:

Table 1 Digitalization of the supply chain enables real-time tracking of inventory levels and shipping status allowing for better coordination and increased efficiency

Particulars	Agree	Disagree	Can't Say	Total
Respondents	147	29	23	199
% Age	73.87	14.57	11.56	100

Table 1 presents that with the statement digitalization of the supply chain enables real-time tracking of inventory levels and shipping status allowing for better coordination and increased efficiency, it is found that 73.87% of the respondents agree with this statement.

Table 2 Increased visibility helps in better demand forecasting, identifying bottlenecks and inefficiencies, and improving overall supply chain performance

Particulars	Agree	Disagree	Can't Say	Total
Respondents	145	33	21	199
% Age	72.86	16.58	10.55	100

Table 2 presents that with the statement increased visibility helps in better demand forecasting, identifying bottlenecks and inefficiencies, and improving overall supply chain performance, it is found that 72.86% of the respondents agree with this statement.

Table 3 Digitalization promotes collaboration across different departments, suppliers, and stakeholders in the supply chain

Particulars	Agree	Disagree	Can't Say	Total
Respondents	141	35	23	199
% Age	70.85	17.59	11.56	100

Table 3 presents that with the statement digitalization promotes collaboration across different departments, suppliers, and stakeholders in the supply chain, it is found that 70.85% of the respondents agree with this statement.

Table 4 Digitalization enables supply chain managers to quickly respond to customer demands, provide accurate tracking information, and ensure timely delivery

Particulars	Agree	Disagree	Can't Say	Total
Respondents	140	37	22	199
% Age	70.35	18.59	11.06	100

Table 4 presents that with the statement digitalization enables supply chain managers to quickly respond to customer demands, provide accurate tracking information, and ensure timely delivery., it is found that 70.35% of the respondents agree with this statement.

Conclusion

The conventional supply chain has a weaker position regarding company policies in global competitiveness. Because the Supply Chain model is beginning to incorporate a new digitalization paradigm. Supply Chain Management is becoming more straightforward, cost- and time-effective, and effective because of new technologies like RFID, ERP codes, GPS technology, etc. But the "Internet of Things," based on RFID

technology, has been incorporated into every aspect of the management of supply chains and significantly impacts how it develops. The use of the Internet of Things, ERP-Software, and EPC code enhance the organization's supply chain model. "Digital supply chains have the capacity for vast data availability and outstanding collaboration that result in improved reliability, agility, and effectiveness."

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