Chapter 2

Supply Chain Management Security Issues and Challenges in the Context of AI Applications

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ABSTRACT

Logistics generally relates to the careful preparation and performance strenuous activity. To meet the needs of customers or enterprises, logistics is broadly defined as managing the flow of items from their point of production to their location of consumption. According to studies, up to 90% of a company's sustainability consequences are attributable to its supply chain. These crucial supply chain flaws have been made public by the COVID-19 pandemic. Additionally, businesses are making many sustainability pledges because of legislative and consumer pressure for climate action. Current procedures have the potential to be streamlined with artificial intelligence (AI) innovation in logistics. Numerous developments are pushing automation to the top of the logistics CEO's agenda. The first step toward extensive optimization is automation, which many businesses have already adopted to maintain competitiveness.

1. INTRODUCTION

Most likely, artificial intelligence is the most significant project humanity has ever undertaken. Compared to fire or electricity, it is more profound. There will be a new wave of digital disruption caused by AI that will reshape sectors and propel unprecedented levels of innovation. Opportunities to leverage AI's advantages are particularly abundant in the supply chain, which is one of the most data-rich settings within businesses.

A new era of change is upon us, as this saying suggests. The digital revolution is having a tremendous effect on many aspects of our society, much like the agricultural and industrial revolutions did before it (Alexandre & Dmitry, 2021; Entrepreneurship and management, 2021; Krykavskyi et al., 2019; Krykavskyy et al., 2021). Artificial intelligence (AI) is at the heart of this transformation since it has rapidly spread from academic institutions into all facets of society. Business and consumer benefits from AI-driven applications like smart robotics and self-driving cars are already becoming a reality. Organizations should rethink their entire structure considering the data-driven economy and the disruptive effects of technology. The supply chain, considered by many to be the lifeblood of every organisation, is included in this. (Ajaikumar et al., 2021; Dmitry & Alexandre, 2021; Fosso et al., 2021; Krykavskyy et al., 2019; McKibbin & Fernando, 2020) claims that it is one of the business processes where AI can have the greatest impact. SC managers need to be familiar with the variety of applications for AI and their attendant merits and perils if they are to fully capitalise on this promising new field. The work's purpose is to help people grasp this concept by using a pragmatic strategy that involves presenting and evaluating prospective AI applications within the SC framework. The first section of this study is an attempt to define AI by examining its broader setting (Ahmad, 2020; Lallie et al., 2021; Razaque et al., 2019; Rodela et al., 2020; Samtani et al., 2020). The definition, primary subfields, and driving forces of AI will all be investigated. The technology and its possibilities will then be demonstrated through an examination of application cases across a range of industries and businesses. The first section will wrap up with a discussion of the advantages and disadvantages of AI as well as some predictions for the future. Expands on these understandings by analysing the technology in the context of SCs (Hiscox, 2019; Khan, Brohi, & Zaman, 2020; Williams, Chaturvedi, & Chakravarthy, 2020). The analysis of AI applications in SC will build on the definition of generic SC components. In the last section, qualitative expert interviews are used to evaluate the overall effect, advantages, hazards, and future implications of AI on the separate SC components. Using AI to manage the supply chain in fig 1.

Supply chain management and digitization are two areas that firms are focusing on more and more as ways to improve their operations. Supply chain management

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