Chapter 4
Applications of New Technology in Operations and Supply Chain Management:
Consideration of the Path of Sustainable Development and Green Activities

Biljana S. Ilic
https://orcid.org/0000-0001-6137-8478
Faculty of Project and Innovation Management "Petar Jovanovic", EDUCONS University, Belgrade, Serbia

Bojana Ostojic
https://orcid.org/0000-0001-6731-431X
Faculty of Project and Innovation Management "Petar Jovanovic", EDUCONS University, Belgrade, Serbia

Dragica Stojanovic
Ministry of Education, Science, and Technological Development of Serbia, Serbia

Gordana Djukic
https://orcid.org/0000-0001-5419-0725
Faculty of Economics, University of Belgrade, Serbia

ABSTRACT

Due to the importance of supply chains, it is no wonder that most of the trends in this area relate to the improvement of the chain itself through the increasing use of new business models. Supply chain technology also uses robotics, internet of things (IoT) and blockchain which are predicted to speed up the chain and reduce the occurrence of adverse events. Apart from supply chain statistics, it is good to be aware of the latest trends in the field. If the organization becomes familiar with trends and problems as soon as possible, it will be able to adapt to the changes that are coming faster. Human resources are of great importance, because without well-qualified employees, business in organizations cannot progress and follow new ways of working. The chapter will provide an overview of certain development assumptions for supply chains in the near future, with a focus on human resources and their importance for modern

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“green” activities. Together, it paves the way for sustainable development.

1. INTRODUCTION

Supply chain management (SCM) involves a variety of tasks and calls for meticulousness. Due to their significance, the majority of trends in the supply chain industry are related to improving it through the introduction and expanding adoption of new business models. Robotics, the Internet of Things, blockchain, and other cutting-edge technologies are all used in supply chain technology. According to certain predictions, using the new technology would accelerate chain operations even more and hence prevent numerous issues (Taghipour et al, 2023a; Taghipour et al., 2023b). The modules and features of SCM serve as the basis for the design of the majority of enterprise resource management software packages. The software package enables managers to optimize the supply chain, guarantee proper operation, and prevent unintended events that could harm the chain's participants and users (Ilic, et al., 2023). Because “green” is being used more and more in recent years in addition to the many activities of modern mankind, supply chains are getting greener. The economy, ecology, and social movements are all in harmony in today's society because of sustainable development (Ilic & Stankovic, 2023). Environmentalists are encouraging the supply chain to become less destructive to the environment. They are also being helped by consumers who are becoming more environmentally conscious. Since transportation and electricity are two of the biggest sources of CO2 emissions, green logistics is growing in popularity (Taghipoure, 2023c).

One of the many developments affecting warehousing is green logistics. The circular flow of green logistics, or green sustainability, is depicted in Figure 1. Ecological warehouses include cutting-edge energy management systems that use meters to track how much power, heating oil, water, and gas are used throughout every facility. Such systems assist in reducing resource overuse (Ilic & Stankovic, 2023; Taghipoure et al, 2022a). Supply networks are using more electric and solar-powered cars; by using these vehicles, the chains' overall carbon footprint is decreased. Similar to this, supply chain management will become more and more crucial in the years to come. Climate change-related changes to the environment have an impact on the supply of resources and materials, which can disrupt the supply chain. Companies will need to consider these elements and look for other resources (Ilic et al., 2023; Taghipoure et al, 2022b).