Chapter 5
Review and Analysis of Applications and Frameworks of Information Systems in Supply Chain Management

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ABSTRACT

In this era of information systems, humankind has benefitted enormously. The rapid growth in information system technology has made human life very easy and has significantly increased the efficiency, speed, and reliability of different processes. It is the need of the hour to study the interface between the information system and supply chain management. This chapter specifically tried to study the applications and frameworks of information systems in operation and supply chain management. For the study, the authors reviewed the articles published in top-quality journals. This chapter aimed to identify and discuss how different information systems frameworks solve problems related to operation and supply chain management. This study dealt with seven subsections involving supply chain, logistics, partnership, transparency, and decision-making. The study further identified that the use of information systems also contributes to competitive advantage. Finally, the understanding from the literature review has been concluded, and the existing gap has been highlighted for future research.

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1. INTRODUCTION

The rapid growth in information system technology is having a huge impact on all aspects of human life. Information systems are also significantly contributing to supply chain management by improving its efficiency, speed and reliability. There has been a significant number of research happening in the interface of information systems and supply chain management. The future is also very bright for this area. The world is continuously witnessing the growth of information systems and their applicability in operation and supply chain management (Narasimhan et al., 2000; Gunasekaran et al., 2004; White et al., 2005; Lu et al., 2013). So, it is very important for researchers as well as practitioners to have updated knowledge of the application and frameworks of information systems in operation and supply chain management. To the best of the author's knowledge, there are no research articles that specifically deal with the application and frameworks of information systems in operation and supply chain management. So, this book chapter is an attempt to address this gap.

Information system solves many deep rotted problems related to operation and supply chain management, and information systems-enabled operation and supply chain network is the need of the hour (Gunasekaran et al., 2004). For a fast, optimised and reliable operation and supply chain, information systems research and frameworks are very necessary. The chapter aims to cater to this need of researchers wherein they can find all the frameworks, their application, and their result in the operation and supply chain context. This chapter will help the target audience to further their exposure to theoretical and conceptual frameworks in the context of information system-enabled operation and supply chain management. This paper tries to analyse how the different aspects of operation and supply chain management have evolved due to advances in information system technology. The chapter mainly focuses on the application of information system technologies in operation management, supply chain management, logistics management, supply chain transparency and decision-making. The study also identifies certain frameworks for the integration of information systems in operation and supply chain networks. Finally, the study also shows whether information systems can be effectively used for the purpose of fast, optimised and reliable decision-making. With these objectives, the study is presented in the following sections:

- section-1 dealt with the introduction of the study
- section-2 presents the research methodology
- in section-3 and its subsections, the application and frameworks of information systems in operation and supply chain management are presented
- in the last section, the conclusion and future research directions are discussed