

A review of modelling approaches for supply chain planning under uncertainty

Abstract

Since 1959 in which one of the earliest attempts to address the problem of developing a coordinated link in a supply chain (SC) was performed by [1], managing SC performance has been a main challenge among enterprises. Supply chain planning (SCP), as one of the most important processes within the supply chain management (SCM) concept, has a great impact on firms' success or failure. SCP decision has been greatly influenced by the presence of uncertainty from the intricate nature and dynamic relationship among various stages involved in the SC network. This paper aims to present an extensive review of the existing literature to acquire a deep understanding of modelling approaches used in the area of SCP under uncertainty. The research main objective is to provide a classification framework based on the following elements: problem types, sources of uncertainty, performance measures, and modelling approaches that were exploited by previous researchers. We have conducted a survey of various journal papers dated from 1993 to 2012. In conclusion, some guidelines regarding future areas of research have been identified.