

The impacts of Information system on supply chain flexibility and its opportunities and challenges

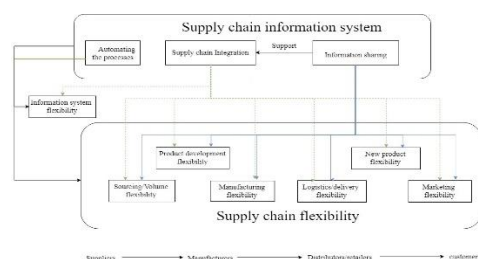
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In today's business, increasing demand uncertainties and high competitive pressure urges companies to shorten product life cycles and the lead time and to increase product variety and launch speed. Within the context, supply chain flexibility (SCF) is defined as a major competitive weapon to quickly respond to environmental changes. Implementing information system (IS) is one of the major ways to facilitate supply chain flexibility, complex supply chain management strongly relies on information system to monitor dynamic operational parameters.

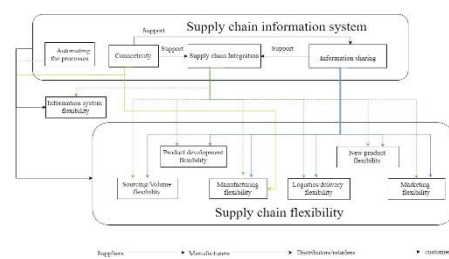
A consensus or comprehensive description on how information system tailor with and work on supply chain flexibility to achieve better dynamic capability are critical for the industry, and leave a gap in the research, which becomes the purpose of this thesis to fill in.

Through systematic literatures review and semi-structure interview at three companies: Optilon, Bosch and Co-sunjoy, two conceptual frameworks are proposed which include main aspects regarding SCF such as the driving element and performance measurement. In addition, two conceptual models are built to indicate the interrelation between SCIS and SCF. There are two main blocks: supply chain information system and supply chain flexibility which include main IS functions and flexibility dimensions. Each function and dimension are connected via IS activities. The variables that can impact the implementation of SCIS, and the SCF performance metrics are also presented. The two models provide the guidance for companies to adapt and to optimize information system to align with their strategic objectives. Based on the perspectives of IS provider and users, the IS function, activity and relevant contents of the two models have slight differences. This indicates that the model and framework might be modified according to practical needs, such as organizational background, business sector, product structure etc.

This research properly solves the research questions and generates overall understanding towards the research topic. SCF is redefined as “the ability of company to effectively and efficiently respond to uncertain customer requirements in order to acquire competitive advantages by making changes, such as adjusting the resources, process and even the supply chain configuration.” The conceptual models as followed provide a series of IS activities which indicate the interrelation between SCIS and SCF. In addition, researchers summarize two main megatrends: complete digitalization and machine learning, and some challenges of SCIS to promote SCF. The research basically fulfills the research purpose, to increase the generalizability, empirical studies in different industries are needed for further research.



From IS provider's perspective



From IS users' perspective