

# Chapter 74

## How Smart Operations Help Better Planning and Replenishment?

### Empirical Study – Supply Chain Collaboration for Smart Operations

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#### **ABSTRACT**

*This chapter discusses various roles of smart information in Supply Chains (SC) of digital age and tries to answer an important question - What types of collaborative arrangements facilitate smart operations to improve planning, production and timely replenishment? We have conducted longitudinal case studies with firms practicing SC collaborations and also using smart information for operations. Based on the case analysis, the companies are further classified as 'smart planning' and 'traditional planning'. Research findings show the importance of aligning SC partnerships based on smart information requirements. These findings are based on case studies of Indian firms with global SC collaboration. We also discuss the role of Big Data for the companies using smart planning.*

#### **INTRODUCTION**

In current competitive business scenario, it is widely recognized that supply chains, not individual organisations, are responsible for the success or failure of businesses. This has necessitated close relationships among supply chain (SC) members. In the past few decades, in an attempt to improve the overall performance and the efficiency of SCs, many companies have been engaged in collaboration with other SC members. Consequently, several SC management initiatives such as Vendor Managed Inventory, Efficient Consumer Response, Continuous Replenishment and Accurate Response have been proposed in the literature to improve the flow of materials as well as information (Sari, 2008; Ramanathan &

DOI: 10.4018/978-1-5225-3909-4.ch074

Muyldermans, 2010). In this line, Collaborative Planning Forecasting and Replenishment (CPFR) is a relatively new initiative that combines the intelligence of multiple trading partners in planning and fulfilment of customers' orders by linking real time sales data and marketing best practices. In this chapter, we have used the case study approach to understand the actual level of collaboration among SC partners for information exchange. The companies (or firms) chosen for this purpose of study have global operations, maintaining SC collaborations with upstream and downstream partners. These studies are rather used to compare the supply chain collaboration (SCC) practices in information exchange and smart operations, and not intended for cross-country comparison.

In general, businesses interested in improving either cost effectiveness or overall SC performance tend to collaborate with other SC members (McIvor et al., 2003; McCarthy & Golicic, 2002; Matchette & Seikel, 2004). In this line, the businesses with similar objectives work closer to achieve the desired excellence in common SC processes such as planning, forecasting, production and replenishment (Ramanathan & Muyldermans, 2010). However, the extent and intensity of collaboration vary greatly based on individual business objectives, which in turn define the level of SC collaboration (Larsen et al., 2003, ECR Europe, 2002; Ramanathan, 2012). Precisely, the company's attitude and behaviour towards transparent information exchange in line with their business objectives decide the level of collaboration. In SC collaborative relationships, information exchange is considered an integral part of bridging all the SC members (Ramanathan & Muyldermans, 2010). While, the exchange of point-of-sales (POS) information and inventory records are widely encouraged within the SCs (Gavirneni et al., 1999; Raghunathan, 1999), the role of other real time information such as promotional plans, forecasts and production levels for planning are not much discussed in great detail in the literature. Until recently, significance of smart planning and role of social media are not explained in such a way to motivate many SC members to use and analyze big data for business enhancement.

The research study reported in this chapter explores the operations of supply chain collaboration and highlights the corresponding benefits in different firms using case studies of companies operating in 'smart planning' and 'traditional planning' environments. The main reason for considering two different types of companies is that the information exchange may or may not be important for companies operating in traditional planning (similar to make-to-stock) as the general objective of the business is selling the products in stock (both finished and work-in-progress stock). Meanwhile, in smart planning environment the production is mainly based on the real time demand or orders placed by the downstream buyers and hence there may or may not be a need for other information. In simple terms, 'smart planning' uses real time data and 'traditional planning' uses historic data. In this research, the role of information exchange among collaborating partners is analysed with a focus on its role in demand planning. Here real time data refers to the sales data, information from social media such as twitter, Facebook, on-line feedback and complaints.

The rest of the chapter is organized as follows: Section 2 explores the literature on SC information exchange and also describes the research approach of this study. Section 3 explains the research design and the role of case companies in the SCs. Section 4 discusses the cross-case analysis in detail. The role of smart information in case companies are further discussed in Section 5. Based on the importance of SC information, the role of SC collaboration is analyzed in Section 6. Finally, section 7 summarises the findings and also discusses the possible future work.

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