Chapter 5
Supply Chain Analysis

Mohammad Anwar Rahman
University of Southern Mississippi, USA

ABSTRACT
This chapter focuses on supply chain strategies that benefit organizations to meet the global challenges and business success. The chapter supports understanding of functional coordination in supply chain management, importance of supply chain partnership and performance measures, bullwhip cause-effect and consequences, business promotion strategies, and approach to synchronize operation schedule to improve supply chain operations. Bullwhip effect is often seen as a challenge to improve supply chain performances. It also discusses the strategies to reduce bullwhip effect, various well-known contract agreements that are currently practiced by many supply chain organizations, its impact and benefits on supply chain success.

INTRODUCTION
In today’s competitive market, business success depends on customers’ satisfaction, product quality, timely service and delivery, and competitive price. The supply chain integrates industry partners such as product manufacturers, suppliers, warehouses, transporters, and retailers together to form a network to satisfy the customers’ request efficiently. Simchi-Levi et al. (2007) describes supply chain as synchronized business functions where raw materials are procured and items are produced at one or more factories, shipped to warehouses for intermediate storage, and then shipped to retailers or customers. The main focus of the supply chain partners is to develop strategies that benefit their organizations, reduce system wide costs, satisfy service level requirements and meet the global challenges for business success. The strategies defined in a supply chain as such that the production of the products and the distribution emerged in the right quantities, to the right locations, and at the right time. It is essential to monitor the implementation of the strategies and make the necessary adjustment for the strategy to be effective.

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Supply chain coordination is the sharing of a set of goals and objectives with all partners. Demand variations and global market challenges often seen as the main challenge to the partners to improve the supply chain performance. The functional coordination, joint business promotion strategies, synchronized operations, strategies to reduce bullwhip effect, and various well-known contractual agreements currently practiced by many supply chain organizations, are the central focus for supply chain success.

Following topics are covered in this chapter:

- Importance of functional coordination in supply chain management.
- Inventory strategies and performance measures.
- Bullwhip effect in supply chain.
- Causes of Bullwhip effect in supply chain.
- Bullwhip effect reduction strategies.

Functional Coordination in Supply Chain Management

In the current state of the global economy and volatile market environment, companies in a supply chain require to act together. The coordination among supply chain trading partners is crucial for cost mitigation and revenue maximization. The central focus for companies is to bring products from sources to markets together. Companies share and manage product procurement, marketing and shipping in collaboration. Information technology allows supply chain partners to share demand and inventory data quickly and inexpensively. However, Cachon and Fisher (2000) describes that implementing information technology to accelerate and smooth the physical flow of goods through a supply chain is significantly more valuable than using information technology to expand the flow of information. The performance of the entire supply chain depends on the coordinated effort of each supply chain partners. Lack of coordination can result in one partner in a supply chain shouldering the majority costs, risks the price escalating. Coordinated contracts allow the risk of rising prices to be shared across the supply chain, as well as, the customer.

In supply chain, companies connect the strategic partners to produce and procure low costs but high quality products. The companies find the best logistics transport and support for reliable and faster delivery. The optimal supply chain coordination does not always mean the fastest operation; it may adequately mean to provide time sensitive delivery or pickup, quality product with low cost, and well-managed customer service. Figure 1 illustrates the relationship between supply chain partners and the product flows across a supply chain.

Variability in any service implies additional risks and uncertainty. The larger the uncertainty

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