

Understanding the Supply Chain and Strategic Fit

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Supply chain management various stages takes a systems view regarding all processes needed to bring a product to the final customer. Hence, the value creation process extends beyond the boundaries of a single business, and involves integrated business processes among the suppliers, manufacturers, and customers (Vanpoucke E. et al., 2009). Purchasing a can of soda at a convenience store can be an example of how a convenience store supply chain functions. The soda starts out with a drink manufacturer such as Coca-Cola, which often uses raw materials suppliers like sugar and a bottling plant. After the soda can are complete they can then be shipped to out to a convenience store where a customer purchases and consumes the soda. After the soda is sold, information about the sale is sent back to the distributor through sales data. This sales information flows upstream, which gives the opportunity for the distributor to plan production and shipments. The customer pays the retailer, the retailer pays the wholesaler, and each pays its suppliers. Hence, when the customer purchases a soda, the money flows back through the supply chain, completing the financial cycle for that item.

Why should a firm such as Dell take into account total supply chain profitability when making decisions?

A firm like Dell should consider total supply chain profitability since its decisions affect all partners involved. Dell has the ability to negotiate with suppliers but does not mean the company should be greedy and not let their suppliers thrive. If Dell focused only on its own profits by squeezing suppliers with unfair contract terms, then suppliers might cut corners or exit, affecting the long-term chain viability or even pushing the increased costs to the customers. By working together with suppliers in sharing forecasts and cutting out retailers, Dell is able to reduce its costs and be able to offer their products at more favorable prices. As Dell also depends on suppliers the company should work together in order to have the suppliers relieve some of the consequences of uncertainty. This is consistent with the "pull" principle and may improve the supply chain efficiency when the supplier is better positioned to accommodate uncertainty due to an ability to risk pool (Cheng, Z. et al., 2017). These decisions can improve customer value and also improve the profits throughout the supply chain. Furthermore, by Dell sharing their production schedules and demand forecasts with key suppliers, the company can lower lead times and unnecessary inventory. If Dell had only considered its own profit, it might have stocked inventory of extra components internally and passed the warehousing costs along to its buyers.

What are some strategic, planning, and operational decisions that must be made by an apparel retailer such as Gap?

An apparel retailer like Gap must make decisions at each supply chain level that are essential and have an impact on the companies margins. Gap must decide where to locate its distribution centers and stores and how many. It can place distribution centers to improve the times on replenishing items to the United States versus international markets. It must also decide on whether to own its manufacturing or outsource to garment factories abroad since these decisions affect flexibility and overall costs. Furthermore, Gap needs to involve forecasting and inventory plans for each season since consumer behavior changes along with the seasons. Planning can involve setting promotions, pricing campaigns, and ensuring the store has the proper inventory on hand. Operational decisions also must be done to handle order processing and fulfillment for both store replenishments and online orders. When a customer walks in or places an online order, Gap's system decides which on hand inventory to use to fulfill it, which can be decided by the omnichannel system. For example, Gap's omni-channel strategy might allocate certain distribution channels to fulfill online orders and others for effective store replenishment.

Consider the supply chain involved when a customer purchases a book at a bookstore. Identify the cycles in this supply chain and the location of the push/pull boundary.

When a customer purchases a book at a physical bookstore, several supply chain cycles go into affect. The Customer Order Cycle begins as soon as the customer enters the store and asks for a book. The store then completes this order from its on hand inventory and completes the sale. Then the Replenishment Cycle involves the bookstore replenishing with a distributor to restock its inventory. In this case, the push/pull boundary is at the bookstores inventory. Everything up to stocking the store is done in the forecasted demand, which would be the push factor.

Consider the supply chain involved when a customer orders a book from Amazon. Identify the push/pull boundary and two processes each in the push and pull phases.

Amazon is able to provide the most value with the least amount of inventory and the push/pull boundary and the processes in each phases can depend on the production requirements for each book sold and the customization point where production shifts to customer specifications, location, and product complexity where the complexity is pushed and balance pulled. (Rossin, D., 2012). In an online order from Amazon, the push/pull boundary and processes differ from the book store case since Amazon can use its large data sets from customers previous purchases to be able to forecasts demand by region and pre-stock its Fulfillment Centers, which is a push strategy. Other online products can be pulled directly from its suppliers when an order is placed. The push processes can include demand forecasting and inventory management at each fulfillment center while the pull processes can include order management and

delivery. When a customer purchases a book online, Amazon's system can immediately find a copy from the nearest fulfillment center and arranges the fastest shipping option for on time delivery.

In what way do supply chain flows affect the success or failure of a firm such as Amazon? List two supply chain decisions that have a significant impact on supply chain profitability.

The flows of product, information, and funds have been essential to Amazon's success. Amazon's information on supply chain flows allows it to predict trends to be able to have items on stock and provide 1 or 2 day delivery in many markets. Two supply chain decisions show Amazon's supply chains profitability impact. First, the location and the capacity of its facilities since making the decision where to put each has a significant impact on transportation cost and speed. Second is the company's inventory strategy since Amazon needs to decide how to move products and how much inventory to hold. These choices influence factors like fulfillment speed and shipping cost. They are comparable to choosing transportation modes and inventory policies in the supply chain. Amazon makes decisions on their supply chain profitability knowing th affects it will have on faster delivery and supply chain automation.

List some of the strategic, planning, and operational decisions that an automotive manufacturer must make with regards to its supply chain.

An automotive manufacturer can come across difficult supply chain decisions during several stages of its supply chain operations. Strategic decisions can involve deciding how many assembly plants to build and where, and whether to produce their components like engines and transmissions themselves or or outsource to suppliers. Additionally, decisions on transportation infrastructure such as shipping by boats, trains, and trucks need to be considered in order to discover the capabilities and challenges of the entire supply chain as the manufacturer. Planning decisions need to cover production and inventory planning for at least the year and have a forecast based on its trends from the previous year to have the proper inventory. Finally, there will need to be operational decisions done on a daily bases at the factory to have the right amount of staff on site and the proper amount of vehicles on the assembly line.

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-Miguel Virgen, PhD Student

Further Responses and Discussion:

"Hi Miguel,

We shared a lot of the same ideas, but you were able to further supplement the thread with some concepts I had not considered. When it comes to Gap, I thought it was rather tricky to discuss forecasting compared to a book or a can of soda. Books and sodas do not change frequently. The soda might get a new can design or a recipe might be outdated, but not much else. A book may have hard- and soft-back prints, and unless it is a scholarly book, may not get multiple editions printed. Gap is a fast fashion company that produces large quantities of clothing that are intended to be worn for a season by tapping into fashion fads or trends that may not be in style within a year. Gap surely has its staple pieces, but much of its production is contingent on nailing the tastes and trends of the following seasons. Customers may love 90s wide-leg pants in the summer, but may find them difficult to pair with boots in the colder seasons. Stocking up on wide-leg pants in September might make it difficult for Gap to make its sales goals, and may end up sitting on inventory come December. While the forecast decisions are not made haphazardly and Gap has decades of experience in this field, it is relevant to understand that not all forecasts and production decisions are at the same level of complexity within industries and companies."

-Anamaria Alexander, PhD Student

"Hello Miguel. Your examination of the supply chain stages for a can of soda and Dell's supply chain profitability is insightful and highlights the complex flow of materials, information, and finances through the system. I would like to expand on your analysis by delving deeper into the complexities of supply chain dynamics and the importance of total supply chain profitability, using key scholarly resources and a biblical perspective.

Regarding the can of soda supply chain, you effectively described the stages from raw material suppliers to the end consumer. The robust supply chain game theory

discussed by Zhao et al. (2024) can further illuminate the decision-making processes involved. In a supply chain with a two-way information imbalance, firms need to strategically decide on when and how much information to share with partners. This is crucial because the soda manufacturer must decide how much sales data to share with its suppliers to optimize production schedules and inventory levels.

Moreover, Chopra (2019) emphasizes the importance of integrating information flows to enhance supply chain performance. For instance, when the convenience store sells a can of soda, the sales data should be quickly communicated back to the manufacturer. This timely information sharing enables better demand forecasting and inventory management, reducing the bullwhip effect—a common problem in supply chains in which small fluctuations in demand at the retail level lead to larger variances upstream.

From a biblical perspective, the principle of stewardship is relevant here. Proverbs 27:23 (NIV) advises, "Be sure you know the condition of your flocks, give careful attention to your herds." This verse underscores the importance of being aware and vigilant in managing resources, much as careful monitoring is required for effective supply chain management.

Furthermore, with Dell's Supply Chain Profitability, your point about Dell considering total supply chain profitability is well-founded. As noted by Zhong et al. (2025), firms operating under conditions of price, demand, and yield randomness must adopt a robust distribution approach. For Dell, this means creating contracts that accommodate uncertainties in supply and demand. By fostering collaborative relationships and sharing demand forecasts with suppliers, Dell can mitigate risks and ensure a steady supply of components.

Also, Chopra (2019) discusses the significance of aligning incentives across the supply chain. By focusing on overall supply chain profitability, Dell can avoid confrontational relationships with suppliers and instead foster partnerships that support mutual growth. This alignment can lead to innovations in supply chain processes, such as just-in-time delivery and lean inventory practices, which benefit all stakeholders.

In practical terms, Dell's strategy of bypassing retailers and selling directly to consumers exemplifies a streamlined supply chain model. This approach reduces costs and enhances responsiveness to market changes. By leveraging technology and data analytics, Dell can better predict consumer demand and adjust production schedules accordingly. This agility is crucial in today's fast-paced market environment, where consumer preferences can shift rapidly.

From a biblical perspective, Philippians 2:4 (NIV) states, "not looking to your own interests but each of you to the interests of the others." This principle aligns with Dell's strategy of considering the well-being and success of its suppliers, which ultimately enhances the entire supply chain's effectiveness and sustainability.

In conclusion, the complexities of modern supply chains require a holistic approach to management that incorporates strategic information sharing and alignment of incentives. By understanding the dynamics of supply chain interactions, companies like Coca-Cola and Dell can optimize their operations, reduce costs, and enhance

customer satisfaction. The scholarly resources provided offer valuable frameworks and insights that can be applied to real-world supply chain challenges, reinforcing the importance of collaboration and integrated decision-making in achieving supply chain excellence."

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