

Decision Phases In a Supply Chain

Successful supply chain management requires many decisions relating to the flow of information, product, and funds. These decisions fall into three categories or phases, depending on the frequency of each decision and the time frame over which a decision phase has an impact.

1. *Supply chain strategy or design*: During this phase, a company decides how to structure the supply chain over the next several years. It decides what the chain's configuration will be, how resources will be allocated, and what processes each stage will perform. Strategic decisions made by companies include the location and capacities of production and warehouse facilities, the products to be manufactured or stored at various locations, the modes of transportation to be made available along different shipping legs, and the type of information system to be utilized. A firm must ensure that the supply chain configuration supports its strategic objectives during this phase. Dell's decisions regarding the location and capacity of its manufacturing facilities, warehouses, and supply courses are all supply chain design or strategic decisions. Supply chain design decisions are typically made for the long term (a matter of years) and are very expensive to alter on short notice. Consequently, when companies make these decisions, they must take into account uncertainty in anticipated market conditions over the next few years.
2. *Supply chain planning*: For decisions made during this phase, the time frame considered is a quarter to a year. Therefore, the supply chain's configuration determined in the strategic phase is fixed. The configuration establishes constraints within which planning must be done. Companies start the planning phase with a forecast for the coming year (or a comparable time frame) of demand in different markets. Planning includes decisions regarding which markets will be supplied from which locations, the subcontracting of manufacturing, the inventory policies to be followed, and the timing and size of marketing promotions. Dell's decisions regarding markets a given production facility will supply and target production quantities at different locations are classified as planning decisions. Planning establishes parameters within which a supply chain will function over a specified period of time. In the planning phase, companies must include uncertainty in demand, exchange rates, and competition over this time horizon in their decisions. Given a shorter time horizon and better forecasts than the design phase, companies in the planning phase try to incorporate any flexibility built into the supply chain in the design phase and exploit it to optimize performance. As a result of the planning phase, companies define a set of operating policies that govern short-term operations.
3. *Supply chain operation*: The time horizon here is weekly or daily, and during this phase companies make decisions regarding individual customer orders. At the operational level, supply chain configuration is considered fixed and planning policies are already defined. The goal of supply chain operations is to handle incoming customer orders in the best possible manner. During this phase, firms allocate inventory or production to individual orders, set a date that an order is to be filled, generate pick lists at a warehouse, allocate an order to a particular shipping mode and shipment, set delivery schedules of trucks, and place replenishment orders. Because operational decisions are being made in

the short term (minutes, hours, or days), there is less uncertainty about demand information. Given the constraints established by the configuration and planning policies, the goal during the operation phase is to exploit the reduction of uncertainty and optimize performance.

The design, planning, and operation of a supply chain have a strong impact on overall profitability and success. Continuing with our example, consider Dell Computer. In the early 1990s, Dell management began to focus on improving the improved performance. Both profitability and the stock price have soared and Dell stock has had outstanding returns over this period.

Chopra, Sunil and Peter Meindl. Supply Chain Management. 2 ed. Upper Saddle River: Pearson Prentice Hall, 2004.