CHAPTER 2
OPERATIONS and SUPPLY CHAIN STRATEGY

Teaching Notes

This chapter reflects the increasing importance of operations and operations strategy in today's business environment. The model of Operations Strategy developed by Schroeder, Anderson, and Cleveland is discussed. Other materials by Porter, Skinner, Hayes and Wheelwright, and Hill, add definition to the concept of Operations Strategy and fortify the argument for its relevance.

The chapter is exciting to students who may think of operations as nitty gritty or low level material while the important strategic issues are left to marketing and finance. The chapter shows how operations can become a "competitive weapon" of the firm by strategic support of the firm's distinctive competence. The concepts of multiple objectives and response to external factors are presented. Linkage of functional strategies and global operations concerns are also addressed along with supply chain strategies.

Chapter 2 serves an integrating purpose for the book. It can be taught either at the beginning or at the end of the course depending on whether one wishes to start or end with a strategic theme. I have personally used the chapter both ways.

This chapter is also well received by executives and experienced managers. For many of them, it represents a new way to view operations and supply chains. The articles by Skinner (1969, 1996); Clark (1996); Schroeder, Anderson, and Cleveland (1986) provide good background reading for the chapter.

Answers to Questions

1. The reasons for formulating and implementing an operations strategy include:

   To renew emphasis on operations: the fundamental creation of value for the customer,

   To assure consistency between the operations strategy and the business strategy,

   To enable the use of operations capabilities as a competitive force in the business.

2. a. Ambulance Service:

   Mission -- To provide immediate, quick, and safe transportation for ill or injured people and a high level of medical care from the ambulance crews. Availability must be very high and costs must not be excessive.
Associated Policies -- A central location near a main freeway to insure fast service, a knowledgeable and well-trained staff, excellent vehicle maintenance, high capacity relative to use.

b. **Production of standard automobile batteries:**

Mission -- To provide low-cost automobiles batteries of reasonable quality to meet market demand.

Associated Policies -- Location of plants in low cost areas to minimize total costs, low overhead in staff services, high degree of process automation.

c. **Production of electronics products that have a short product life cycle:**

Mission -- To be first or one of the first to provide an electronics product to the market at reasonable cost and quality levels.

Associated Policies -- Use of new product introduction teams, flexible manufacturing processes, high R & D budgets, hire people who are willing to take reasonable risks (innovators).

Note: Many different missions and associated policies could be used.

3. a. No, the business does not have an operations strategy since it can be inferred from the operations manager complaint that the operations function was not included in the planning process.

   b. The operations manager should write a memo to the chief executive and other officers of the corporation informing them of the concerns of the operations function and solicit their appropriate actions to address the concerns. He should also work with the managers of the other functional areas and take an active role in strategy formulation and decision making.

4. **Mission of operations:** The mission of operations defines the role of operations within the total business strategy: how operations fit into the overall business plan. The mission should state the relative priority among the operations objectives: cost, quality, delivery, and flexibility.

**Order Winner/Order Qualifier:** A high level of performance (C, Q, D, F) on the order winner is required to get the order. An order qualifier is a minimum level of performance required to be considered for the order. A high level on an order qualifier will not win the order, only high performance on the order winner itself can win the order.
**Distinctive competence**: The distinctive competence of operation is what operations must excel at relative to the competition to provide competitive advantage. It is generally not possible to excel on several different dimensions: thus the distinctive competence of a firm requires focus.

5. **To determine if a company has an operations strategy, study the decisions that have been made. If a consistent pattern of decision-making exists, then there is an operations strategy present, stated or unstated, in the firm.**

Specifically, information about the four decision categories, process, quality, capacity, and inventory would be required. Questions such as the following could be used to obtain information:

- What are the most important characteristics of a new process? Quality produced by the process? Capacity of the process? Flexibility of the process? Amount of training required for the work force to operate the process?
- Is capacity acquired after demand materializes? Ahead of demand?
- Is inventory built up to prevent layoffs? To delay the addition of additional capacity?
- What is the company policy on hiring and layoffs? On training of employees at various levels? On the level of compensation relative to the competition?

The answers to these and other questions should be analyzed for internal consistency. If an operations strategy exists, it can be deduced from the consistent pattern of decision-making it produces.

Another test for an operations strategy is the presence of a written plan that has been implemented in operations. Not only should the plan be examined, but managers should also be interviewed to insure they understand the plan and are implementing the strategy through their everyday decision making.

6. **Quality.** This would be the primary goal of most hospitals. Much of the staff is licensed in their professions, and in-service training is used regularly. Staff-patient ratios are considered important, and techniques such as peer review, quality committees, and the use of many kinds of high-tech equipment are used to insure quality of care.

**Delivery.** This refers to the speed with which a patient receives care and providing care as promised on time. Delivery also occurs with each service the patient receives from check-in to checkout. It is important in hospitals that handle many emergency cases. As consumers take a more active role in choosing hospitals, delivery is becoming more of a concern.
**Flexibility.** This is the ability to respond to different and changing patient needs. Flexibility implies offering a wide variety of services and the ability to change at a moment's notice. A current problem with hospitals is that they stress this objective too much and duplication of services occurs between hospitals. As a result there are equipment and services that are sometimes under-utilized. This situation is improving, though, with regional health planning.

**Cost.** Until recently, this objective has received low priority. But with rising costs, inflation, government pressure and payment of standard fees by public health programs and HMO's, hospitals are under extreme pressure to hold costs down while maintaining or improving quality. The cost effectiveness of each objective, including quality, will have to be demonstrated as it becomes increasingly costly to provide health care.

All departments are not typically focused on the same objectives. One department may stress cost control while another stresses quality or flexibility.

The order winner in a hospital is typically quality from the patient’s point of view. Delivery, cost and flexibility may be order qualifiers. An insurance company, on the other hand may consider cost the order winner and quality, delivery and flexibility the order qualifiers.

7. **Mission emphasizing cost.** Strategic decisions include the level of automation, service levels and inventory policies, store layout and general appearance, store location, product selection, wage level, service level at check-out, availability of carry-outs, and service in aisles.

**Mission emphasizing quality.** Strategic decisions include service levels, general store appearance, locations of stores, product selection, freshness, top brand quality, convenience, training of staff, availability of staff in aisles, carry-out, delivery, check-out service, and addition of special features such as lobster tanks, a delicatessen, or a restaurant.

8. **a.** An airline is affected by many external factors such as:
   - fees charged by other comparable passenger carriers
   - public perception of safety and service
   - general economic conditions
   - variability of fuel prices
   - changes in government regulations

   **b.** The principal external factors affecting a bank are:
   - the level of interest rates and the money supply
   - competition from other financial institutions
   - government regulations
   - general economic conditions
c. Semiconductor manufacturing is affected by external factors such as:
   . changes in patent regulations
   . the demand for computers and other electronic products
   . prices paid to suppliers of plant and equipment
   . changes in micro-chip technology

9. Answers will vary depending on the students' sources.

10. Students' examples will vary. But, how firms have been able to achieve these seemingly conflicting results will be more consistent. Their answers will include reasons such as: cutting waste, improving consistency of quality, using JIT principles, automation, etc.

11. Examples of where higher quality costs more occur in all products including automobiles, clothing, furniture, etc. The definition of quality in this case refers to product design features, not consistency in producing a given product. If we use the definition of quality as consistently meeting a given customer need, then higher quality costs less.

12. a. Starbucks Coffee distinctive competence is the location of their stores and the unique product line that they have.

   b. Hewlett Packard has a distinctive competence in the HP Way and in product innovation. The HP Way is how they treat their people with respect and trust. Product innovation is pursued to stay ahead of the competition.

   c. Citibank has a distinctive competence in the spread of its global operations around the world and the range of services it offers. They are one of the largest and most diversified banks in the world.

13. A distinctive competence in operations provides a basis for providing to customers what is important to them. It gives the company a way to make a difference from competitors and to attract customers. It provides a means to keep focused on what is important to the company.

14. One example of a distinctive competence that can be sustained and not easily duplicated is a particular type of internal culture that is very customer oriented, as evidenced by companies such as Nordstroms and IBM. Another example is the ability to continually introduce new products in companies such as 3M and Sony. These product innovators develop internal systems that support continuous new product ideas.

   The above distinctive competencies are hard to duplicate because they rely on internal values, cultures and systems that are difficult to describe and very path dependent in their development. These distinctive competencies cannot be purchased on the open market.
15. Students examples will vary. They need to discuss advantages and disadvantages for local operations for each particular case. For example, the Levy Strauss and Co. strategic decision to outsource all its plants overseas, where the of labor cost are much lower than the U.S. results in closing all plants in the U.S., on the other hand it increases the lead times tremendously.

16. The link between the business and operations is through the operations mission. The operations mission is derived from the business strategy and also should be in agreement with other functional strategies. If there is misalignment between the business and operations strategies the company might not be able to give an adequate response to the market needs. For example, if a company’s business strategy is operational excellence (or low-cost producer) and if the operations mission is flexibility, then the company would not be able to make the right decision on what type of technology to purchase: for flexible manufacturing, or for large scale manufacturing. Obviously, there is always a trade-off in the decision-making process. A company cannot have everything, because of limited recourses. The link between business and the operations strategy guarantees that the right trade-offs will be considered.

17. Three examples of supply chains that compete:

a. An interesting example of competing supply chains is Apple’s supply chain of suppliers that build components and assemblies of its iPod versus Microsoft’s supply chain that builds and markets Zune. These portable devices for storing and playing audio files are relatively new, innovative products which currently compete more on product features and innovations than item cost. In the future, as this type of audio device becomes commonplace and innovations are less frequent, competition will focus more on item price and the supply chains will need to become cost sensitive.

b. A second interesting example of competing supply chains would be two grocery firms that compete within a region of the country such as Kroger and Safeway. Typically, the basis of competition is low cost as grocers market standardized, mature items. Take for example a can of green beans. There is little that differentiates the offering of these two grocers’ own label of green beans other than price. In this instance, the efficiency of the supply chain in being able to achieve a low cost per unit offers a distinctive competitive advantage to consumers.

c. Another example of competing supply chains for innovative products is Microsoft’s X-Box versus Sony’s PS3. Currently, these two products are employing the latest graphic, storage, and web connectivity technology in order to gain a competitive advantage. Cost is not the primary competitive emphasis, but rather the product features are what attracts customers. The supply chain for these two companies needs to be able to embed the state-of-the-art computer technology within these competing products.
18. The distinctive competence of Wal-Mart rests on its ability to coordinate a vast network of suppliers and to efficiently resupply and operate its stores. This is difficult to duplicate because of its large purchasing power, its fleet of trucks and warehouses, store locations, and its unique store culture that involves employees.

The distinctive competence of 3M rests on its ability to continually develop new products with mass customer appeal. It is hard to duplicate because the competence is built on the type of employees hired, the way employees are rewarded, the pride that 3M takes in new product innovations and the culture of the company.