

Chapter 1

The Operations Function

Teaching Notes

This chapter is aimed at providing an overall framework for the textbook and the field of operations and supply chain management. In this 2024 Release, for the first time, we start every chapter with a business story. Chapter 1 uses **Starbucks** as an example of an early adopter of sustainability practices including environmental, social, and economic sustainability. Section 1.2 is completely rewritten about the role of operations and supply chain management to focus on providing the customer with the right product at the right time and place as a measure of system effectiveness, while also controlling costs. In the past, offshore sourcing at low cost has sometimes been emphasized to the detriment of serving the customer. The chapter provides a framework that serves as a beneficial way of organizing students' understanding of five major operations and supply chain management organizational responsibilities and types of decisions needed to meet customer needs: process, quality, capacity, inventory, and supply chain. The cross-functional view of operations management (OM) is also introduced in this chapter to provide relevance for the course -- for non-majors. When operations management is related to marketing and finance as a major business function, all students readily understand the role of operations and supply chain in business. When teaching it helps to retain the interest of all students as being relevant to their major.

In teaching this chapter, we highlight the important role that OM and supply chains play in meeting customer needs while controlling costs and risks. The five decision areas in operations and supply chain are how this is done and used to organize the book into five major sections. We also spend some time discussing the importance of both services and manufacturing and how business operations are managed within larger, multi-organization supply chains. We define analytics and explain how analytics is used in operations and supply chain management decisions. Finally, we illustrate major OM and supply chain decisions using the Pizza U.S.A. example. The typical jobs in OM and supply chain in a Chapter 1 Operations Leader box are abstracted from www.ziprecruiter.com.

The Learning Enrichment section at the end of the chapter provides videos and/or websites that students can access outside of class or instructors can use in class. These resources help bring the chapter materials to life and tap into student interest. College students enjoy learning from YouTube videos.

Learning Enrichment *(for self-study or instructor assignments)*

What is Operations Management https://youtu.be/leMORAE2hk	Video 5:19
Supply Chain Management: A Force for Good. https://youtu.be/B10UhiOvrde	Video 5:01
Coca Cola: Supply Chain	Video

https://youtu.be/UBSOiHUctrY	2:29
Sustainability https://www.epa.gov/sustainability/learn-about-sustainability#what	Web Link
Globalization https://world101.cfr.org/global-era-issues/globalization/what-globalization	Web Link

Answers to Questions

1. Operations and supply chain management is ubiquitous, that is present in every organization. Daily, we consume various goods and services produced by the transformation of inputs to outputs under the control of operations managers. Operations and supply chain management is a core business function along with marketing and finance. All decisions are aimed at meeting customer needs, while controlling costs, and are cross-functional in nature. You will be interacting with the operations function no matter what career you choose. Much of what is learned related to operations and supply chain management can be applied to other functions.
2. Operations management is a broader term than production management, encompassing service organizations as well as manufacturing. Operations management is also a more recent term replacing the earlier term production management.
3. The difference between operations and supply chain management is operations management focuses on decisions to manage the transformation process that converts inputs into desired finished goods or services within a single firm. Operations management occurs within and across multiple facilities in an organization. Supply chain management relates to the network of manufacturing and service operations that supply each other from raw materials through manufacturing to the ultimate customer. The supply chain consists of the flows of materials, money, and information along the entire chain of sourcing, production, and distribution. The supply chain links the operations of many different organizations to satisfy customer needs.
4. Responsibilities differ among operations, marketing and finance managers. A marketing manager identifies demand for goods or services and develops the market, whereas the operations manager assures supply of the products or services. The finance manager acquires and allocates the capital resources for the other functions. Similarities in the three functions include managerial decision making and shared organizational goals.
5. Operations, marketing, and finance are primary functions of the organization. Human resources, information systems, and accounting are supporting functions that provide resources and services for the three primary functions. The operations manager applies resources, analysis and information provided by supporting functions and integrates them into decision making. The focus of the operations manager is on decision making rather than on analytic methods.

6. a. The purpose of a college library is to make information available to students and faculty for research and studying. The output is the bundle of services provided along with facilitating goods: buildings, computers, books, catalogs and indices.

Process -- facility layout considering book stacks, reference rooms, computer access on-site and from off-site, degree of computer use and procedures for accessing and circulating information. They must not only select the appropriate process, but manage the flow of users and information.

Quality -- standards of the college library profession are adopted; quality measures include: ratio of consulting staff hours to students, rate of new book and other material purchases, number of complaints, student satisfaction.

Capacity -- forecasting of library user needs contributes to decisions on building size, volume of space for study and materials, print acquisitions, computer work stations, staff hiring and scheduling of shifts.

Inventory -- decisions concerning the number of books, periodicals, etc. to stock.

Supply Chain – decisions about sourcing of materials and information. Also, decisions are made about best to distribute printed and online materials, along with moving materials and information into the library.

- b. The purpose of a hotel is to attract and satisfy conventioners and overnight guests. The output is the bundle of services and goods provided: overnight accommodations, maid service, room service, television, pool, bar, coffee shop.

Process -- a set of processes for reserving and payment of rooms, housekeeping, restaurant, recreation services, and ongoing study of service methods; the people who implement these processes including receptionists, accountants, housekeepers, and maintenance workers.

Quality -- hotel industry standards and the market positioning of the hotel (first class vs. budget) determine standards; quality measures include number of return visitors, conventions booked, and ratings by industry evaluators.

Capacity -- number of units and beds; appropriate size for restaurant, bar and convention halls; staffing for housekeeping, restaurant and office. Scheduling of the workforce is also included.

Inventory -- goods to meet requirements for room upkeep (towels, sheets, etc.), convention catering (glasses, dishes, food), restaurant and bar.

Supply chain – decisions about sourcing the various materials and services used by the hotel. Logistics is about moving materials and services to the hotel and then return and recycling of goods.

- c. The purpose of a small manufacturing firm is to provide customers with a quality product at a reasonable price. The output consists of not only the physical good but also any services that accompany the good, such as assistance in selecting the good (the shopping process) or a warranty.

Process -- the process of securing the raw materials, transforming and assembling them into a finished good, packaging the product, and arranging for its delivery to customers.

Quality -- definition of quality standards for the manufactured goods, measurement of deviations from design standards, inspection and control of quality of input materials, prevention of defects.

Capacity -- number of units the facility is capable of producing per unit time, size of inventory storage, hiring of workers and scheduling of shifts.

Inventory -- raw material inputs, work-in-process, and finished goods, used to smooth production and meet customer needs.

Supply chain -- Sourcing of materials and services used in the manufacturing process. The distribution and storage to and from the manufacturing plant.

7. a. Operation -- college library

Inputs -- librarians, staff, library facilities and equipment, energy, capital.

Transformation process -- organizing information, arranging materials for access, interacting with library users.

Outputs -- students and faculty provided with research and study materials.

- b. Operation -- hotel

Inputs -- facilities, staff, materials for housekeeping and food preparation, communications equipment, energy, capital.

Transformation process -- taking reservations, check-in and check-out procedures, providing a comfortable experience, cleaning rooms, and providing other services.

Outputs -- customers satisfied with lodging and related services.

- c. Operation -- small manufacturing firm

Inputs -- raw material, workers, supervisors, management, warehouse, manufacturing facilities and equipment, energy, capital.

Transformation process -- ordering raw materials, transforming and assembling raw materials into final product, packaging product, taking supply orders, shipping products, warehousing, distribution and return logistics.

Outputs – the product and customers satisfied with the way the product appears and operates.

8. The decision-making view of operations management categorizes and defines decision making for the operations function and the associated supply chain according to a given framework. The framework used here, which conforms quite closely to the assignment of management responsibilities within operations and supply chain includes the decision areas of Process, Quality, Capacity, Inventory and Supply Chain.

The process view defines operations management as the management of a transformation system. This system converts inputs, such as energy, materials, labor, capital, and information, into outputs, in the form of goods and services, via the process technology. The process view extends to managing processes across the supply chain through sourcing and logistics.

Both views are useful as both include goods and services, and both assign to management the responsibility for managing the transformation and distribution process in the firm. The difference in the views is one of emphasis: decision making activities by managers versus process design related to transformation systems.

9. Answers will depend on the specific sources obtained by students.
10. Answers will vary depending on the specific WSJ issue or Internet site.
11. Work of any type typically represents a process and many processes have similarities. From an operations perspective, these processes are designed to convert inputs into outputs and follow a sequence of repeatable steps.
 - a. Acquisition of another company: When acquiring another company, the sequence of steps includes finding firms suitable for acquisition, investigating the firm in detail for its strengths and weaknesses, then deciding that the firm should be acquired, making an offer, doing due diligence and finally concluding the acquisition. Each acquisition has a variety of inputs in terms of information, labor and capital invested in order to achieve the output which is a desirable acquisition of another company.
 - b. Closing the books at the end of the year: Closing the books requires reconciling all of the accounting entries and insuring accuracy of the books. The process includes cutting off all cash revenues and cash expenses at midnight of the closing date, looking for adjustments that must be made for unpaid invoices and sales coming back, updating all journal entries, producing an income statement and balance sheet for year end and insuring back-up data is available to support all journal entries.

- c. Marketing research for a new product: Market research may be conducted in a variety of ways, but it provides a prospective customer with a product concept (either physically or conceptually) and assesses the likelihood of market acceptance based upon customer responses to a variety of questions. Market research can employ various instruments such as field or phone interviews, field testing, focus groups, panels, etc. Regardless of the tools employed, market research is aimed at determining potential market acceptance of the product.
 - d. Design of an information system: Designing an information system requires knowledge of customer (internal or external) requirements. Once customer requirements are understood, a prototype can be developed, tested, redesigned based upon feedback, and if successful, a system developed for implementation. Regardless of the purpose of the information system, a universal set of process steps is commonly followed.
 - e. Hiring of a new employee: Whether this individual will be employed in finance, accounting, human resources, operations, or some other functional discipline within a firm, a common process of employment is typically undertaken. It is initiated with a job posting, an interview(s), followed by possible skill testing, a hiring decision, training, possible mentoring of work, and frequent evaluations of performance.
12. The role of operations in the firm is to meet the customer's needs in an efficient manner. Customer needs are sometimes described as providing the right product or service at the right time and place. Productivity is at the heart of efficiency by providing the same output at lower costs or providing more output for the same inputs. At a macro level, productivity is important to improve GDP in an economy.