

Overview of Operations Management

Operations Management involves the planning, scheduling, and control of activities that transform inputs into finished goods and services.

For organizations providing specialized health services to children, the success of the management of the operations impacts directly on the ability of that organization to deliver services of a certain quality standard in the quantity and timeliness that meets the needs of the consumers of the services.

Successful planning for the management of the operations of any business must be carefully aligned with the strategic and financial planning functions. It is critical for operations planning to be in sync with strategic planning because the management of operations involves determining the tasks and technology needed to fulfill strategic objectives, deciding how to acquire the resources and design the facilities these tasks require, and measuring service delivery to gauge the ability of the operations to reach intended targets.

Primary activities of operations management include job design, scheduling, materials management, capacity management, facilities management, and quality management. In this article each of these activities will be outlined in the context of planning the operations of a human service organization. Key operations management concepts are **bolded** for identification purposes.

Operations Management in Health Care/Human Service Organizations

One reality that distinguishes operations management for the human service industry versus the manufacturing sector is that services can not be **inventoried**. Health services must be provided “**on demand**” to the consumer. This lack of inventory presents serious implications for the management of a service organization because of the increased need to plan carefully to ensure that appropriate services are available when needed. Not only is health care service provision vulnerable to **cyclical variation** due to calendar events such as holidays or the commencement of school, but health services must be available in the event of **unanticipated circumstances** such as an outbreak of a communicable disease.

Therefore, **scheduling** for normal operations as well as for times of **unusual demand** generates the need to build a system where personnel are responsive to the need to **increase capacity**. Public health care planners often refer to this ability to react to times of unanticipated increased demand as **surge capacity**.

Capacity management is a major operations consideration and the following three capacity-related areas are particularly important for planning: **materials management**, **technology use**, and the use of **capital**.

In order to have materials available to provide services in a timely manner the materials need to be **identified, ordered, purchased, inventoried, and stored**. In addition, there must be an efficient **means of access** to and a **consistent supply** of these items which indicates that the **flow of materials** needs to be documented and analyzed. Oftentimes the demand for a material or set of materials for a specific service is related to the demand for materials for another related service and these variants need to be considered in planning the **distribution** of the materials. For example, a well-visit has different implications than a visit for a specific medical intervention and these implications may include a need for materials such as vaccines, lab testing supplies, or assistive technology.

The term “**technology**” not only encompasses the items commonly thought to be technological such as diagnostic equipment and computer systems. In operations management **technology** refers also to **human technology** because of the contribution of the expertise of the individuals who work in the organization. Recently the concept of **technology** has been broadened further to include **systems** where practical application of knowledge for the prevention, diagnosis, and treatment of disease occurs.

Management decisions regarding the **acquisition of technology** have to be carefully made with consideration of the financial status of the organization. The **use of capital** in any business requires an assessment of current needs and projections of future needs. This is why operations decisions must be made in cooperation with the financial planning strategies.

Related to capacity management is the operation and location of the facilities that house the service delivery. The facilities must be large enough to accommodate the work that must be done and designed to facilitate **efficient** service delivery. For example, improvements in emergency room capacity can be achieved by a redesign of the operations—including **scheduling, facilities, and job design**. In a 2004 [article in the Boston Globe](#)¹ entitled “Emergency Room Recovery”, Boston Medical Center’s success at reducing waiting in its emergency room by the use of operations management strategies is described.

Ideally, human service facilities are located near to customers. However, in cases where customers may live some distance from facilities, operational strategies can be implemented to make services accessible such as parking and the design of waiting and visiting areas.

Job design is an especially important operations function in the health care industry because health care involves high **labor intensity**, a high **level of interaction** with the customer, and the services delivered are highly **specialized** to customer needs. These three factors make thoughtful job design in a human service organization particularly important because of the increased negative consequences of job turnover and error.

¹ Reference: <http://www.boston.com/globe/search/stories/reprints/emergencyroom070804.html>

Properly designing jobs for individuals or groups means specifying WHAT is to be done, HOW it is to be done, and WHY it is to be done. The answers to these queries on the operations side should reflect the organization's mission and strategic plans and include the design of the facilities or work environment to facilitate the use of technology for completing the work. The design of the work environment to include the interface of human and machine technology is often referred to as **ergonomics**.

Finally, **quality management** activities are vitally important for the success of operations management. There are a variety of approaches to the assessment of quality and to the use of data for improving operations but most organizations recognize the need for a system of **continuous quality improvement**. Ideally, the continuous quality improvement system would catch errors and track data that provides information to make adjustments in the system. In order to learn more about specific issues relating to service quality and the ability of the organization to meet strategic objectives, specific data collection practices are often implemented such as **customer satisfaction surveys**, **outcomes measurement** on specific treatment variables, **or impact measurement** on individuals, families, or the community.

Unfortunately there is less opportunity to correct quality problems in human service delivery than in manufacturing. Moreover, the costs of assessing quality is high due to the need to measure constructs which are difficult to operationalize such as “courtesy”, “attention”, and “participation in treatment”. Quality improvement data collection also means attention to the development of ethical and credible data collection strategies from customers, including primary and secondary service recipients. It is also recommended to apply what has been learned from **evidence-based medicine** and from research into the **best practices** for the type of services being delivered.

In conclusion, much of operations management involves determining what needs to be done and how much effort/resources it will take. There are often a number of trade-offs that should be considered such as **specialization** versus **expansion** of job tasks. It is of paramount importance for the central operations functions of job design, scheduling, capacity management, facilities management, and quality management to be closely aligned with the strategic objectives of the organization and to be cooperative with the financial realities and projections for organizational growth and improvement.