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Operation Management

AAT Level II

Business Management
(BMA)

Susantha Weerakoon
B.Sc. (MIS), MBA (IMS), PHD (Business Psychology)

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JMC Jayasekera Management Centre (Pvt) Ltd
Pioneers in Professional Education
65/2A, Chittampalam Gardiner Mawatha, Colombo 02 | T: +94 112 430451 | E: info@jmc.lk | F: +94 115 377917

Business Management

Operations Management

Lecturer

Dr. Susantha Bandara Weerakoon

{BSc(MIS), MBA (IMS), PHD (Business. Psychology}

What is operations Management?

What is Operations Management

Operations management is the management of processes that transform inputs into goods and services that add value for the customer.

The goal of operations management is to maximize efficiency while producing goods and services that effectively fulfill customer needs.

What is operations Management?

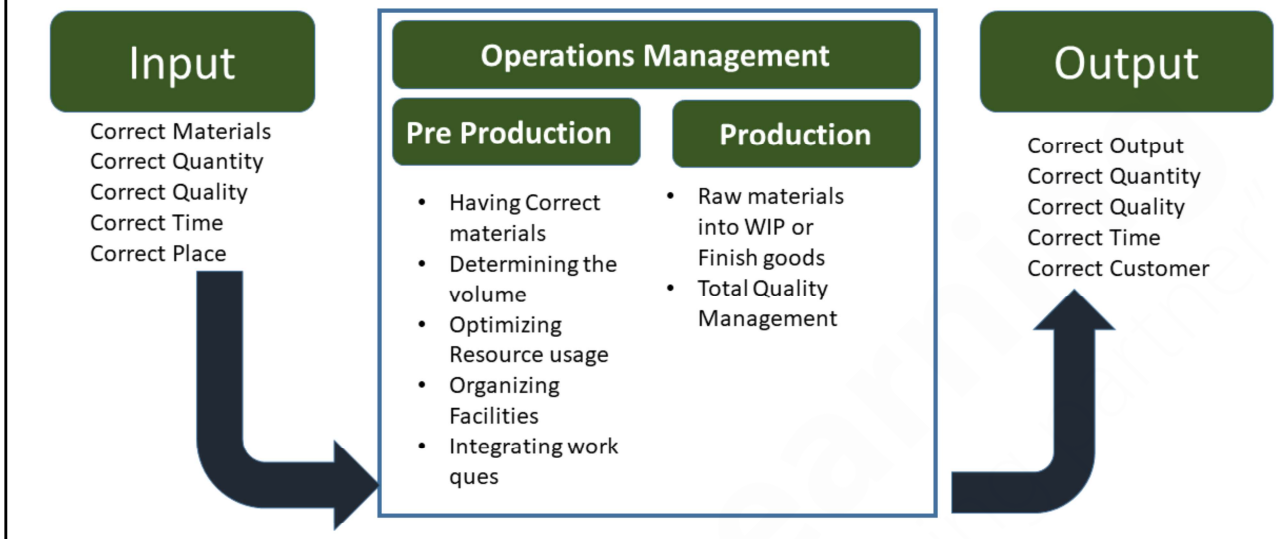
If an organization makes furniture, some of the operations management decisions involve the following:

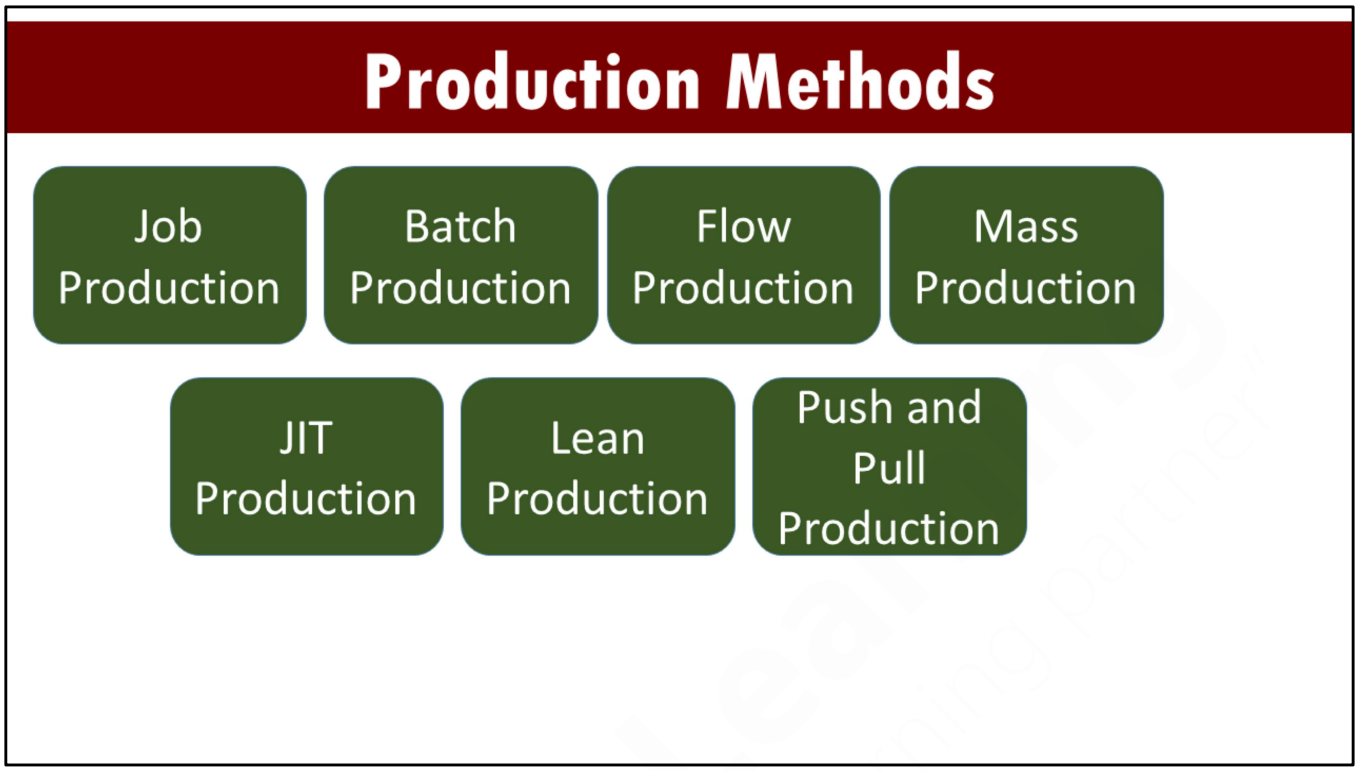
- purchasing wood and fabric,
- hiring and training workers,
- location and layout of the furniture factory,
- purchase cutting tools and other fabrication equipment

Operation Management Functions

- Managing production facilities to be more efficient in the business
- Maintaining the correct suppliers to maintain continues business process
- Managing the production cost in order to gain higher profitability
- Managing internal capabilities
- Supporting the ultimate objective of the business

Operation Management Functions





Job production, where items are made **individually** and each item is finished before the next one is started. Designer dresses are made using the job production method

Batch production, where groups of items are made **together**. Each batch is finished before starting the next block of goods. For example, a baker first produces a batch of 50 white loaves. Only after they are completed will he or she start baking 50 loaves of brown bread.

Flow production, where **identical, standardized items** are produced on an **assembly line**. Most cars are mass-produced in large factories using conveyor belts and expensive machinery such as robot arms. Workers have specialized jobs, for instance, fitting wheels

Mass production, sometimes utilizing flow production, cuts out the problem of downtime associated with batch manufacturing. Although, this method will only be cost-effective when producing large quantities of the same product, which makes it difficult to utilize as a new business or for those operating in niche markets. The concepts of mass production can be applied to all sorts of products, from food, fuel, chemicals and mind minerals to discrete substantial parts, such as fasteners, to assemblies of individual parts for things such as automobiles or household appliances

Just in time (**JIT**) **manufacturing** is a workflow **methodology** aimed at reducing flow

times within **production** systems, as well as response times from suppliers and to customers

Lean manufacturing, or simply “lean,” is a systematic method designed to minimize waste in a manufacturing system while productivity remains constant. Originating in Japan in the Toyota Production System (TPS), lean manufacturing strives to minimize waste within a manufacturing operation, with the idea being to clearly portray what adds value by removing what doesn’t. As your company begins to think about lean manufacturing it’s important to keep in mind the process of going lean takes time – like turning a cruise ship around.
There are several different lean techniques, allowing each organization to fit lean manufacturing techniques into its own distinct production process. We’re going to discuss the eight types of waste lean manufacturing seeks to eliminate and five common lean principals, tools and techniques manufacturers around the world have implemented into their manufacturing processes.

8 types of wastes identified in lean principles
Defects
Overproduction
Waiting
Non-utilized talent
Transportation
Inventory
Motion
Extra Processing

Role of Operations Managemet

- Make what customer want
- Make the brand for business
- Utilize resources for competitive advantage
- Create the basis for profitability
- Create the basis for market leadership

Operations Management in service sector

Difficulties

- Difficulties in demand forecasting
- Difficulties in cost determination
- Difficulties in understanding customer requirement
- Difficulties in communication

Operations Management in service sector

Value additions

- Integration of the marketing activities with the operation
- Integration of the Customer Service with the operation
- Less supply chain and warehousing effort
- Integration of skill base

A company is in essence a collection of activities that are performed to design, produce, market, deliver and support its product (or service). Its goal is to produce the products in such a way that they have a greater value (to customers) than the original cost of creating these products. The added value can be considered the profits and is often indicated as 'margin'. A systematic way of examining all of these internal activities and how they interact is necessary when analyzing the sources of competitive advantage. A company gains competitive advantage by performing strategically important activities more cheaply or better than its competitors. Michael Porter's value chain helps disaggregating a company into its strategically relevant activities, thereby creating a clear overview of the internal organization. Based on this overview managers are better able to assess where true value is created and where improvements can be made.

Figure 1: Porter's Value Chain

One company's value chain is embedded in a larger stream of activities that can be considered the supply chain or as Porter mentions it: the *Value System*. Suppliers have a value chain (upstream value) that create and deliver the purchased inputs. In addition, many products pass through the value chain of channels (channel value) on their way to the buyer. A company's product eventually becomes part of its buyer's value chain. This article will not go into the entire supply chain (from suppliers all the way to the end-consumer), but rather focuses on one organization's value chain. The value chain activities can be divided into two broader types: *primary activities* and *support activities*.

Primary activities

The first are primary activities which include the five main activities. All five activities are directly involved in the production and selling of the actual product. They cover the physical creation of the product, its sales, transfer to the buyer as well as after sale assistance. The five primary activities are *inbound logistics*, *operations*, *outbound logistics*, *marketing & sales* and *service*. Even though the importance of each category may vary from industry to industry, all of these activities will be present to some degree in each organization and play at least some role in competitive advantage.

Inbound Logistics

Inbound logistics is where purchased inputs such as raw materials are often taken care of. Because of this function, it is also in contact with external companies such as suppliers. The activities associated with inbound logistics are receiving, storing and disseminating inputs to the product. Examples: material handling, warehousing, inventory control, vehicle scheduling and returns to suppliers.

Operations

Once the required materials have been collected internally, operations can convert the inputs in the desired product. This phase is typically where the factory conveyor belts are being used. The activities associated with operations are therefore transforming inputs into the final product form. Examples: machining, packaging, assembly, equipment maintenance, testing, printing and facility operations.

Outbound Logistics

After the final product is finished it still needs to find its way to the customer. Depending on how *lean* the company is, the product can be shipped right away or has to be stored for a while. The activities associated with outbound logistics are collecting, storing and physically distributing the product to buyers. Examples: finished goods warehousing, material handling, delivery vehicle operations, order processing and scheduling.

Marketing & Sales

The fact that products are produced doesn't automatically mean that there are people willing to purchase them. This is where marketing and sales come into place. It is the job of marketeers and sales agents to make sure that potential customers are aware of the product and are seriously considering purchasing them. Activities associated with marketing and sales are therefore to provide a means by which buyers can purchase the product and induce them to do so. Examples: advertising, promotion, sales force, quoting, channel selection, channel relations and pricing. A good tool to structure the entire marketing process is the Marketing Funnel.

Service

In today's economy, after-sales service is just as important as promotional activities. Complaints from unsatisfied customers are easily spread and shared due to the internet and the consequences on your company's reputation might be vast. It is therefore important to have the right customer service practices in place. The activities associated with this part of the value chain are providing service to enhance or maintain the value of the product after it has been sold and delivered. Examples: installation, repair, training, parts supply and product adjustment.

Support Activities

The second category is support activities. They go across the primary activities and aim to coordinate and support their functions as best as possible with each other by providing purchased inputs, technology, human resources and various firm wide managing functions. The support activities can therefore be divided into *procurement*, *technology*

development (R&D), *human resource management* and *firm infrastructure*. The dotted lines reflect the fact that procurement, technology development and human resource management can be associated with specific primary activities as well as support the entire value chain.

Procurement

Procurement refers to the function of purchasing inputs used in the firm's value chain, not the purchased inputs themselves. Purchased inputs are needed for every value activity, including support activities. Purchased inputs include raw materials, supplies and other consumable items as well as assets such as machinery, laboratory equipment, office equipment and buildings. Procurement is therefore needed to assist multiple value chain activities, not just inbound logistics.

Technology Development (R&D)

Every value activity embodies technology, be it know how, procedures or technology embodied in process equipment. The array of technology used in most companies is very broad. Technology development activities can be grouped into efforts to improve the product and the process. Examples are telecommunication technology, accounting automation software, product design research and customer servicing procedures. Typically, Research & Development departments can also be classified here.

Human Resource Management

HRM consists of activities involved in the recruiting, hiring (and firing), training, development and compensation of all types of personnel. HRM affects the competitive advantage in any firm through its role in determining the skills and motivation of employees and the cost of hiring and training them. Some companies (especially in the technological and advisory service industry) rely so much on talented employees, that they have devoted an entire Talent Management department within HRM to recruit and train the best of the best university graduates.

Firm Infrastructure

Firm infrastructure consists of a number of activities including general (strategic) management, planning, finance, accounting, legal, government affairs and quality management. Infrastructure usually supports the entire value chain, and not individual activities. In accounting, many firm infrastructure activities are often collectively indicated as 'overhead' costs. However, these activities shouldn't be underestimated since they could be one of the most powerful sources of competitive advantage. After all, strategic management is often the starting point from which all smaller decisions in the firm are being based on. The wrong strategy will make it extra hard for people on the workfloor to perform well.

Linkages within the Value Chain

Although value activities are the building blocks of competitive advantage, the value chain is not a collection of independent activities. Rather, it is a system of *inter*dependent activities that are related by *linkages* within the value chain. Decisions made in one value activity (e.g. procurement) may affect another value activity (e.g. operations). Since procurement has the responsibility over the quality of the purchased inputs, it will probably affect the production costs (operations), inspections costs (operations) and eventually even the product quality. In addition, a good working automated phone menu for customers (technology development) will allow customers to reach the right support assistant faster (service). Clear communication between and coordination across value chain activities are therefore just as important as the activities itself. Consequently, a

company also needs to optimize these linkages in order to achieve competitive advantage. Unfortunately these linkages are often very subtle and go unrecognized by the management thereby missing out on great improvement opportunities.

Figure 2: Value Chain Linkages

In the end, Porter's Value Chain is a great framework to examine the internal organization. It allows a more structured approach of assessing where in the organization true value is created and where costs can be reduced in order to boost the margins. It also allows to improve communication between departments. Combining the Value Chain with the VRIO Framework is a good starting point for an internal analysis. In case you are interested in the entire supply chain, you could repeat the process by adding the value chains of your company's suppliers and buyers and place them in front and behind your own company's value chain.

Pre – Production Operations

- Supply Chain Management
- Demand forecasting
- Capacity Planning
- Layout Designing
- Production Scheduling
- Quality Management

Pre – Production Operations

Supply Chain Management

Upstream Activities

Business

Down stream Activities

4 Elements of SCM

- Integration
- Operation
- **Supply Chain Management**
- Purchasing
- Distribution

Pre – Production Operations

Supply Chain Strategies

Strategy	Explanation
Demand recognition	Adopt a demand-driven planning and business operating model based on real-time demand insights and demand shaping.
Total Cost of Ownership	Focus on total cost of ownership (TCO) not price. Supply chain costing should not only consider about the selling price but the value it can bring to various stakeholders.
Understand the value and risks of technology	The supply chain should recognize the importance of Technology and the most appropriate use of it. Also, it needs to be mindful that technology brings risks as well as benefits. A better understanding of both sides is an essential requirement to be successful.
Optimize product designs and product management	Optimize product designs and product management for supply, manufacturing, and sustainability to accelerate profitable innovation. The design and contents of the product should be acceptable not only to the customer but also for the other stakeholders as well.
Integrate supply chain with business goals.	Align your supply chain with business goals by integrating sales and operations planning with corporate business planning. Supply chain activity should not be an isolated process. But it's a made connecting factor which integrates the entire business functions.

Pre – Production Operations

Demand Forecasting

Demand forecasting is an estimate of sales during a specified future period based on proposed marketing plan and a set of particular uncontrollable and competitive forces

Factors:

- Past Experience
- Government Regulations
- Customer Priorities and taste
- New substitutes
- Change in Fashion and Technology
- Expectations in Market

Pre – Production Operations

Types of Demand Forecasting

Based on Economy :

- Macro Level Forecasting
- Industry Level Forecasting
- Firm Level Forecasting

Based on Time Period:

- Short-Term Forecasting
- Long – Term Forecasting

Capacity Planning

Capacity planning is the practice of planning/determining production capacity and workforce needs to make sure your supply chain is equipped to meet demand. Capacity planning lets businesses know how and when to scale, identify bottlenecks, create better design capacity, and mitigate risk, within a planned period of time.

Capacity Planning Methods

- Capacity Leads Demand Model:
  - Forecasted demand ready to respond immediately
- Capacity Matches Demand Model:
  - Demand changes regular basis
- Capacity Lags Demand Model:
  - Wait to see wait demand is

Capacity Management benefits

- Budgeting
- Scalability
- Growth
- Dynamic Change