UNIVERSITY OF CAPE COAST

SBU 101
FUNDAMENTALS OF BUSINESS

Chapter Seven

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TOPIC
OPERATIONS MANAGEMENT

Background to Operations Management

- Managers at General Electric have reaped huge payoffs from an area that many organisations used to take for granted-operations.
- Manufacturing and production were of primary importance during the early decades of this century as mass production and assembly-line quantities of goods and services Jones (2012).
- After a while, however, managers turned their attention to finance, marketing, and human resource issues and pushed operations to the wings.
- In recent years, things have come full circle and operations is once again on centre stage

The meaning of Operations Management

- **Operations management** is the total set of managerial activities used by an organisation to transform resource inputs into goods and services.
- When NCS buys electronic components, assembles them into computers, and then ships them to customers, it is using operations management.
- When a Papaye employee orders new food products and paper napkins and then combines dough, cheese, and tomato paste to create a pizza, he is using operations management Stevenson (2014).

Stages and processes in production

- Product Design and Development
- Raw Material and Component Sourcing
- Quality Control
- Manufacturing or Service Delivery
- Assembly and Subassembly
- Packaging
- Quality Control and Inspection

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Factors of productions

Land

Land refers to all-natural resources used in the production process. This includes not only physical land but also all the resources that come from it, such as minerals, water, forests, and agricultural land

Labor

Labor represents the human effort and work that goes into the production of goods and services. It includes both physical and mental work

Capital

Capital refers to the tools, machinery, equipment, buildings, and infrastructure used in the production process

Entrepreneurship

Entrepreneurship represents the creativity, innovation, and risk-taking abilities of individuals who organize the other factors of production to create goods and services

Types of Production

Job Production

In job production, each product is individually designed and manufactured to meet the specific requirements of a customer.

Batch Production

Batch production involves producing a limited quantity of identical or similar products at a time.

Mass Production

Mass production is characterized by the continuous, large-scale production of standardized products.

Continuous or Flow Production

Continuous production is a variation of mass production where products are made without interruption.

Type of production

Intermittent Production:

Intermittent production combines elements of both job and batch production.

Project Production:

Projectproductionisusedforone-of-a-kind,complexprojects,suchasconstruction, infrastructure development, and software development.

Make-to-Order (MTO):

In a make-to-order production system, products are manufactured only after receiving a customer's order.

Make-to-Stock (MTS):

Make-to-stock production involves producing products in anticipation of customer demand

Plant location

- Location must be determined by the needs and requirements of the organisation Revelle (1996).
- A company that relies heavily on railroads to transport raw materials or finished goods needs to be located close to rail facilities.
- General Electric decided that it did not need six plants to make circuit breakers, so it invested heavily in automating one plant and closed the other five.
- Different organisations in the same industry may have different facilities requirements.
- A retail business must choose its location very carefully so as to be convenient for consumers.

Type of facility layout

- The choice of physical configuration, or the layout, of facilities is closely related to decisions on goods or service line, capacity, and location
  - **Product Layout**
    - A product layout is appropriate when large quantities of a single product are needed.
    - It makes sense to custom design straight-line flow of work for a product when a specific task is performed at each work station as each unit flows past
  - **Process Layout**
    - Process layouts are used in operations settings that create a variety of products.
    - Auto repair shops and healthcare clinics are good examples.
  - **Fixed-Position Layout**
    - The fixed-position layout is used when the organisation is creating a few very large and complex products.

Production planning and control

- What is Production Planning and Control?
  - Production planning and control refers to the two separate pre-production stages of manufacturing:
  - production planning and production control.
  - It's the process of managing the resources, manpower, schedules, and other aspects of producing goods and services.
  - Production planning and control is implemented by businesses to further strengthen their production process and prevent setbacks from affecting their normal operations ROMANO (2024).

The main goal of production planning and control

- As a best practice for quality assurance and quality control, the main goal of production planning and control is to maximize:
  - the materials,
  - workforce,
  - productivity time,
  - And other resources used in the process of manufacturing

Benefits of ppc

- other benefits of implementing production planning and control in your organization:
  - **Enhance material procurement**
  - **Improve production time**
  - **Reduce production costs**
  - **Minimize resource waste**
  - **Streamline production process**

Steps in Production Planning and Control

- For smooth-running integration of production planning and control, businesses should implement a systematic routine that is proven to be effective.
  - **Planning**
    - As the first step of the process, planning states all the materials, manpower, manufacturing techniques, resources, and other initial details needed to complete the production
  - **Routing**
    - Routing determines the path of goods starting from raw materials up to finished products
  - **Scheduling**
    - Scheduling states all the production elements that are related to timing or schedules.
  - **Loading**
    - is the process of determining the ideal allocation of workload to employees and to machines used, in accordance with their capacity.

Steps in Production Planning and Control

- **Dispatching**
  - Dispatching is the implementation of all the plans stated in the previously mentioned steps, into actual production
- **Expediting**
  - Also known as follow-up, expediting is designed to evaluate the effectiveness of the whole production process
- **Inspection**
  - inspection is an extra step performed to ensure that all the planning and controlling approaches identified by the management are consistently implemented and adhered to.
- **Correction**
  - Once the above-mentioned steps are performed and there are issues or areas for improvement that were identified, this is the step where they can be modified

Materials management

- Materials management is an aspect of supply chain management and planning.
- The primary purpose of materials management is to ensure that manufacturers have all the raw materials they need to make goods Atkinson (2011).
- Materials management also focuses on ensuring that no components are wasted and optimizing inventory maintenance and management.
- While materials management requires understanding what materials are needed and where to source them, it is also heavily involved in inventory management and storage.

Types of materials management

- Materials managers deal with both direct materials and indirect materials.
  - Direct materials are the components that cost the most and are the most essential to the production line.
  - Indirect materials include raw materials, natural resources, and other supplies needed to create products.
  - Indirect materials are less cost intensive than direct materials and involve less measurement.
  - Examples of indirect materials include gloves, PPE, and maintenance supplies.

Materials management process

- The process of materials management includes all steps from purchasing materials to receiving materials.
- This includes storage and warehousing, transport, and receiving. Each step has its own goals and process.
  - **Purchasing**
  - **Storage**
  - **Transport**
  - **Receiving**

Benefits of materials management

- **JIT inventory management.**
  - JIT is an inventory management style that involves delivering components right as needed, i.e., just in time
- Reduction of material waste.
  - material managers can reduce receiving errors and waste. Reducing waste is important to save costs and conserve resources.
- **Increased inventory accuracy**
  - Knowledge of accurate direct material inventory levels can help increase production efficiency and reduce inventory loss
- **Optimization of material transport.**
  - By creating specialized materials management departments and focusing on better management techniques,


Thank
You!