Operations Management in Manufacturing and Service Industries

Chapter Objectives

1. Define operations management, discuss role of the operations manager, and decisions in planning production process
2. Describe types of facility layouts
3. Identify activities of operations manager
4. Explain PERT/Gantt charts
5. Explain technology in manufacturing
6. Distinguish service from manufacturing operations in product delivery and managing

Operations Management

• “…consists of all activities involved in transforming a product idea into a finished product, as well as those involved in planning and controlling the systems that produce goods and services.”

Manufacturing

• “…manufacturers...perform the same basic function: to transform resources into finished goods.”

Planning: Production Method Decisions

- Make-To-Order
- Mass Production
- Mass Customization
Facilities Decisions

- Site Selection
  - Close to suppliers, customers, or both
  - Supply of skilled workers
  - Quality of life
  - Resource costs
  - Business climate
- Capacity Planning
- Layout Planning

Layout

- “…how equipment, machinery, and people will be arranged to make the production process...efficient…”

Process Layout

- Machining → Shaping and sanding → Drilling → Shipping

Product Layout

- Embossing and engraving → Imprinting → Molding → Sanding → Wrapping and shipping

Cellular Layout

- "...encompasses... activities: purchasing, inventory control, and work scheduling.”

Materials Management
Purchasing And Supplier Selection
✓ Purchasing
✓ Supplier Selection
✓ E-Purchasing
✓ Electronic Data Interchange

Inventory Control
✗ Just-In-Time
✗ Material Requirements Planning
✗ Manufacturing Resource Planning

Work Scheduling
✗ Master Production Schedule
✗ Gantt Charts
✗ PERT Charts

Gantt Chart

PERT Chart

Technology Of Goods Production
- Computer-Aided Design
- Computer-Aided Manufacturing
- Computer-Integrated Manufacturing
- Flexible Manufacturing Systems
Differences Between Manufacturers and Service Providers

- Intangibility
- Customization
- Customer Contact

Operational Efficiency...Important (to both)

Service Provider Decisions

- What services/goods to offer?
- How provide services?
- Where to locate business and what will it look like?
- How to forecast demand for services?

Operations Planning

- Operations Processes
  - Make-To-Order
  - Make-To-Stock
- Facilities
  - Site Selection
  - Size/Layout
  - Capacity Planning

Managing Operations

- Scheduling
- Inventory Control

Quality

- “...the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.”

Quality Management Or Assurance- TQM

- Customer Satisfaction
- Employee Involvement
- Continuous Improvement
  - Statistical Process Control
  - Benchmarking
- International Quality Standards
  - ISO 9000
  - ISO 14000
Outsourcing

• “...having outside vendors manufacture the actual product.”

Outsourcing

• Manufacturing

• Service