Production as an Organization Function

- US companies cannot compete with marketing, finance, accounting, and engineering alone.
- We focus on OM as we think of global competitiveness, because that is where the vast majority of a firm's workers, capital assets, and expenses reside.
- To succeed, a firm must have a strong operations function teaming with the other organization functions.

Decision Making in OM

- Strategic Decisions
- Operating Decisions
- Control Decisions
Strategic Decisions

- These decisions are of strategic importance and have long-term significance for the organization.
- Examples include deciding:
  - the design for a new product's production process
  - where to locate a new factory
  - whether to launch a new-product development plan

Operating Decisions

- These decisions are necessary if the ongoing production of goods and services is to satisfy market demands and provide profits.
- Examples include deciding:
  - how much finished-goods inventory to carry
  - the amount of overtime to use next week
  - the details for purchasing raw material next month
Control Decisions

• These decisions concern the day-to-day activities of workers, quality of products and services, production and overhead costs, and machine maintenance.
• Examples include deciding:
  – labor cost standards for a new product
  – frequency of preventive maintenance
  – new quality control acceptance criteria

Decision Making

• Most operations decisions involve many alternatives that can have quite different impacts on costs or profits
• Typical operations decisions include:
  – What: What resources are needed, and in what amounts?
  – When: When will each resource be needed? When should the work be scheduled? When should materials and other supplies be ordered?
  – Where: Where will the work be done?
  – How: How will he product or service be designed? How will the work be done? How will resources be allocated?
  – Who: Who will do the work?
What Controls the Operations System?

- Information about the outputs, the conversions, and the inputs is fed back to management.
- This information is matched with management's expectations.
- When there is a difference, management must take corrective action to maintain control of the system.

Management Concept

- Planning and Decision Making:
  - Determining the organizational goal and deciding how best to achieve them.
- Organizing: Determine how best to group activities and resources.
- Leading: Motivating members of organization to work in the best interest of organization.
- Controlling: Monitoring and correcting ongoing activities.
- Efficient: Using the resources wisely and without unnecessary waste.
- Effective: Making the right decision and successfully implementing them.
Objectives of the Organization

- Customer or user satisfaction
- Investor's Satisfaction
- Employees and workers morale

Customer or user satisfaction:

It is essential to promote sales. The factors, which influence the customer or user satisfaction are:

- Product Quality
- Product Price
- Delivery Schedule
**Organizational Functions**

- **Marketing**
  - Gets customers

- **Operations**
  - Creates product or service

- **Finance/Accounting**
  - Obtains funds
  - Labor Cost, Production quantities, Quality

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**Japanese System of Management**

1. Job Rotation
2. Long Term Employment
3. Promotion and Pay Increase
4. Continuing Education
5. Consensual Decision Making
6. Group Consciousness
7. Implicit Informal Controls
8. Holistic Concern for People
9. Paternalistic Employers
10. Respect of Humanity
Contributions From

- Human factors
- Industrial engineering
- Management science
- Biological science
- Physical sciences
- Information science

Why Study Operations Management?

- Systematic Approach to Org. Processes
- Business Education
- Cross-Functional Applications
- Career Opportunities
Why Study OM? (cont.)

• OM is one of three major functions (marketing, finance, and operations) of any organization.

• We want (and need) to know how goods and services are produced.

• We want to understand what operations managers do.

• OM is such a costly part of an organization.

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Why Study OM?

• Every aspect of business revolves around operations

• Many service jobs are closely related to operations
  – Financial services
  – Marketing services
  – Accounting services
  – Information services

• There is a significant amount of interaction and collaboration amongst the functional areas

• It provides an excellent vehicle for understanding the world in which we live
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Why Manufacturing Matters?

- Over 18 million workers in manufacturing jobs
- Accounts for over 70% of value of U.S. exports
- Average full-time compensation about 20% higher than average for all workers
- Manufacturing workers more likely to have benefits
- Productivity growth in manufacturing in the last 5 years is more than double that of the U.S. economy

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Core Services Performance Objectives

- Quality
- Flexibility
- Operations Management
- Speed
- Price (or cost reduction)
What is a Service and What is a Good?

- “If you drop it on your foot, it won’t hurt you.” (Good or service?)
- “Services never include goods and goods never include services.” (True or false?)

Good or Service?

**Goods** are physical items that include raw materials, parts, subassemblies, and final products.

- Automobile, Computer, Oven, Shampoo

**Services** are activities that provide some combination of time, location, form or psychological value.

- Air travel, Education, Haircut, Legal counsel
Value-added services differentiate the organization from competitors and build relationships that bind customers to the firm in a positive way.
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Basic Principles of production Management

- Customers satisfaction is the prime goal of any organization, collect information about customer requirements.
- Develop management commitment for product quality
- Quality is the responsibility of every person in the organization
- Develop the strategy for global competition
- Rework and rejection are costly, so do the job right first time and every time
- Set the production rate and supply in conformance with customer's demand rate
- Reduce the unnecessary variety of products, parts and materials (Standardization)
Basic Principles of production Management (cont.)

- Reduce set-up time and idle non-productive time
- Reduce cycle time by eliminating unnecessary operations and combining operations where possible
- Use the full capacity of production equipment
- Select simple, low cost production equipment avoiding redundant features
- Before ordering replacement of an old machine, establish the economic justification
- Operational reliability and maintenance factors should be considered while ordering new equipment
- Reduce variety of production equipment for low inventory of spares and ease of maintenance
- Plan the layout of equipment to minimize workflow

Basic Principles of production Management (cont.)

- Use principles of motion economy to design the layout of workplaces
- Assign codes to parts, material and tools to facilitate traceability
- Exercise job rotation for mastery of multiple skills
- Automatic gradually and only when the process variability cannot be controlled otherwise
- Create more cells and workstations where waiting time and queues involve high cost
- Reduce inventories to minimum workable levels
- Record the performance of all-important function, particularly the output, quality appraisal and equipment breakdown and maintenance
- Analyze the records and derive interfaces for future decisions
- Rate the vendors and suppliers to select the best ones.
End of Chapter 1