

# Cheat Sheet: Managing Processes

## Essential Concepts

### **What is Operations Management?**

Operations management is responsible for all the activities involved in transforming a concept into a finished product or service. Included in these activities are planning and controlling the systems that produce these goods and services.

### **Production Processes**

Operations management includes decisions about the way in which production will proceed. Common production processes include project-based, batch, and mass production.

### **Production Planning**

Facility location is a critical aspect of planning as it involves a substantial investment that can have long-term consequences. As such, there are many factors to consider when choosing a location. Additionally, plant layout is important for optimizing production efficiency. The layout of a facility is most often determined by the product being manufactured. The four types of facility layouts are process, product, cellular, and fixed position.

The next stage in production planning after facility location and layout determination is material requirements planning (MRP), which uses computerized systems to ensure the availability of materials, labor, and equipment for production based on demand forecasts. Some companies go beyond MRP and adopt enterprise resource planning (ERP) systems that integrate information about suppliers and customers. Additionally, just-in-time (JIT) manufacturing is a strategy that aims to increase efficiency and reduce waste by receiving goods only when needed, but it requires close coordination between manufacturers and suppliers and carries risks related to supply chain disruptions.

Operations managers in complex processes use planning tools like Gantt charts, the critical path method (CPM), and the program evaluation and review technique (PERT) to increase operational efficiency and ensure the timely completion of tasks and projects.

Supply chain management refers to the management activities that maximize customer value and allow the company to gain a competitive advantage. It represents a conscious effort among

firms to work in the most efficient ways possible. Supply chain activities cover everything from product development, sourcing of materials, actual production, and transportation logistics.

## Quality Assurance

The cost of poor quality can range from a small refund to a single, dissatisfied customer to global product recalls. In order to ensure that their products, goods, and services meet consumer quality standards, companies can employ quality-control techniques such as Statistical Process Control (SPC), benchmarking, lean manufacturing, and Six Sigma. They can also seek certification through national and international quality-assurance organizations, like the International Organization for Standardization (ISO).

## Career Connection: Cover Letter

A cover letter is a one-page letter of introduction submitted with a résumé, explaining why you are suited for a position and highlighting your enthusiasm, relevant skills, and professional communication. It is not a revised version of your résumé but should be tailored to the specific organization and role, using a formal letter format and including contact information, date, employer details, greeting, and your signature.

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# Glossary

### batch production

a method used to produce similar items in groups, stage by stage

### benchmarking

one business' processes and performance metrics to industry bests and best practices from other companies

### cellular layout

combines some aspects of both product and fixed-position layouts; work cells are small, self-contained production units that include several machines and workers arranged in a compact, sequential order

### cover letter

a letter of introduction to a potential employer

### critical path method (CPM)

a diagram using arrows to show how tasks in a production process are related to each other and identifying the critical tasks that are dependent on each other and how long each task will take

**enterprise requirement planning**

a system that adds to MRP by also incorporating information about a business' suppliers and customers

**fixed-position layout**

the product stays in one place while workers and machinery move to it as needed

**full potential**

the point where the process produces the maximum amount of conforming product as possible with a minimum (if not the total elimination) of defective parts, rework, or scrap

**Gantt chart**

visual representation of a production timeline with start and end dates, milestones, and deadlines

**inbound logistics**

everything related to the incoming flow of resources that the company needs to produce its goods or services

**International Organization for Standardization (ISO)**

a nongovernmental agency based in Switzerland that has established international standards for quality management and environmental management providing a way for businesses and consumers to compare quality of management in the global marketplace

**just-in-time (JIT) manufacturing**

a strategy that companies employ to increase efficiency and decrease waste by receiving goods only when they are needed in the production process

**lean manufacturing**

eliminate as much waste from the manufacturing process as possible

**logistics**

the management of the transportation and flow of things between the point of origin and the point of consumption in order to meet requirements of customers or corporations

**Malcolm Baldrige National Quality Award**

an award given by the U.S. Commerce Department

**mass production**

manufacturing many identical goods at once

**materials requirement planning**

a computerized system to control the flow of resources and inventory using a master schedule to ensure that the materials, labor, and equipment needed for production are at the right places in the right amounts at the right times

**operations management**

managing the production process

**operations managers**

people charged with managing and supervising the production process

**outbound logistics**

everything related to the storage and transportation of finished goods

**PERT (program evaluation and review technique)**

similar to CPM but PERT assigns three time estimates for each activity, an optimistic time for completion, the most probable time, and a pessimistic time

**process layout**

arranges workflow around the production process with all workers performing similar tasks are grouped together

**product layout**

also called assembly line layout; used for products that require a continuous or repetitive production process

**production**

the creation of products and services

**project-based production**

also called job-based production; one-of-a-kind production in which only one type of item is manufactured at a time

**quality assurance**

processes to ensure that businesses are producing products and offering services that meet customer expectations

**six sigma**

a company-wide process that focuses on measuring the number of defects that occur and systematically eliminating them in order to get as close to zero defects as possible

**statistical process control (SPC)**

a method of quality control that uses statistical or mathematical methods to monitor and control a process

**supply chain management (SCM)**

the process of managing the movement of the raw materials and parts from the beginning of production through delivery to the consumer