Chapter 7 *Rapid* Review

Main Heading	Review Material	MyOMLab
FOUR PROCESS STRATEGIES (pp. 282–288)	■ **Process strategy**—An organization's approach to transforming resources into goods and services. *The objective of a process strategy is to build a production process that meets customer requirements and product specifications within cost and other managerial constraints.* Virtually every good or service is made by using some variation of one of four process strategies. ■ **Process focus**—A facility organized around processes to facilitate low-volume, high-variety production. The vast majority of global production is devoted to making low-volume, high-variety products in process-focused facilities, also known as job shops or *intermittent process* facilities. Process-focused facilities have high variable costs with extremely low utilization (5% to 25%) of facilities. ■ **Modules**—Parts or components of a product previously prepared, often in a continuous process. ■ **Repetitive process**—A product-oriented production process that uses modules. The repetitive process is the classic assembly line. It allows the firm to use modules and combine the economic advantages of the product-focused model with the customization advantages of the process-focus model. ■ **Product focus**—A facility organized around products; a product-oriented, high-volume, low-variety process. Product-focused facilities are also called *continuous processes* because they have very long, continuous production runs. The specialized nature of a product-focused facility requires high fixed cost; however, low variable costs reward high facility utilization. ■ **Mass customization**—Rapid, low-cost production that caters to constantly changing unique customer desires. ■ **Build-to-order (BTO)**—Produce to customer order rather than to a forecast. Major challenges of a build-to-order system include: *Product design, Process design, Inventory management, Tight schedules*, and *Responsive partners.* ■ **Postponement**—The delay of any modifications or customization to a product as long as possible in the production process. ■ **Crossover chart**—A chart of costs at the possible volumes for more than one process.	Concept Questions: 1.1–1.4 Problems: 7.1–7.12 **ACTIVE MODEL 7.1** **VIDEO 7.1** Process Strategy at Wheeled Coach Ambulance Virtual Office Hours for Solved Problem: 7.1
SELECTION OF EQUIPMENT (p. 288)	Picking the best equipment involves understanding the specific industry and available processes and technology. The choice requires considering cost, quality, capacity, and flexibility. ■ **Flexibility**—The ability to respond with little penalty in time, cost, or customer value.	Concept Questions: 2.1–2.3
PROCESS ANALYSIS AND DESIGN (pp. 288–293)	Five tools of process analysis are (1) flowcharts, (2) time-function mapping, (3) process charts, (4) value-stream mapping, and (5) service blueprinting. ■ **Flowchart**—A drawing used to analyze movement of people or materials. ■ **Time-function mapping** (or **process mapping**)—A flowchart with time added on the horizontal axis. ■ **Process charts**—Charts that use symbols to analyze the movement of people or material. Process charts allow managers to focus on value-added activities and to compute the percentage of value-added time (= operation time/total time). ■ **Value-stream mapping (VSM)**—A tool that helps managers understand how to add value in the flow of material and information through the entire production process. ■ **Service blueprinting**—A process analysis technique that lends itself to a focus on the customer and the provider's interaction with the customer.	Concept Questions: 3.1–3.4 Problems: 7.14–7.15 **VIDEO 7.2** Alaska Airlines 20-Minute Baggage Process–Guaranteed! **VIDEO 7.3** Process Analysis at Arnold Palmer Hospital

Chapter 7 *Rapid* Review *continued*

Main Heading	Review Material	MyOMLab
SPECIAL CONSIDERATIONS FOR SERVICE PROCESS DESIGN (pp. 293–294)	Services can be classified into one of four quadrants, based on relative degrees of labor and customization: 1. *Service factory* 2. *Service shop* 3. *Mass service* 4. *Professional service* Techniques for improving service productivity include: ■ *Separation*—Structuring service so customers must go where the service is offered ■ *Self-service*—Customers examining, comparing, and evaluating at their own pace ■ *Postponement*—Customizing at delivery ■ *Focus*—Restricting the offerings ■ *Modules*—Modular selection of service; modular production ■ *Automation*—Separating services that may lend themselves to a type of automation ■ *Scheduling*—Precise personnel scheduling ■ *Training*—Clarifying the service options; explaining how to avoid problems	Concept Questions: 4.1–4.4
PRODUCTION TECHNOLOGY (pp. 294–298)	■ **Computer numerical control (CNC)**—Machinery with its own computer and memory. ■ **Additive manufacturing**—The production of physical items by adding layer upon layer, much in the same way an ink jet printer lays down ink; often referred to as 3D printing. ■ **Automatic identification system (AIS)**—A system for transforming data into electronic form (e.g., bar codes). ■ **Radio frequency identification (RFID)**—A wireless system in which integrated circuits with antennas send radio waves. ■ **Process control**—The use of information technology to control a physical process. ■ **Vision systems**—Systems that use video cameras and computer technology in inspection roles. ■ **Robot**—A flexible machine with the ability to hold, move, or grab items. ■ **Automated storage and retrieval systems (ASRS)**—Computer-controlled warehouses that provide for the automatic placement of parts into and from designated places within a warehouse. ■ **Automated guided vehicle (AGV)**—Electronically guided and controlled cart used to move materials. ■ **Flexible manufacturing system (FMS)**—Automated work cell controlled by electronic signals from a common centralized computer facility. ■ **Computer-integrated manufacturing (CIM)**—A manufacturing system in which CAD, FMS, inventory control, warehousing, and shipping are integrated.	Concept Questions: 5.1–5. 4
TECHNOLOGY IN SERVICES (p. 298)	Many rapid technological developments have occurred in the service sector. These range from POS terminals and RFID to online newspapers and e-books.	Concept Questions: 6.1–6.2
PROCESS REDESIGN (pp. 298–299)	■ **Process redesign**—The fundamental rethinking of business processes to bring about dramatic improvements in performance. Process redesign often focuses on activities that cross functional lines.	Concept Questions: 7.1–7.2

Self Test

■ **Before taking the self-test,** refer to the learning objectives listed at the beginning of the chapter and the key terms listed at the end of the chapter.

LO 7.1 Low-volume, high-variety processes are also known as:
a) continuous processes. **b)** process focused.
c) repetitive processes. **d)** product focused.

LO 7.2 A crossover chart for process selection focuses on:
a) labor costs.
b) material cost.
c) both labor and material costs.
d) fixed and variable costs.
e) fixed costs.

LO 7.3 Tools for process analysis include all of the following except:
a) flowchart.
b) vision systems.
c) service blueprinting.
d) time-function mapping.
e) value-stream mapping.

LO 7.4 Customer feedback in process design is lower as:
a) the degree of customization is increased.
b) the degree of labor is increased.
c) the degree of customization is lowered.
d) both a and b.
e) both b and c.

LO 7.5 Computer-integrated manufacturing (CIM) includes manufacturing systems that have:
a) computer-aided design, direct numerical control machines, and material-handling equipment controlled by automation.
b) transaction processing, a management information system, and decision support systems.
c) automated guided vehicles, robots, and process control.
d) robots, automated guided vehicles, and transfer equipment.

Answers: LO 7.1. b; LO 7.2. d; LO 7.3. b; LO 7.4. c; LO 7.5. a.