**Convert It**

Most products used today are created by combining several different production activities. The specific activities used depend on the product. The production activities involved in making cereal, for instance, are much different from the production activities involved in educating and training attorneys. Let’s examine some activities that may be part of the production process.

**Planning**

Planning is an important ingredient of effective, efficient production. Before production planning begins, companies spend a lot of time, effort, and money finding out what customers want and need, designing new products, and updating existing products. **Production planning** determines *how* those products will be produced and in *what amounts*.

*Determining how products will be produced*. This activity involves determining the specific needs for equipment, time, and human resources. For example, a business that prepares income tax returns must decide how many computers it needs, the time needed to prepare an average return, and how many workers to hire.

*Determining what amount of the product to produce*. This activity is important because a business should try to produce only as much as it can sell. If a business does not produce enough products to meet customer demand, it will lose sales to competitors. But if it produces too much, it will lose money on unsold products. While some businesses try to obtain advance orders from customers to help with planning production quantities, others try to estimate the amounts they will sell. An aircraft manufacturer, for instance, might try to get advance orders for planes to determine demand, while a fast-food restaurant must estimate the number of food items it will need to produce.

**Purchasing**

Get an example of an in-depth production plan at <http://www.agf.gov.bc.ca/busmgmt/bus_guides/directmkt/direct_production.pdf>.

Buying the resources needed for production is called **purchasing**. This is the production activity that assembles all the inputs needed for production to take place. These resources may include raw materials, parts, equipment, supplies, machinery, and labor. To produce its goods, a clothing manufacturer needs to purchase patterns, fabrics, thread, buttons, zippers, cutting equipment, and sewing machines, and to hire workers trained in cutting and sewing tasks.

**Production process**

The **production process** is the way in which production will be carried out. A business must choose the production process that is most appropriate for its product(s).

The two kinds of production processes that are generally used are intermittent and continuous. An **intermittent production process** is one in which production periodically stops and restarts. It can be used in the production of standard products such as tools, or custom products such as individual insurance policies. A producer of garden tools or snow shovels, for instance, might use an intermittent production process to make these products since the products are not in demand all year long. An insurance agent would customize a policy only when a specific customer requests it, which would not be on a continuous basis.

A **continuous production process**, on the other hand, turns out products without stopping. It is used in the production of standard products with steady demand, such as toothpaste or cell phone service. In some instances of continuous production of products, production is carried out by machines monitored by a limited number of workers. Other examples of continuous production, such as hairdressing and delivering mail, though, are labor-intensive**—**relying on workers’ skills to get the job done.

The amount that is produced using either method depends upon the business’s choice of unit, batch, or mass production. **Unit production** means producing one item at a time or items in small quantities. It would be used to produce a custom-tailored suit, to write a song for a recording artist, or to clean one customer’s carpet.

**Batch production** means producing items in specific amounts, or batches. It is often used to meet specific or short-term market needs. For example, Starbucks usually produces batches of pumpkin lattes in the fall and batches of peppermint mochas in the winter.

**Mass production** means producing products in large quantities. It is used in the production of such outputs as jeans, cars, and appliances. Many products that are mass produced have standardized, interchangeable parts. For example, the parts for one mass-produced Whirlpool dishwasher will fit all Whirlpool dishwashers of the same model. To produce large quantities efficiently, mass production uses production techniques such as:

 **• Assembly lines**, in which the product moves past workers, each one of whom performs an assigned production task

 **• Robotics**, in which robots carry out the repetitive tasks that workers would find monotonous and tiring

 **• Automation**, in which tasks are completed by automatic means, such as technology, reducing human effort and labor

See how assembly lines and robotics have shaped production in “The Assembly Line: Then and Now” from the History Channel:
<http://www.history.com/topics/henry-ford/videos/history-of-the-holidays-the-story-of-labor-day>.

**Routing**

The production activity that determines the sequence for the steps in the production process is called **routing**. Producing canned peas, for example, would begin with shelling and washing the peas, cooking them, putting them in cans, sealing the cans, labeling the cans, and packing the cans in boxes for shipment. Now, consider a Hollywood film. It begins with a concept or a script. After that, the movie receives financing, and producers hire directors, actors, and crew members. After filming locations are secured, filming can begin with each scene being shot in a specific order. As you can see in these examples, routing establishes the paths that inputs take from the time they are received, through the conversion process, and until they become outputs.

**Scheduling**

**Scheduling** establishes the timetable to be followed in production. Employees responsible for scheduling look at the number of steps in the production process and estimate how long each step will take. They then set the times for each step to begin and end, and schedule delivery of the resources that will be needed in the production process.

Scheduling helps businesses meet customer needs without wasting time or resources. A toy company, for instance, would schedule greater production of toys before Christmas than it would after Christmas because demand is greater before the holidays. Scheduling can be a very complicated process, so many businesses rely on special software programs to help with it.

**Dispatching**

Issuing orders for production to start is known as **dispatching**. Dispatches are usually written orders that tell employees what their job assignments are, when to move materials from storage to the work area, or which tools and equipment to assemble. For example, a work order might list the parts to be brought to the work area to produce a certain number of circular saws.

**Follow-up**

The last production activity is following up to make sure production was carried out according to plan and that products meet company standards. To be competitive in a global market, many companies must also meet the standards set by outside groups or agencies, such as the **International Organization for Standardization** **(ISO)**, which sets international quality control standards.

During the follow-up, managers review production schedules to make sure deadlines were met and products were ready when customers wanted them. The quality of most products is inspected during their production. Managers review the results of these inspections to see if there are problems in the production process. For example, inspection reports that indicate product flaws would tell the manager that there is a production problem that needs to be corrected.

**Summary**

It takes more than one production activity to produce most products. Production activities include planning how products will be produced and in what amounts; purchasing the needed inputs; determining the production process (intermittent vs. continuous production and unit, batch, or mass production); routing the sequence of steps; scheduling a timetable; creating dispatches (orders); and finally, following up to ensure schedules are followed and standards are met.