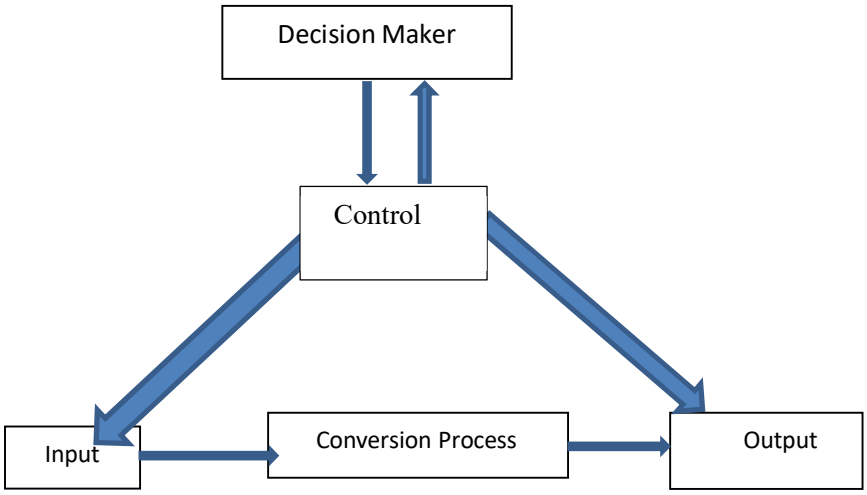
TYPES OF PRODUCTION SYSTEM

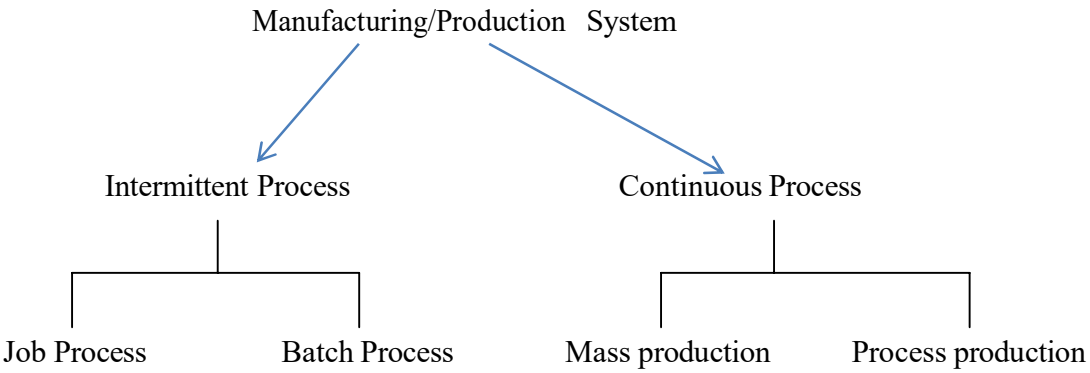
Manufacturing Systems

Production is the process by which goods and services are created. A typical production system is depicted in figure given below.

MANUFACTURING SYSTEM



The inputs can be raw materials, components, paperwork, etc. Whereas outputs are completed parts, products, paper work output, services and scrap. Manufacturing systems can be classified in two categories: (i) Intermittent system and (ii) Continuous system.



Intermittent System

In this system, the goods are manufactured specially to fulfill orders made by customers rather than for stock. Here the flow of material is intermittent. Intermittent production systems are those where the production facilities are flexible enough to handle a wide variety of products and sizes.

Examples of intermittent system are: machine shops, hospitals, general office etc.

Chief characteristics of intermittent system are:

1. Most products are produced in small quantities.
2. Machines and equipment are laid out by process.
3. Workloads are generally unbalanced.
4. Highly skilled operators are required for efficient use of machines and equipment.
5. In-process inventory is large.
6. Flexible to suit production varieties.

Job- Production or Project Type Production

Job or 'make complete' production is the production of single complete unit by one operator or a group of operators e.g. bridge building, dam construction, ship building etc. Here whole project is considered as one operation and work is completed on each product before passing on to the next.

In this system the goods are produced to definite customer's orders.

There is no assurance of continuous demand for specific items and the manufacturing depends on the receipt of orders from customers.

Job-order process is characterized by

1. Whole project is taken as a single operation.
2. Work is to be completed on each product before processing the next item.
3. Versatile and skilled labour is needed.
4. High Capital Investment required.
5. Control operations are relatively simple.
6. High unit cost of production.

Batch-Production

The items are processed in lots or batches unlike job-type system where one item is produced during each production run.

In batch-type system new batch is undertaken for production only when the work on all items of a batch is complete.

It is characterized by

1. One can employ more specialized labour for each operation with comparatively low investment.
2. Organization and planning is more complicated in this system.
3. The irregularity in the increase of work added to the basic material.

The best example of batch production system is of chemical industry, where different medicines are manufactured in batches. Other examples can be, production of electronic instruments, machine tools, printing press etc.

Features of an intermittent System

1. Demand can be discontinuous.
2. All operational stages may not be balanced.
3. Elaborate sequencing and scheduling is required.
4. Needs high investment.
5. Planning, routing and scheduling changes with fresh orders.
6. Storage is necessary at each stage of production process.
7. Can adjust to new situation and specification.
8. Inspection is not in line with production.