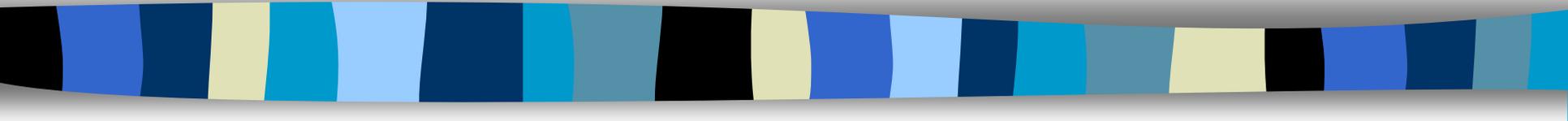


# Types Of Production





# Basic production Types :

- Job production
- Batch production
- Continuous production
- Mass production



# Basic factors influencing type of production

- Nature of job
- Required Quantity

# Job Production

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- Small Production Rate(low quantity is required)
  - Highly flexible manufacturing system is required
  - Job shop handles the variety of jobs.
  - Each product is different from each other.
  - Unique processing operations are required each time for a unique product
  - It is opposite to mass production.



# Problems in job Production

- One time Production For specific Order.
- WIP inventories are very high
- Long Completion Time For each Process
- Complex waiting line system
- Facilities are minimum and certain unpredictable problems.



# Expected performance standards could be:

- Mean flow time
- Total processing time.
- Idle time of machines.
- Mean earliness and lateness of jobs  
(Job completed before due date is its earliness. Lateness — actual completion time — due date)



## PERFORMANCE STANDARDS CONTNUED..

- Mean tardiness of jobs (Job completed after its due date).
- Number of tardy jobs.
- Mean waiting time.
- Mean number of jobs in the system.



# BATCH PRODUCTION

- Production of similar components or products
- Moderate volume of production
- Flexible Manufacturing systems are required
- Batch production is the manufacturing of different versions of the same products  
e.g; different colours, types of paints, types of medicines, types of bevarages



# Batch production

- Batch production may be carried out on process or product layout.
- Capacity of any machine or a group of machines is fully utilized to meet the demand rate of certain products.
- Batch size for batch production is determined on the basis of economic lot size.



# Factors Involve In Batch Calculations

- Manufacturing Lead Time
- Number of work stations
- Lot Size
- Process Time Of One Component
- Waiting time at station
- Set up time



# CONTINUOUS PRODUCTION

- Product is in continuous demand
- Quantity is very large
- Random or seasonal demand fluctuations
- In Process Inventory is low.
- Rapid adjustment of the process for correction of non conformities or for small changes in the product design.

- 
- Production line does not stop as it would proved to be very expensive to switch the assembly line on and off daily.
  - Long production run and lower Unit cost.
  - Energy Savings can be achieved
  - Eliminates unnecessary startup and shut down steps.



# **Advantages Of continuous Production over Batch production:**

- Changover Time is very low as compared to batch production
- Lower unit cost and energy savings achieved as compared to batch production
- Manpower required is specialist, do not perform repetitive tasks as it has to perform in batch production
- Undifferentiated marketing.



# Examples of continuous production:

- Assembly lines of automobiles
- Home appliances
- Beverages
- Pharmaceutical products
- Plastic shopping bags
- Photographic films etc



# Mass Production

- Large scale production
- Produce fewer parts in greater volumes
- Higher rates of production
- System is inflexible
- Product layout type is used
- Mass Production is also demand driven
- Time saving process



## Mass Production:

- Loads of identical items are made.
- No variety in designs of the products.
- Special Purpose machine tools are used.
- Production rate would be like 50,000 per annum if there is production of a product.



# Mass Production:

- Monotonous or Repetitive parts production.
- Higher initial capital investment.
- Changeover time is almost negligible.
- Uniformity and highly finished goods.
- Large amount of standardized products is achieved.



# Advantages Of Mass Production:

- Assembly line Production has resulted in many advantages like
- Reduction in cost
- Uniform products manufacture in shorter period of time
- Products are highly affordable and easy to repair.
- Increase profitability



# Disadvantages Of Mass production:

- Rigid or inflexible production facilities.
- Lower build qualities.
- Monotonous products are produced may cause motivational problems in the workers.
- Higher capital investment is required.



# Examples:

- Food industry.
- Petrochemicals
- Ball point ,markers manufacturing industries.
- Assemblies of different parts like fasteners etc.
- Automobile industry.