

Post Graduate Diploma in Management – 2020  
Covid – 19 Term

# Manufacturing Processes and Facility Layouts

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Thursday, September 3, 2020



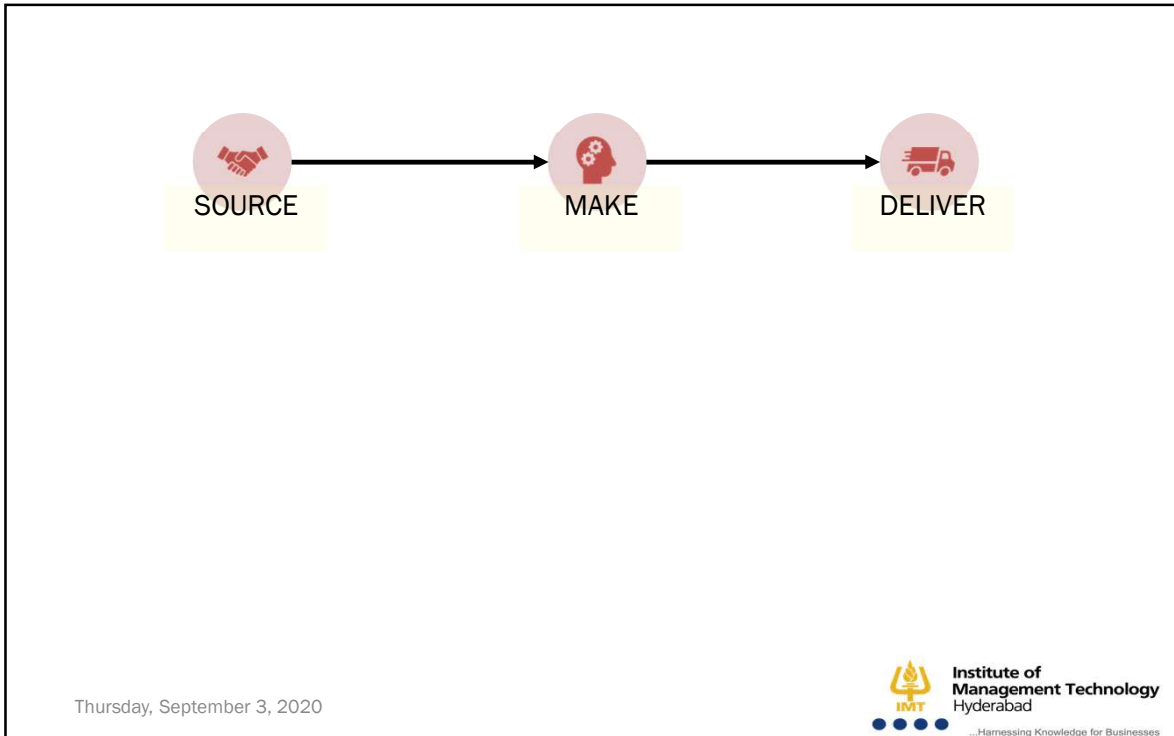
78

# MANUFACTURING PROCESSES

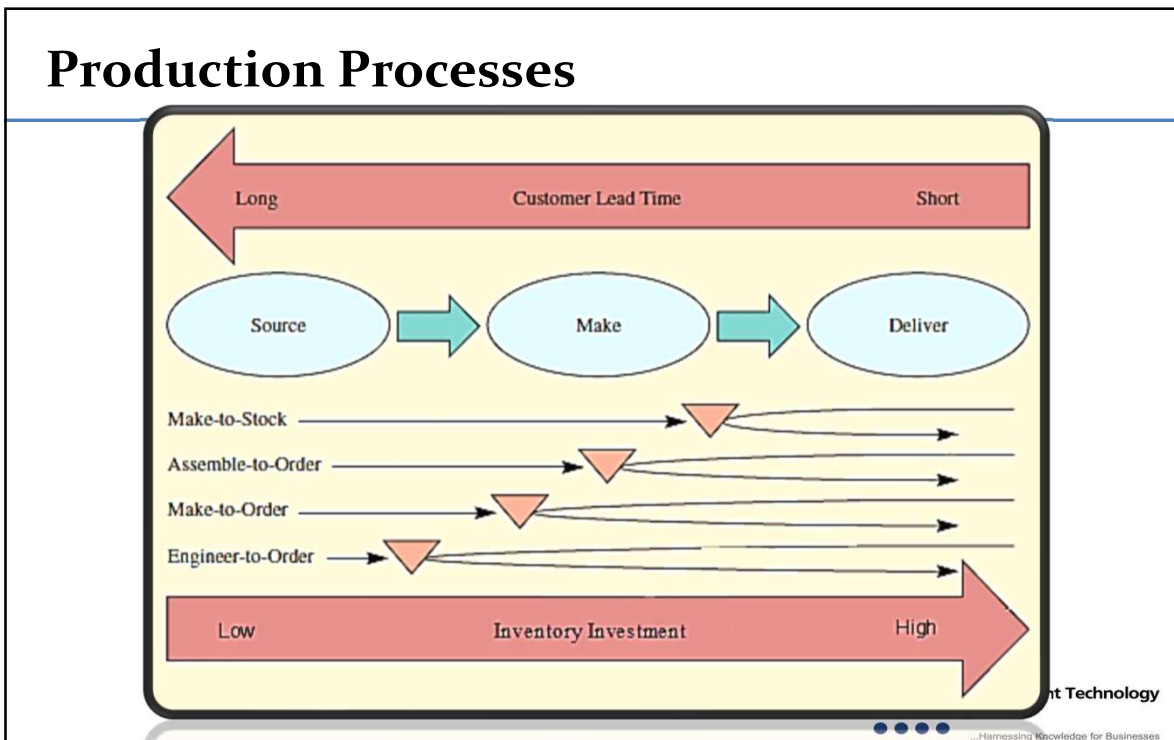
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79



80



81

## Make-to-Stock



- Key challenge: balance the level of inventory against the level of customer service.
  - Easy with unlimited inventory, but inventory costs money
  - Trade-off between the costs of inventory and level of customer service must be made.

82

## Assemble-to-Order



- Key challenge: Define a customer's order in terms of alternative components because these are carried in inventory.
- Needs a process design that enables as much flexibility as possible in combining components.

83

## Make-to-Order/Engineer-to-Order



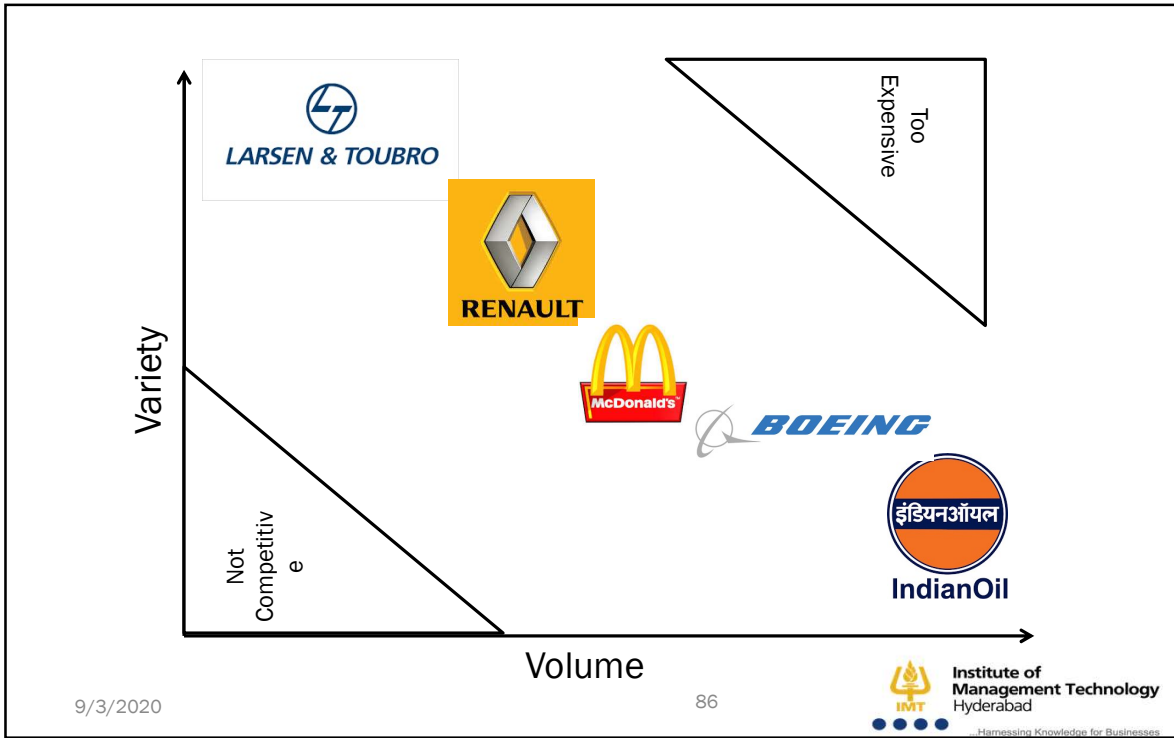
- Customer order decoupling point could be in either raw materials at the manufacturing site or the supplier inventory.
- Depending on how similar the products are, it might not even be possible to preorder parts.

84

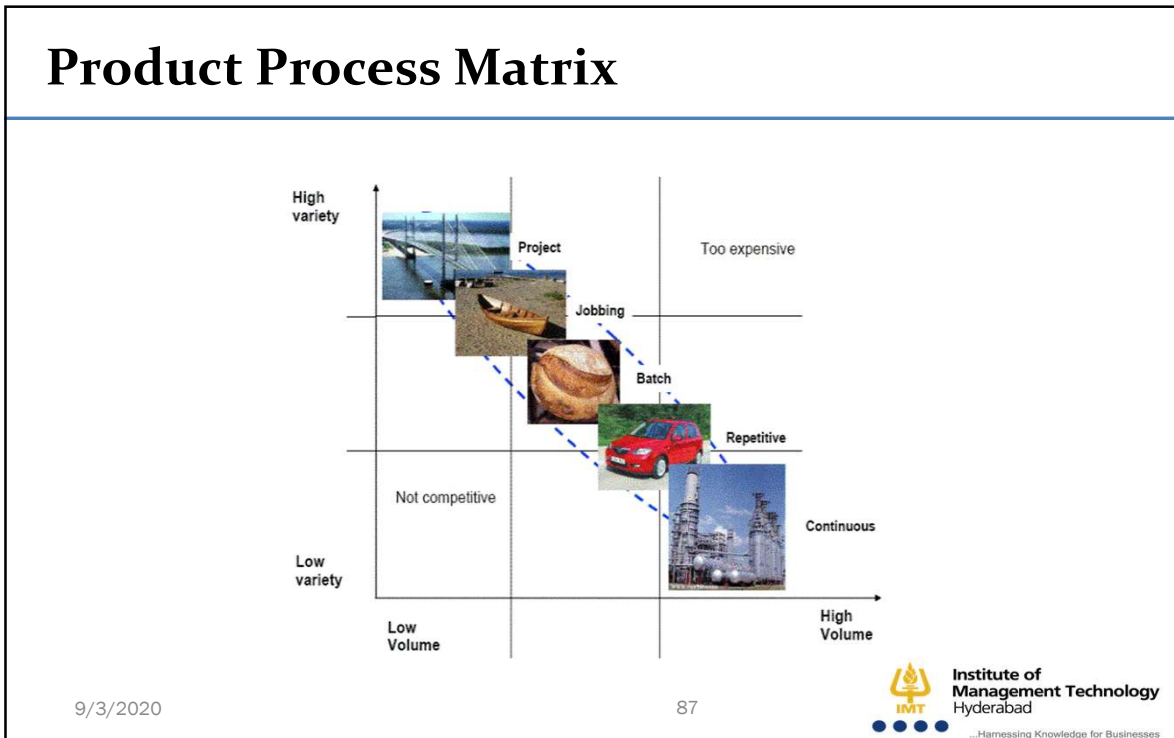
## PRODUCT PROCESS MATRIX

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85



86



87

## Continuous flow

- Highly standardized goods and services
- Very efficient, very high volume
- Very rigid, lack of variety, costly to change, very high cost of downtime
- Usually continuous flow
- Equipment has very less flexibility



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88

## Repetitive/Assembly

- Standardized goods or services
- Low per unit cost
- High volume, efficient
- Flexibility?
- Flow?



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89



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## Batch Process

- Semi-standardized goods and services
- Flexibility
  - easy to add or change products or services
- Moderate cost per unit, moderate scheduling complexity



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90

90

## Project

- Customized Goods and Services
- Able to handle a wide variety of work
- Slow, high cost per unit, complex planning and scheduling
- Flexibility?
- Flow?



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91

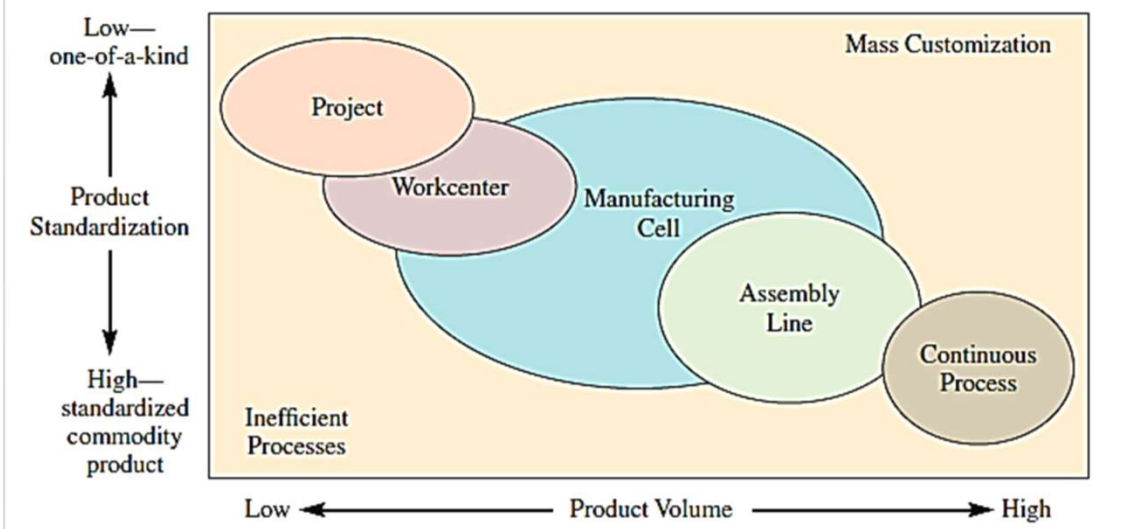
91

## Layout Planning

- Layout planning in manufacturing & service organizations
  - deals with physical arrangement of various resources that are available in the system
  - with an objective to improve the performance of the operating system
- Benefits of good layout design
  - Jobs in a manufacturing system travel lesser distance
  - Customers spend less time in service systems
  - Costs & Lead time come down
  - Improved quality

92

## Product–Process Matrix: Framework Describing Layout Strategies



93