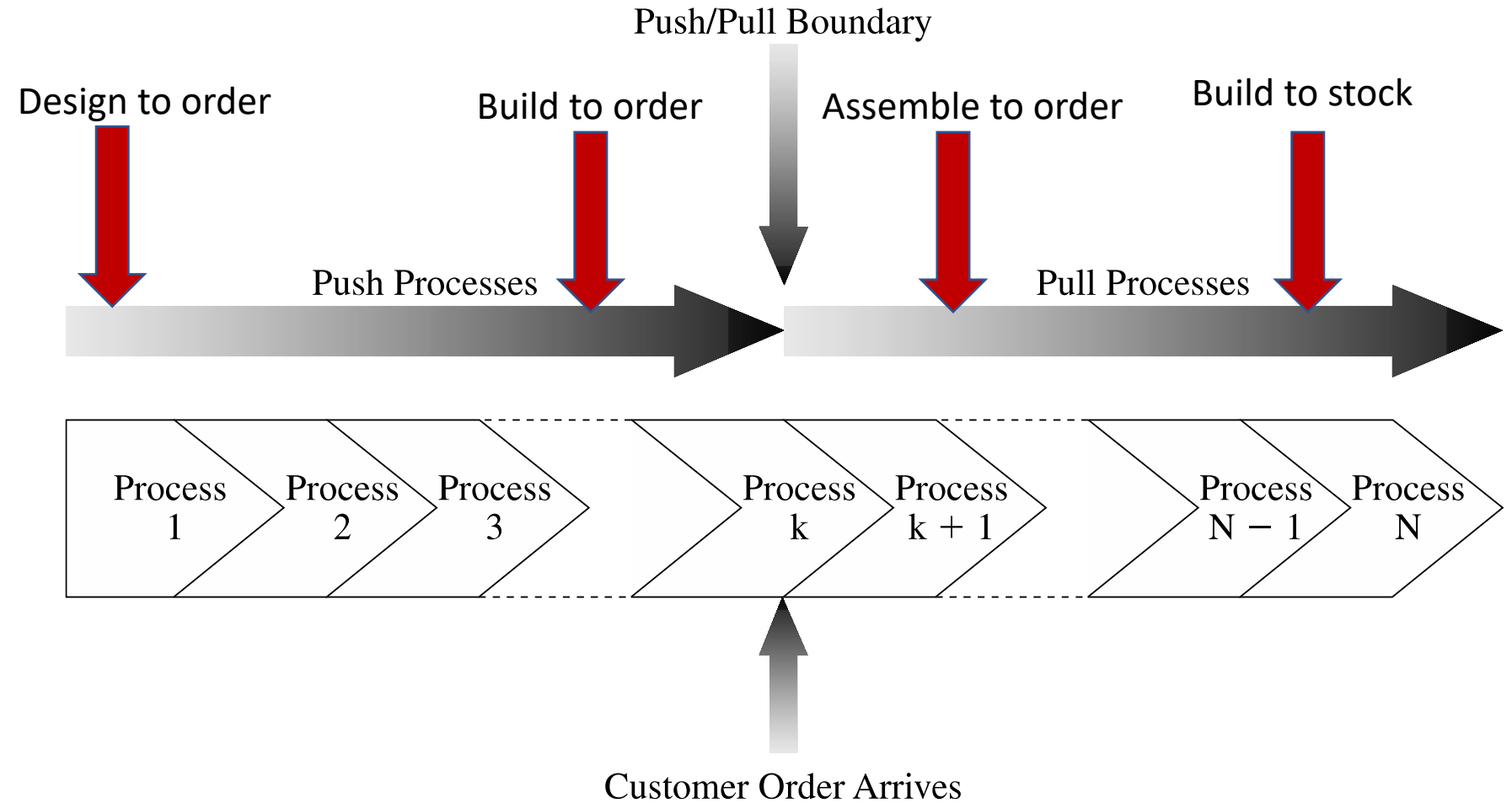# Summary of Session 2

Process Analysis

- Cycle time: Time between two consecutive outputs
- Lead time: Time taken by one particular product unit = Cycle Time * WIP
- Throughput is the reciprocal of the cycle time
- Bottleneck defines system throughput
- Typically, bottleneck stage has the highest capacity utilization and defines the system utilization
- If there is a higher discrepancy between system (bottleneck) utilization and average stage utilization, it indicates variance of utilizations across stages
- Lowering the WIP is good to reduce the lead time, although may carry the risk while facing uncertainty

Inventory Management

- Types of inventory:
  - In-transit / decoupling / safety stock / anticipation / cycle stock or lot size …
- Inventory related metric:
  - Customer service level / inventory driven costs / operational metric like days of inventory
- Inventory costs:
  - Cost of capital / obsolescence cost / handling cost / insurance / damage or pilferage / tax / component devaluation / markdown / product return / marketing effort → Affecting Return on Net Assets

- Profit margin
- Product variety
- Product volume
- Demand uncertainty

Push/Pull Boundary

Design to order

Build to order

Assemble to order

Build to stock

Push Processes

Pull Processes

Process 1 | Process 2 | Process 3 | Process k | Process k + 1 | Process N − 1 | Process N

Customer Order Arrives

Restructuring: Advancing the Customer Ordering