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# Module Two

## Managing Inventory

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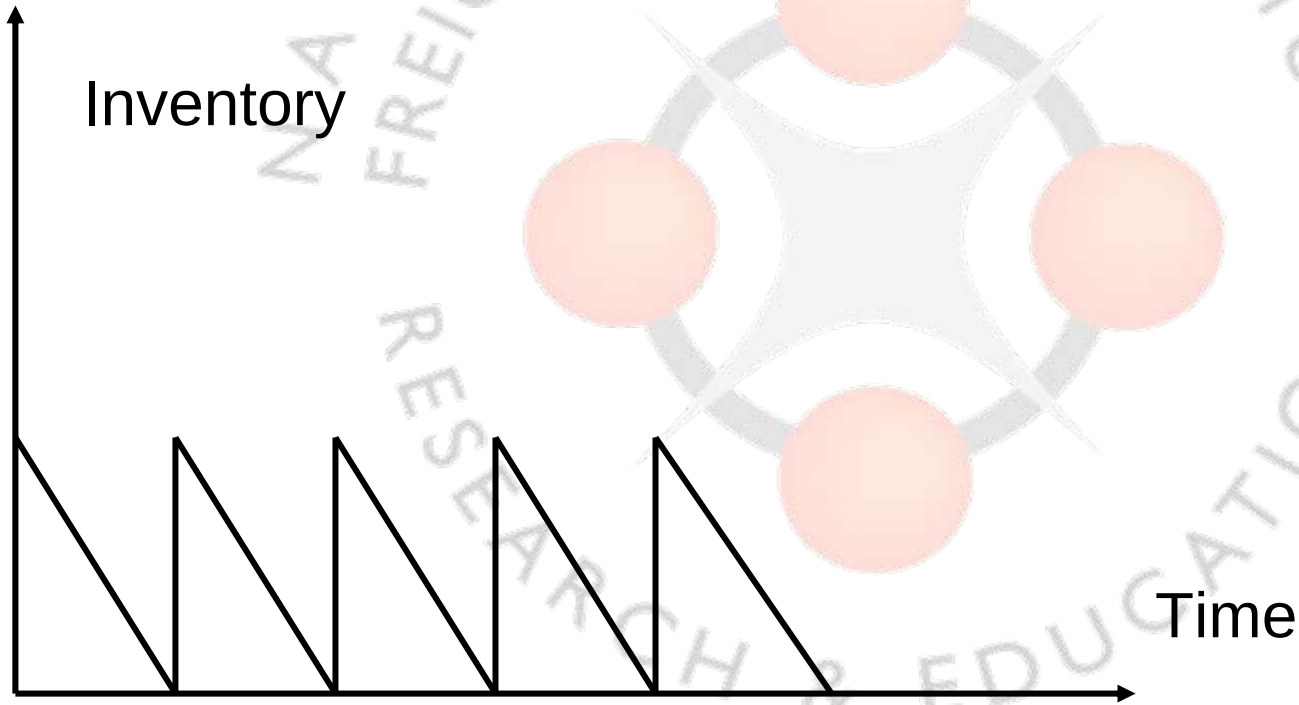
THE UNIVERSITY of WISCONSIN MADISON

# Managing Inventory

- Cyclical inventory pattern
- Major inventory costs and ordering policies
- Base stock policy

# Cyclical Inventory



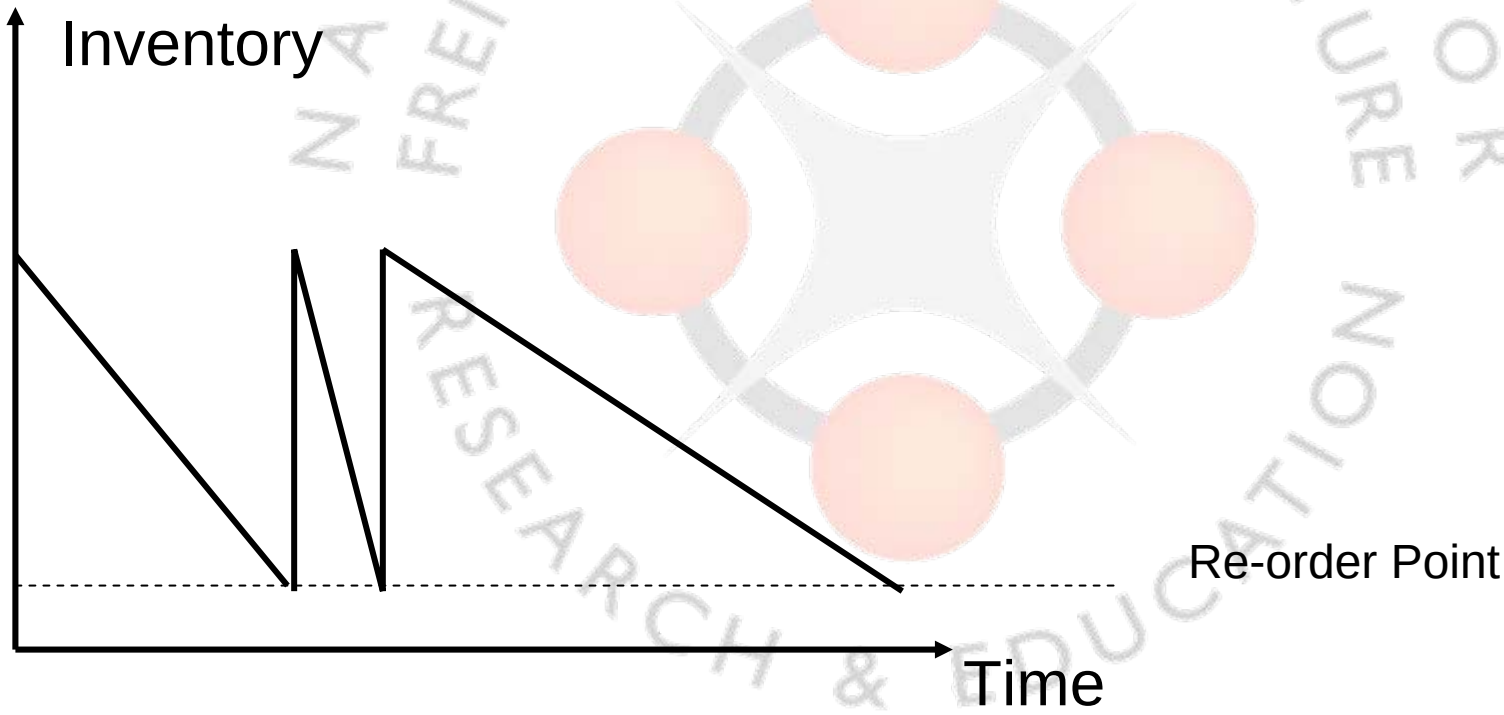
# Issues

- More frequent shipping
  - Reduces inventory costs
  - Increases transportation costs
  - Increases service requirements
- Larger order quantities
  - Reduce transportation costs
  - Increase inventory costs
  - Reduce service requirements

# Trade-off Considerations

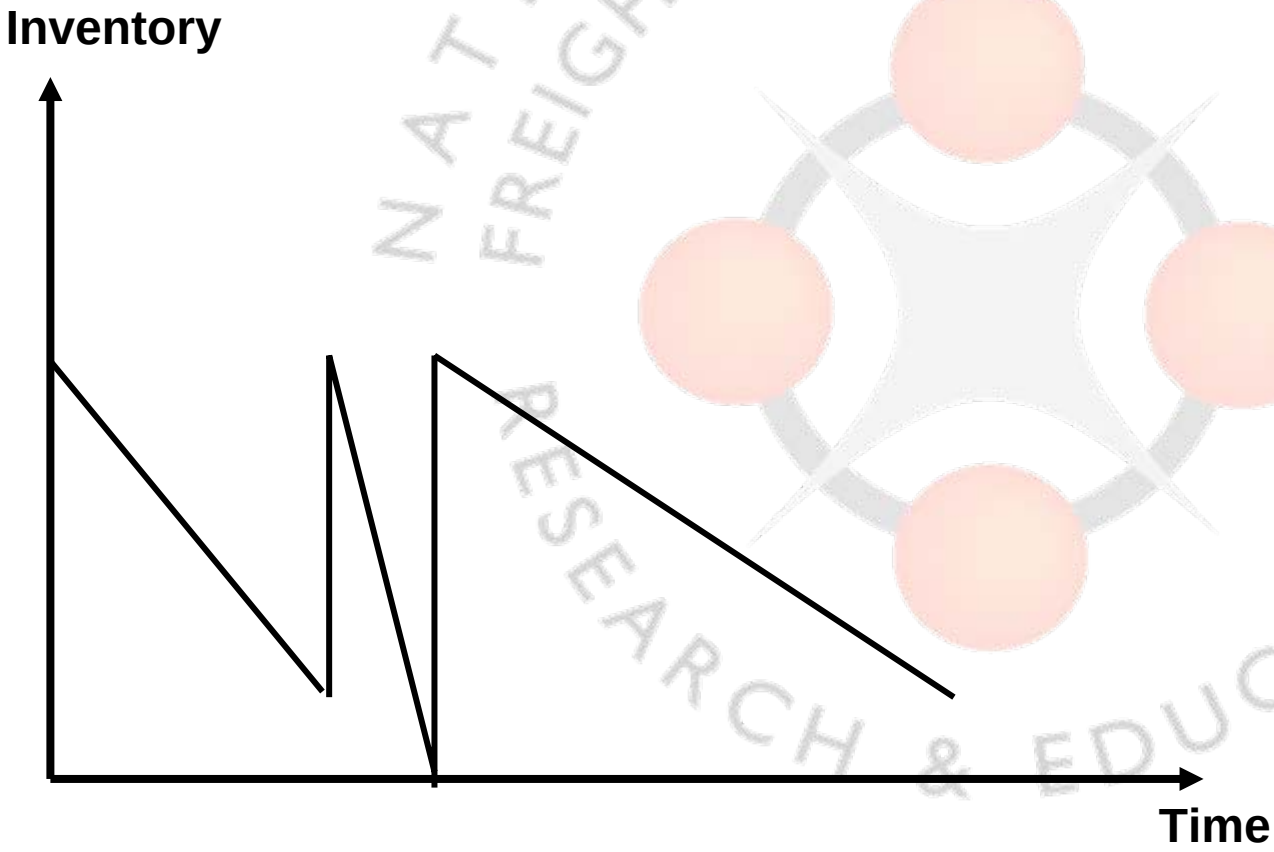
- Unit purchase price
- Fixed ordering costs
- Holding costs
  - Capital
  - Storage
  - Shrinkage, loss, damage, obsolescence

# Cyclical Inventory



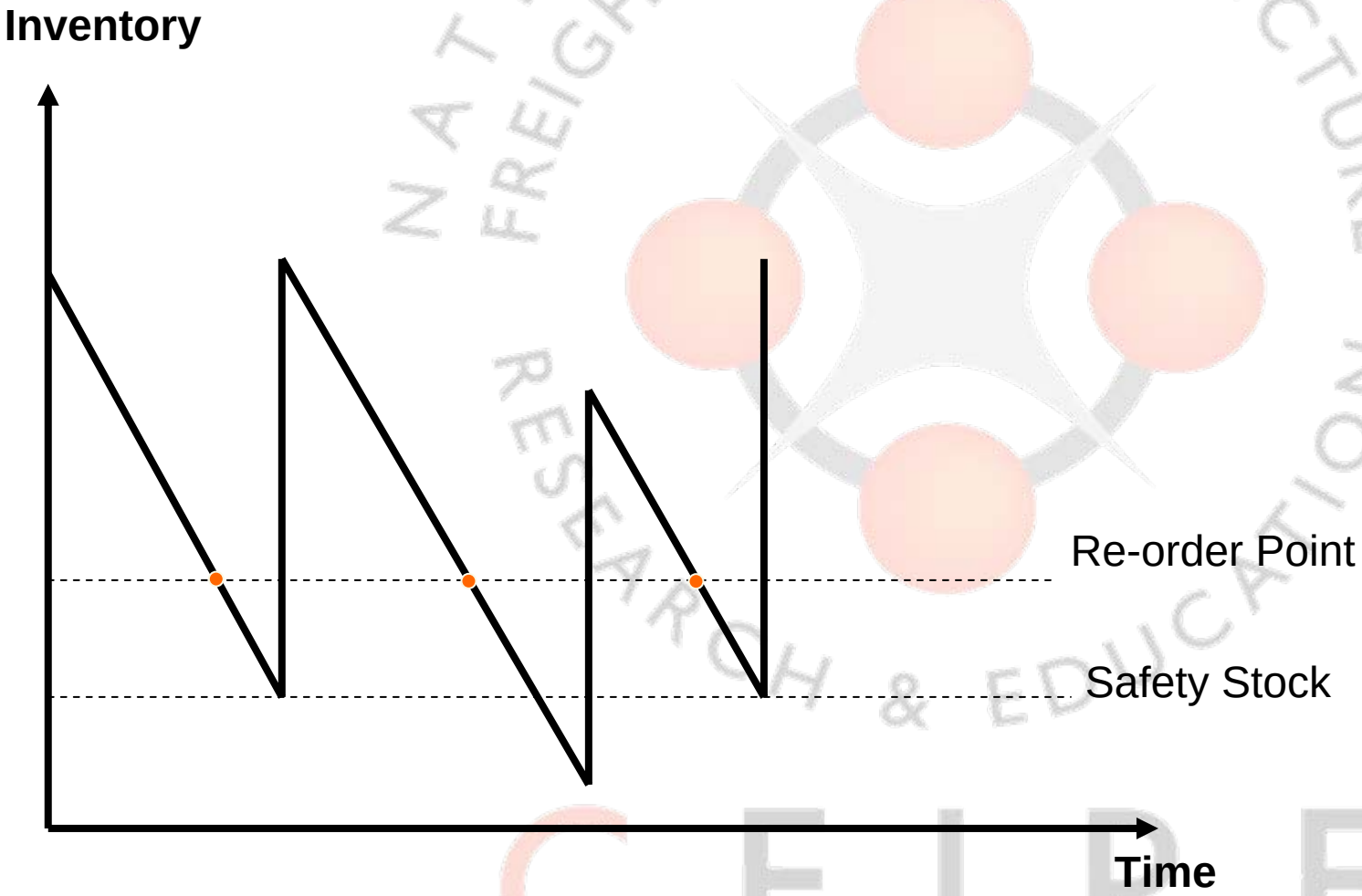

**Graph shows three different periods of inventory. Each is stocked to the same point at the beginning, but due to differences in demand they take different times to hit the reorder point.**

# Cyclical Inventory




**Similar to the previous slide, this graph shows how unpredictable demand can cause a seller to run out of a certain product.**

# Safety Stock



# Issues in Safety Stock

- Uncertainty in demand
- Uncertainty in delivery
- Cost of holding
- Cost of transportation
- Cost of administration

# Inventory Strategies

- Improved transportation service
  - Just-in-time
- Information technology
  - Pull logistics
  - Manufacturing on demand

# Just-in-Time

- Minimal or no inventory held
- Warehouse on wheels
- Materials moved from trucks directly to assembly
- Usually seen in manufacturing

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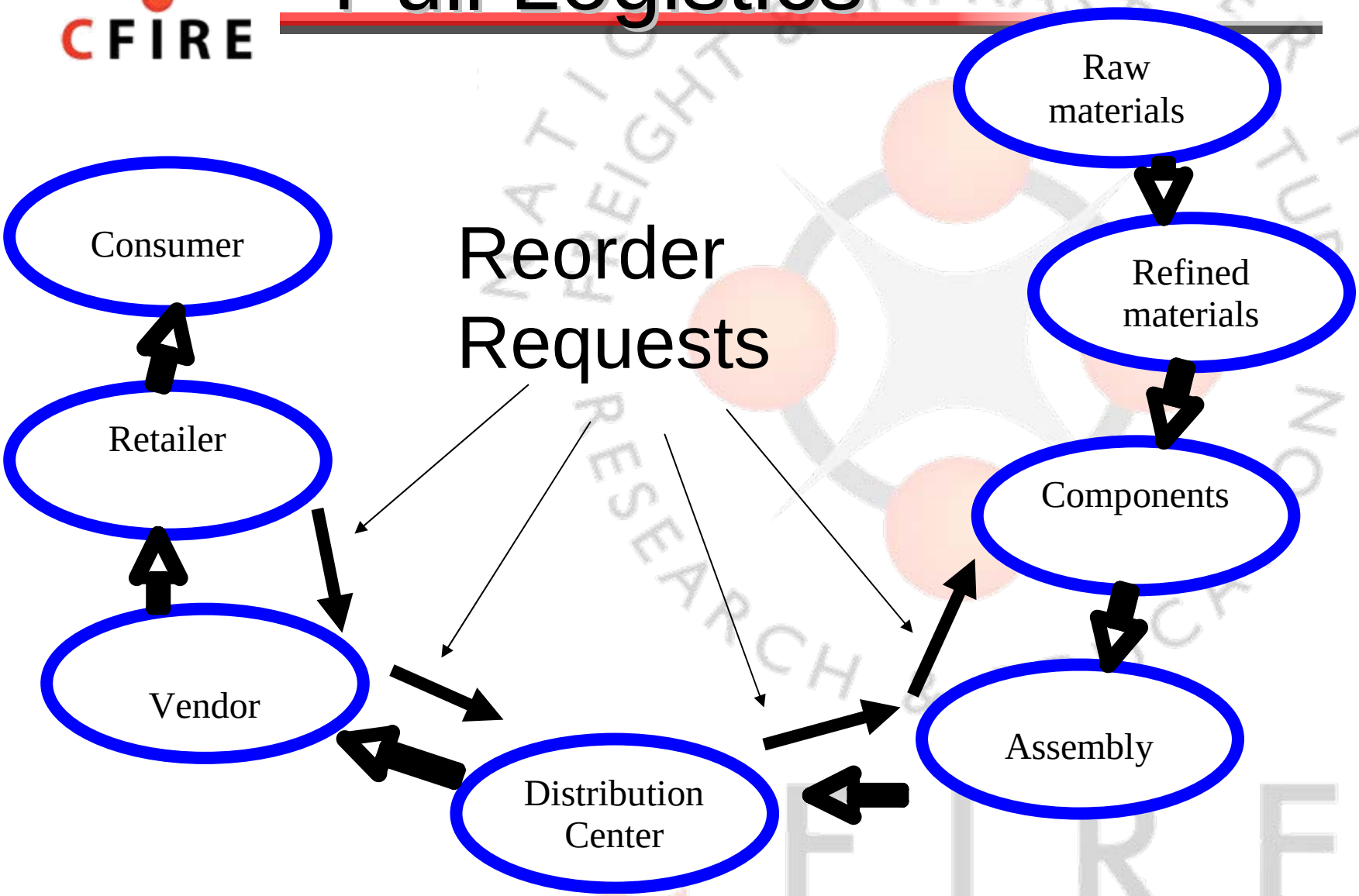
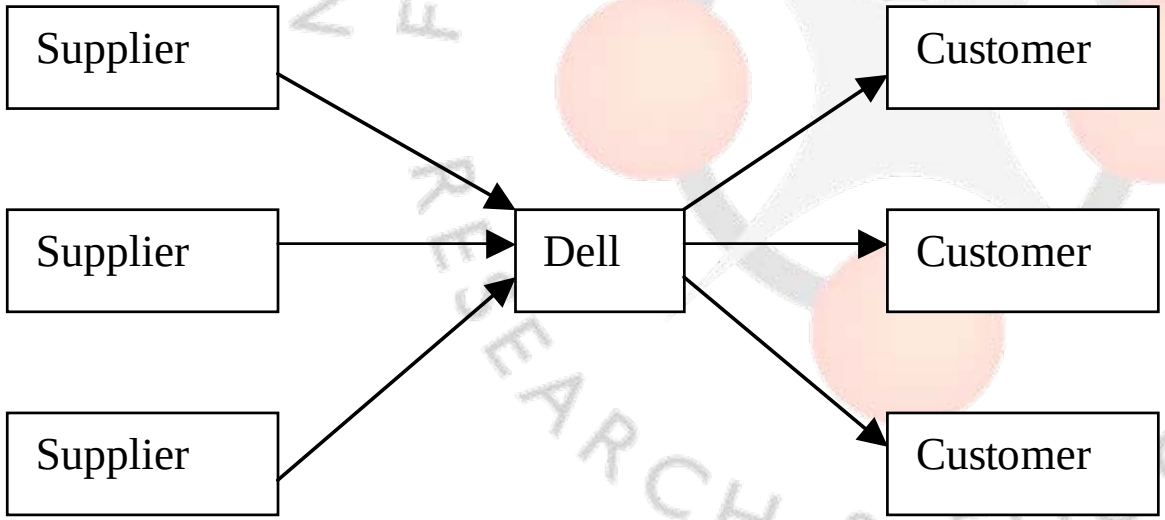
# Just-In-Time

- Targeted delivery window
- Little room for error
- Severe consequence of error

# Pull Logistics



# Dell Manufacturing on Demand



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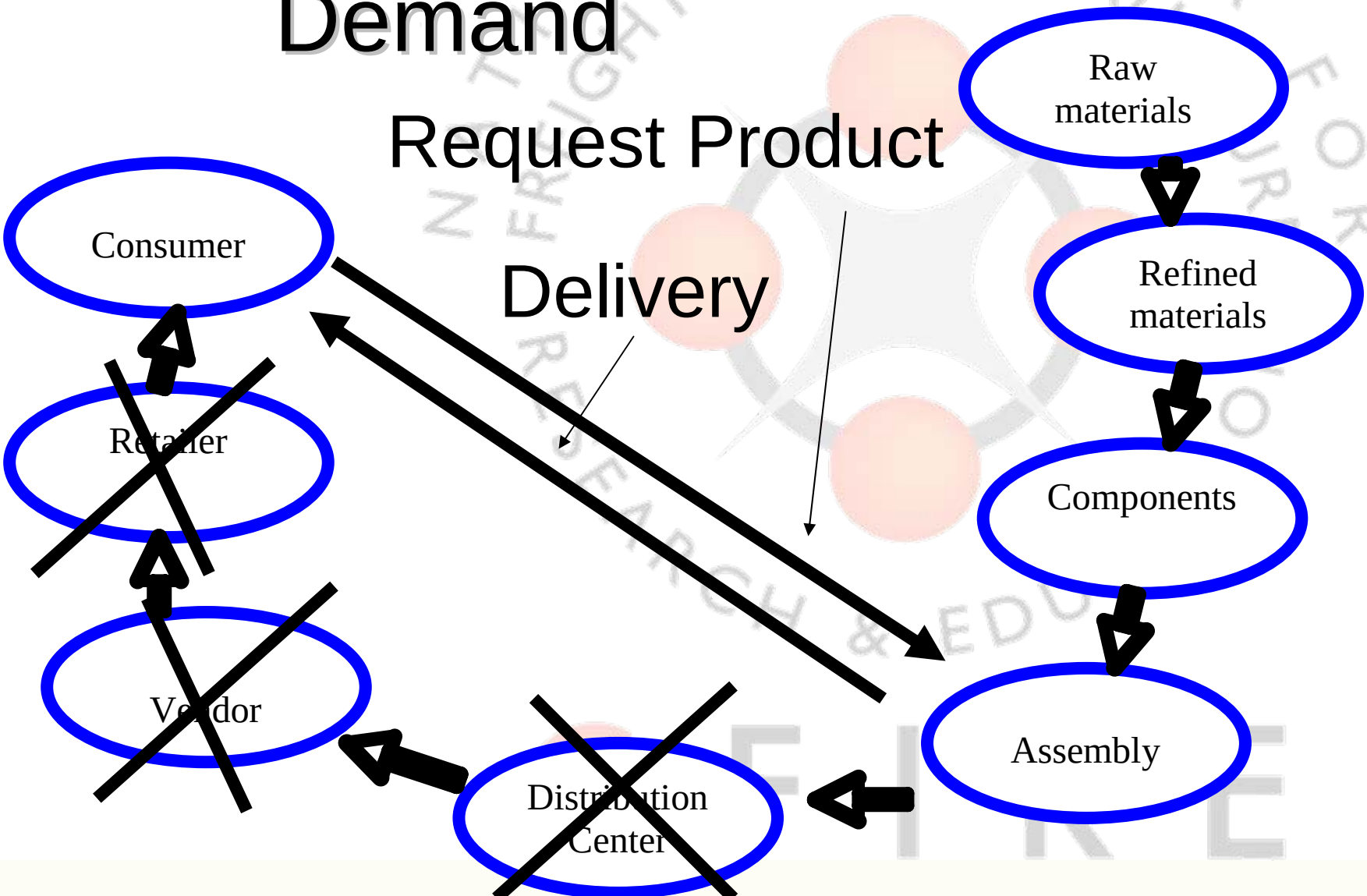
# Manufacturing on Demand



# Implications for the Public Sector

- Reliability
- Timed arrivals
- More frequent delivery
- More truck-reliant