Week 8:

XBOX Case Study

MIS 3537: Internet and Supply Chains

2005 - Present

- **2005**
  - Actual sales 600,000 units – well short of 1.5 mm plan primarily due to production shortages (e.g. components)
  - Xbox LIVE community > 2mm users
  - Some initial flaws ('Red Ring of Death')
  - Original Xbox discontinued (24 mm units) supported thru 2009
- **2006**
  - System sold amazingly well
  - March Sony announced PS3 launch delayed until Nov 2006
  - Aug – Xbox Live hits 50 mm downloads
- **2007**
  - March Xbox 360 Elite (120 GB hard drive, black finish) released
  - Xbox Live 3 mm globally

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2005 - Present

- **2009**
  - May Xbox Live 20 mm globally
  - Nov – Added live TV and integration with Facebook, Twitter
- **2010**
  - June – 41.7 mm consoles globally
  - July – Xbox 360 S (slim) released with 250 GB hard drive and Wi-Fi
  - Nov – Kinect (controller free gaming experience with motion, voice) released
- **2011**
  - March - > 53 mm consoles globally
  - Rumors of Xbox 720

2005 - Present

- 2012
  - Xbox 75 mm consoles (vs. 100 mm Nintendo Wii, PS3 70 mm) Not highest seller of 7th generation but most influential
  - Xbox LIVE community > 40mm users
- 2013
  - May – Xbox One (successor console) with blu-ray drive, Skype, etc.
  - Aug – Xbox Live hits 50 mm downloads
- 2014
  - March Xbox 360 Elite (120 GB hard drive, black finish) released
- 2015
  - May Xbox Live 20 mm globally
  - Nov – Added live TV and integration with Facebook, Twitter

Case Answers: which is Better?

Keys to Success:

- <u>More content available</u>: providers bring sufficiently different content on one site obviating need to visit other sites or use different viewing options.

- <u>Free to use</u>: users only need to register to watch much free content.

- <u>Popularity</u>: Providers use social network platforms to attract more users / audience

- <u>Relationship with Partners</u>: Understand each partner's business to provide what they desire (profit, audience share, buzz, etc.)

There are several keys to success. Having more content available as well as sufficiently different content on one site obviates need to visit other sites or use different viewing options. Providing viewing free of charge means users only need to register to watch much the content. Providers use social network platforms to attract more users / audience and drive up their popularity. A strong Relationship with Partners is also a key to success. The relationship allows understanding each partners' business to provide what they desire most (profit, audience share, buzz, etc.).

Week 9: eFulfillment & Distribution

MIS 3537: Internet & Supply Chains

With material from Supply Chain Management by Chopra S and P Meindl

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Learning Objectives

- Understand the core eFulfillment principles

- Learn about various e-distribution strategies

- Designing Distribution Networks

What is eFulfillment?

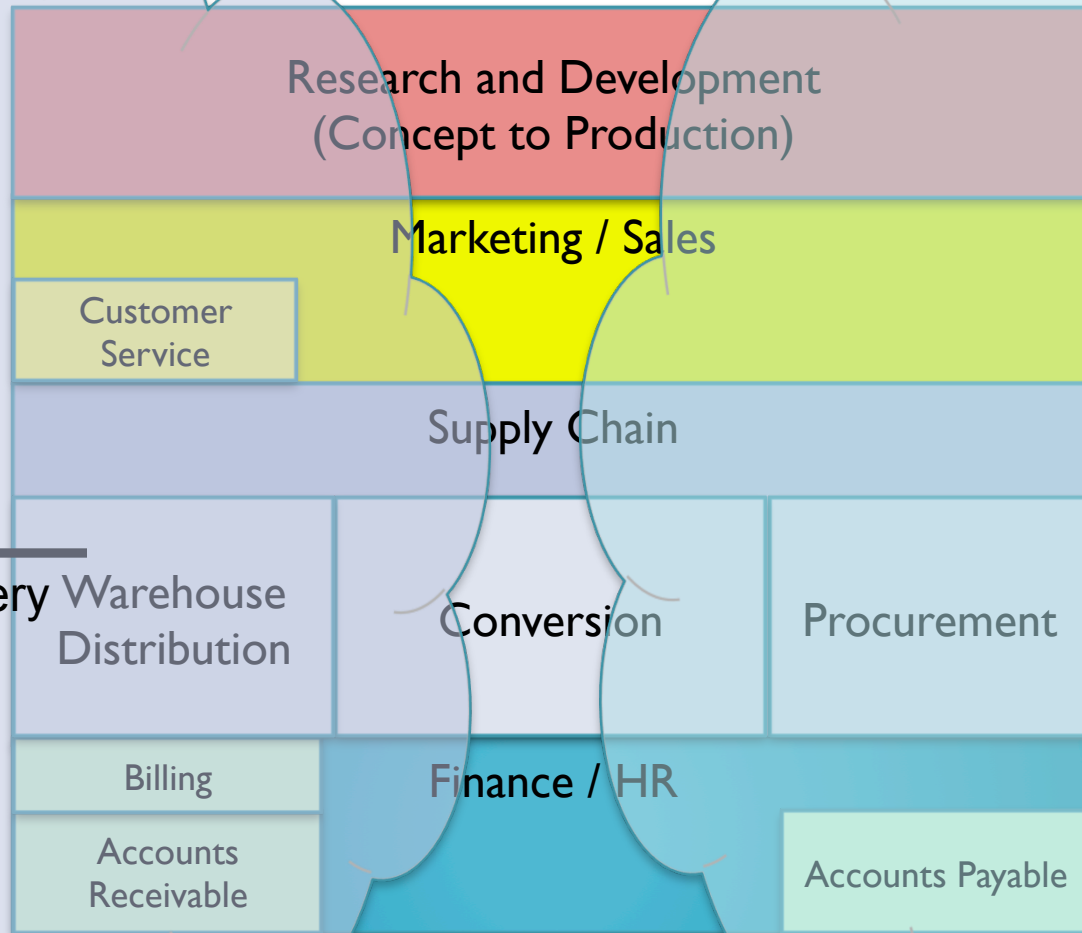- Fulfillment = delivery

- Part of the Sales or Order to Cash Process

Typical Organization / Functions

Business Process Vs. Function

Function

'An operation / group who perform related tasks routinely to achieve a part of an organization's mission ..'
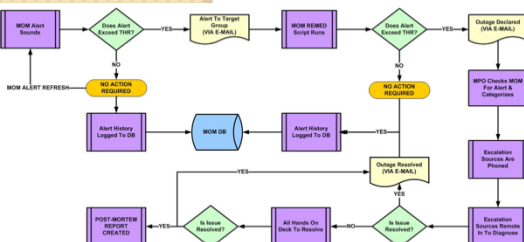
Business Dictionary

Process

'A series of logically related activities / tasks performed together to produce a defined set of results.'

Business Dictionary

'Actions an enterprise takes to achieve value creation '

ISACA

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What is eFulfillment?

- Fulfillment = delivery

- Types of fulfillment
  - Shop at a store
  - Home-delivery
  - Order online and pick up at store

- But eFulfillment is not just the delivery of goods or services online

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eFulfillment

- Set of distribution strategies
  - Deliver faster
  - Incur lowest possible cost

- Two core principles
  - Improve the use of information
  - Leverage existing resources

Why eFulfillment?

- Living.com
  - Online furniture retailer purchased a large furniture store
  - Declared bankruptcy a year later
  - Failure attributed to inability to deliver properly
  - Reason: the furniture store was not organized to meet the online operations

- Furniture.com
  - Launched in January 1999
  - Sales of $22 million in 2000
  - Folded due to poor logistics
  - Single central warehouse, led to inefficient delivery and increased transportation costs
  - Inability to manage regional distributors, especially repairs and returns

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Why eFulfillment? (contd.)

- What differentiates Dell from the competition?
  - ◦ Virtual integration
  - ◦ The boundaries between suppliers, manufacturers and end users are blurred
  - ◦ Holds eight days of inventory
  - ◦ Produces to order
  - ◦ No inventory of finished goods

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Why eFulfillment? (contd.)

- Peapod
  - First online grocer
  - Taken over by Royal Ahold, in the face of mounting losses

- Other failed online grocery stores
  - Shoplink.com, Streamline.com, WebHouse Club
  - Reason: High delivery costs

Value-added services

- Real-time inventory visibility & product availability

- Real-time package-tracking capability

- Real-time online payment approval

- Easily accessible customer service

- Multiple delivery options

- Real-time visibility of order status

- Single consolidated shipments

Core principles

- Improve the use of information
  - Logistics postponement
  - Dematerialization

- Leverage existing resources
  - Clicks and mortar (ship-to-store)
  - Leveraged shipments

Learning Objectives

- Understand the core eFulfillment principles

- Learn about various e-distribution strategies

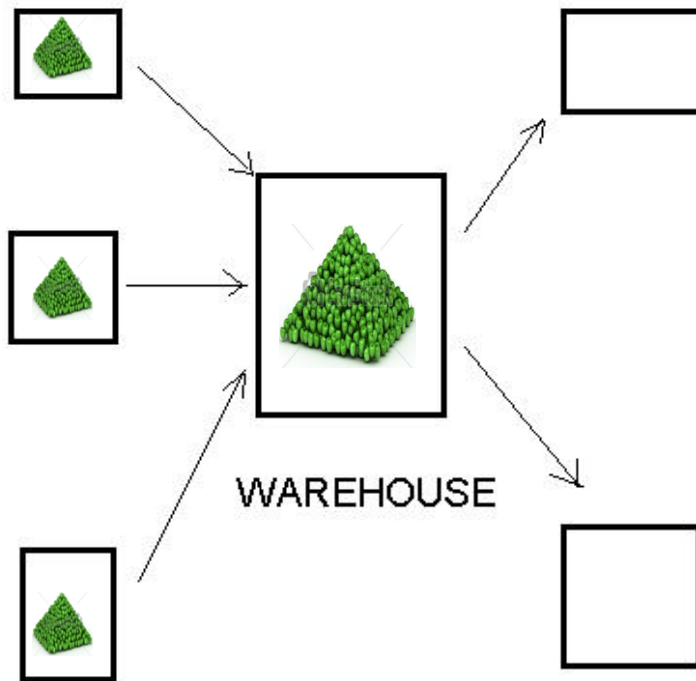- Designing Distribution Networks

E-DISTRIBUTION Strategies

- Logistics Postponement
  - Merge in Transit
  - Rolling Warehouse

- Dematerialization

- Resource Exchange
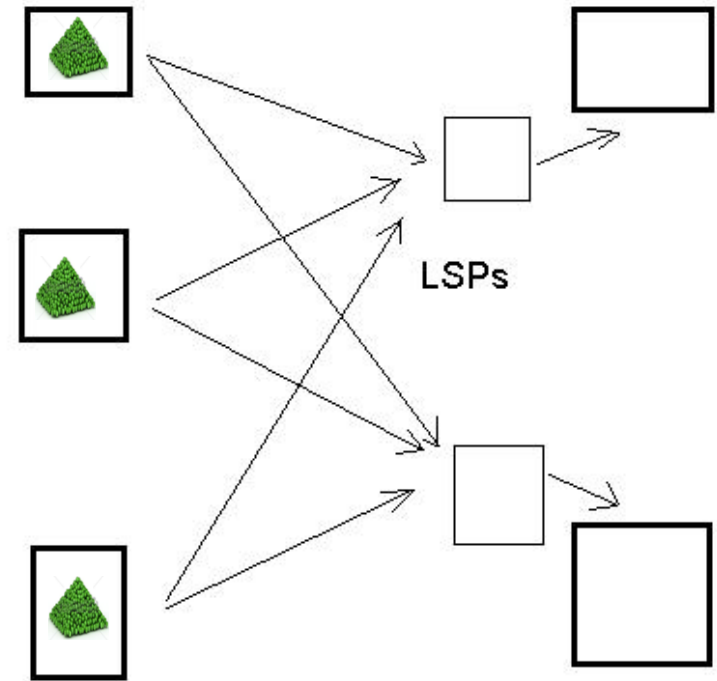
- Leveraged Shipments

- Click and Mortar

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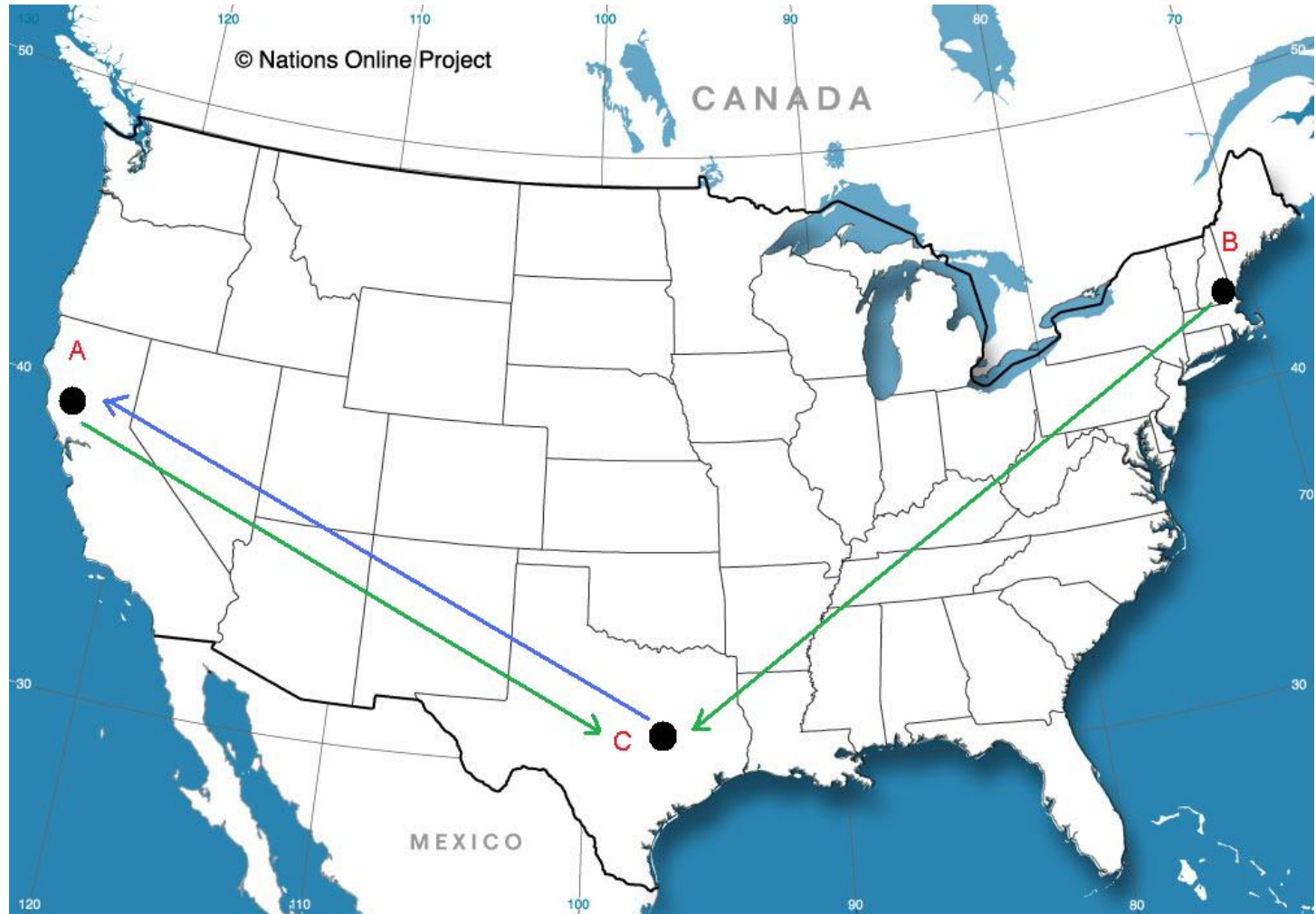# Merge in transit

Merge in Transit

Merge in Transit (contd.)

Merge in Transit (contd.)

Merge in transit

- Examples:
  - Dell (makes computer) and merges monitor, keyboards, etc. from suppliers by UPS at defined sites
  - Starbucks
    - New store builds delivered in 5 bundles
    - Bundles merged from various suppliers
    - Reduces total build time

- Success:
  - Data and models to plan, execute the coordination
  - Choreography – impeccable timing – Do what you say
  - Manage the complexity

Rolling warehouse

Characteristics

◦ Products in a shipment not pre-assigned to any destination

◦ Such information is passed to the fulfilling agent or determined at time of delivery

◦ Better meet current demand

Examples

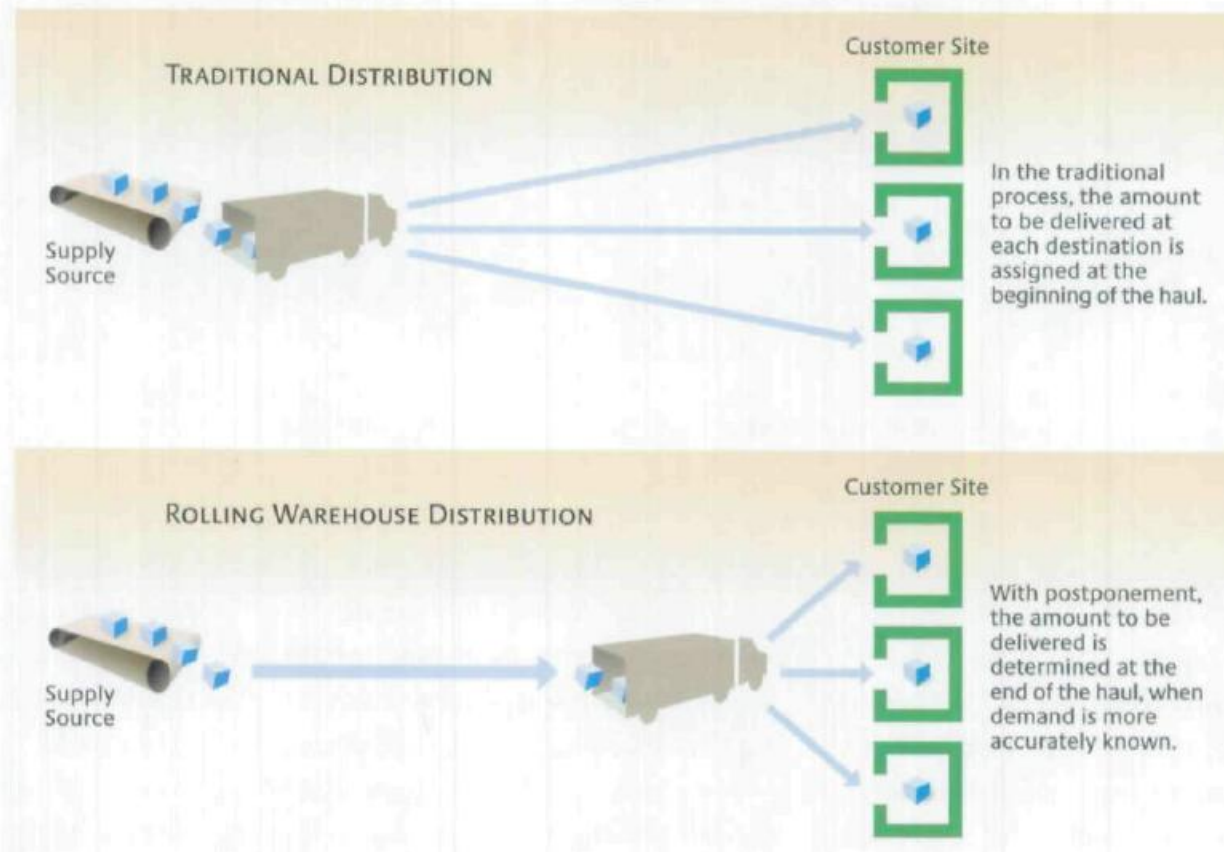◦ Home Oil Delivery

◦ Home Milk Delivery

◦ Ag Bulk Distribution

Rolling warehouse

Rolling Warehouse

Decisions about the amount to be delivered await the best information.

TRADITIONAL DISTRIBUTION

Supply Source

Customer Site

In the traditional process, the amount to be delivered at each destination is assigned at the beginning of the haul.

ROLLING WAREHOUSE DISTRIBUTION

Supply Source

Customer Site

With postponement, the amount to be delivered is determined at the end of the haul, when demand is more accurately known.

Dematerialization

- Material (Physical) flow costs
  - Handling
  - Loading
  - Unloading
  - Warehousing
  - Shipping
  - Returns
  - Spoilage
 - Damage

© Can Stock Photo - csp9843973

Dematerialization (contd.)
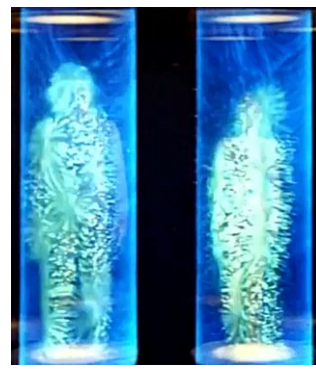
- Wherever possible, replace physical material flow with information flow
- Shift reliance on products to services by leveraging information

- Example: Online greeting cards
  ◦ Most cards are free of cost
  ◦ Instant delivery
  ◦ No holding costs, inventory buildup
  ◦ Ability to offer value-added services

Dematerialization Examples
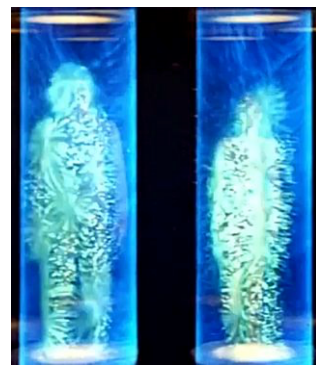
- **XILINX®**
  - Semiconductor manufacturer makes field-programmable circuits
  - Circuits can be configured based on client needs

- **RECRUIT** Co. of Japan
  - Used to publish seven-volume directory of job openings in Japan
  - Today, no such paper directories are published
  - Cost savings, ease of use, …

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Dematerialization Examples
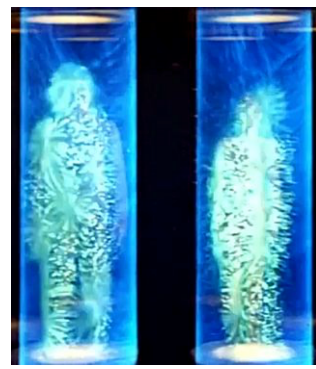
- Car Sharing **zipcar** wheels when you want them

  ◦ Shift reliance on products (auto) to a service by leveraging information

  ◦ Using technology (including RFID) to leverage expensive assets

Resource Exchange

Resource Exchange (contd.)

Information Flow

© Nations Online Project

CANADA

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Resource Exchange (contd.)

- How it works:
  - Only information flows between manufacturers A & B
  - A & B act as virtual sites for each other

- Used by:
  - Synchronet Marine **SYNCHRON T** Innovative Container Solutions
  - Chemical Commodity Companies: Swaps
    - Time, location, …
    - Lower total cost for participating companies
    - Exchangeable products

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Leveraged shipments

- When is the cost of delivery justified?
    ◦ If the order value is sufficiently large
    ◦ If there is a high concentration of orders in one area

- Delivery value density (DVD)

- DVD = Avg. total dollar volume of shipment / Avg. travel distance per trip

Improving DVD

- The **Streamline** method
  - Boston-based online grocer
  - Delivery to specified neighborhoods on specified days of the week
  - By accumulating deliveries, increased the total dollar volume of the shipment
 - By focusing on specific neighborhoods, reduced the trip distance

Improving DVD (contd.)

- The ECLine model
  - Korean third-party LSP
  - Recruited highly localized home-delivery service providers or dealers
  - Dealers deliver multiple times daily (lower trip distance, because of localization)
  - Excellent service benchmarks
  - ECLine picks up items and drops off in bulk (lower DVD)

Improving DVD:

◦ EU warehouse in NL

◦ FR and ES customers concentrated in south

◦ Created 'MilkRun' Schedule: Limited Days of Delivery each week

◦ Surcharges for delivery outside schedule

◦ <u>Result</u>: lower costs with fewer but fuller trucks
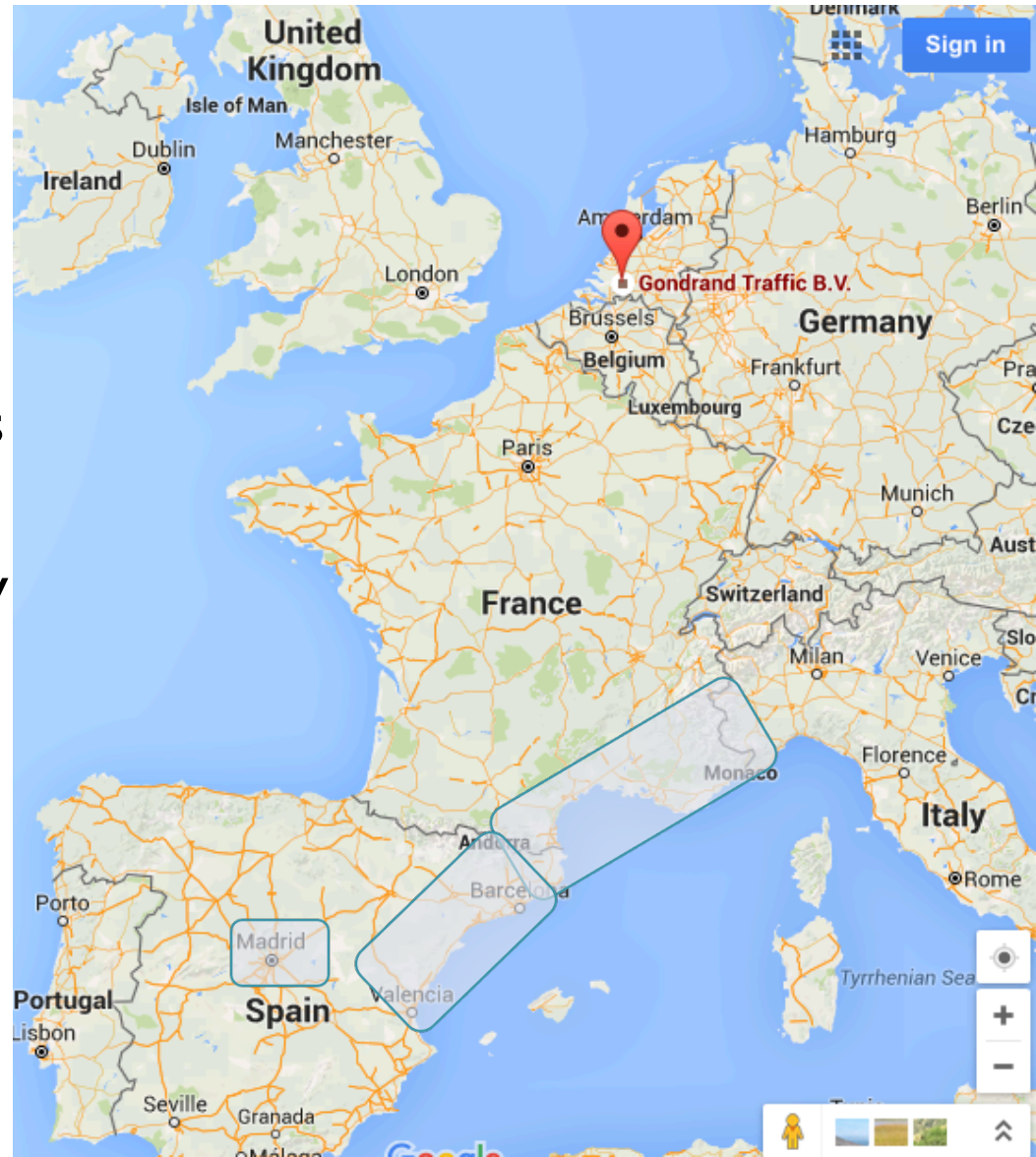
Clicks-and-Mortar Model

- Get the customer to cover the last mile

- Customer orders online, and picks up the product at the nearest store

- Negligible incremental cost for the shipment

- Used by many companies, including: **Walmart**
  CVS *Ford* …

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The right strategy

Using the Right Strategy

Companies start by assessing products and environments.

Strategy	Suitable Products	Suitable Environment
Logistics postponement	High-value, bulky items with uncertain demand	Information-based logistics-service provider and timely order information are available.
Dematerialization	Information-content goods	Information infrastructure has sufficient capacity.
Resource exchange	Low-value, high-shipping-cost items	Distributed and substitutable stocks are available for pooling.
Leveraged shipments	Nonbulky items with stable demand	High delivery-value density (DVD) in an existing delivery network is available.
Clicks-and-mortar	Easy-to-carry items with higher value	High DVD to conveniently located physical outlets is available.

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Learning Objectives

- Understand the core eFulfillment principles

- Learn about various e-distribution strategies

- Designing Distribution Networks

Factors Influencing Distribution Network Design

- Distribution network performance evaluated along two dimensions at the highest level:
  - Customer needs are met
  - Total Cost of meeting customer needs

- Tradeoffs between these two dimensions

Factors Influencing Distribution Network Design

- <u>Customer Service</u> Elements influenced by network structure:
  - Response time
  - Product variety
  - Product availability
  - Customer experience (options, complexity, …)
  - Order visibility
  - Returnability
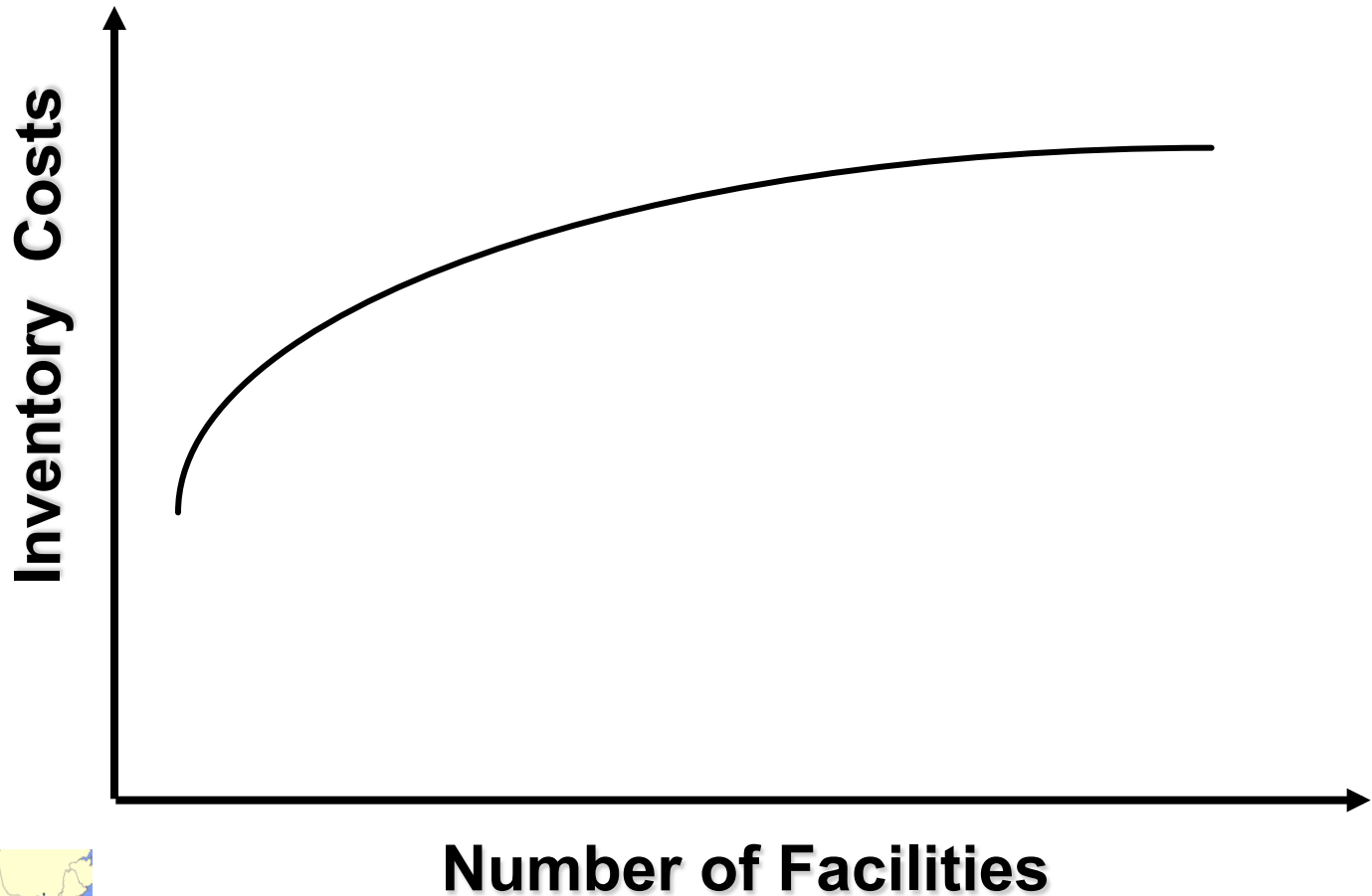
- <u>Supply Chain Costs</u> affected by network structure:
  - Inventories
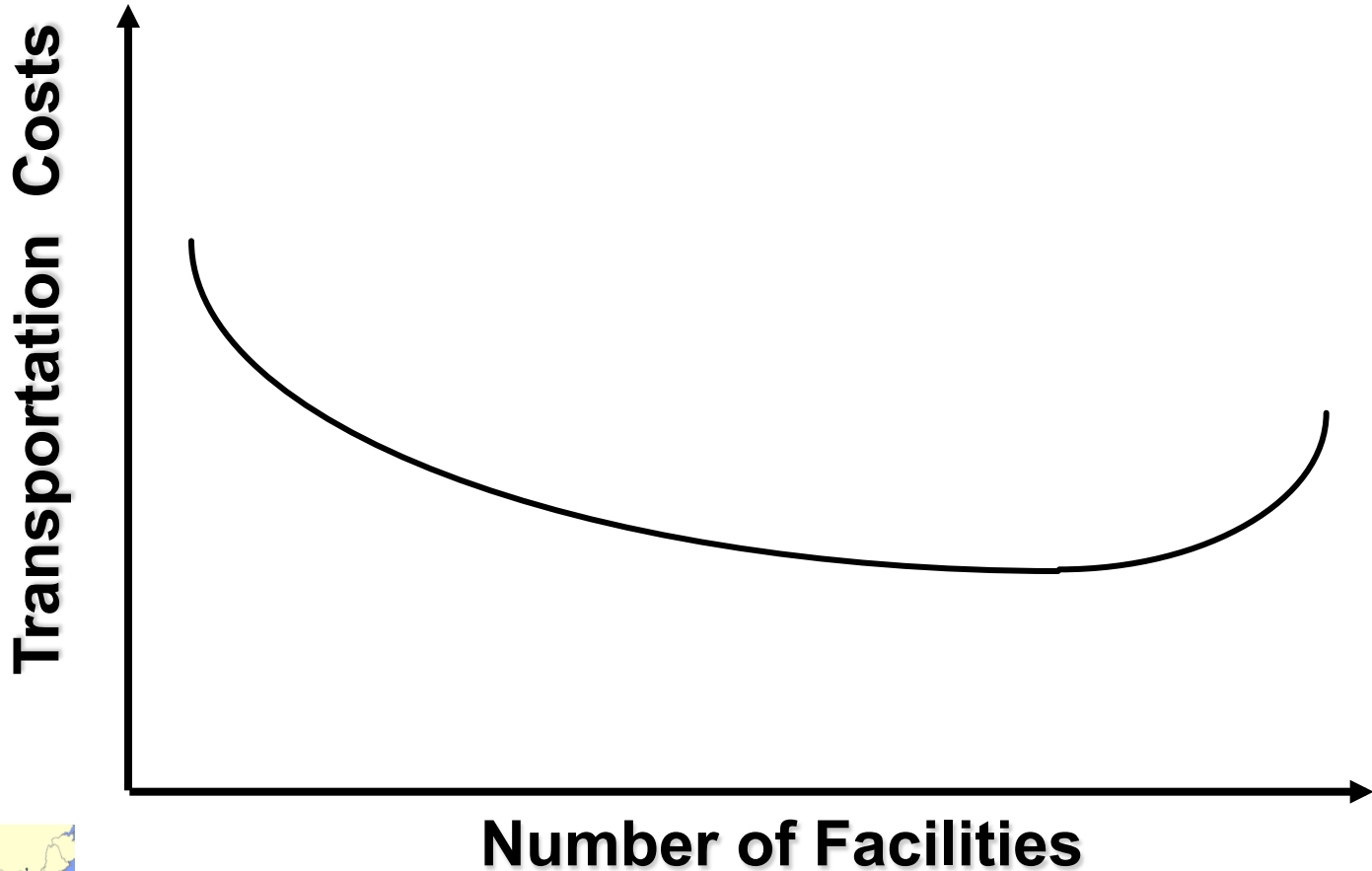 - Transportation
 - Facilities and handling
  - Information

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Service and Number of Facilities
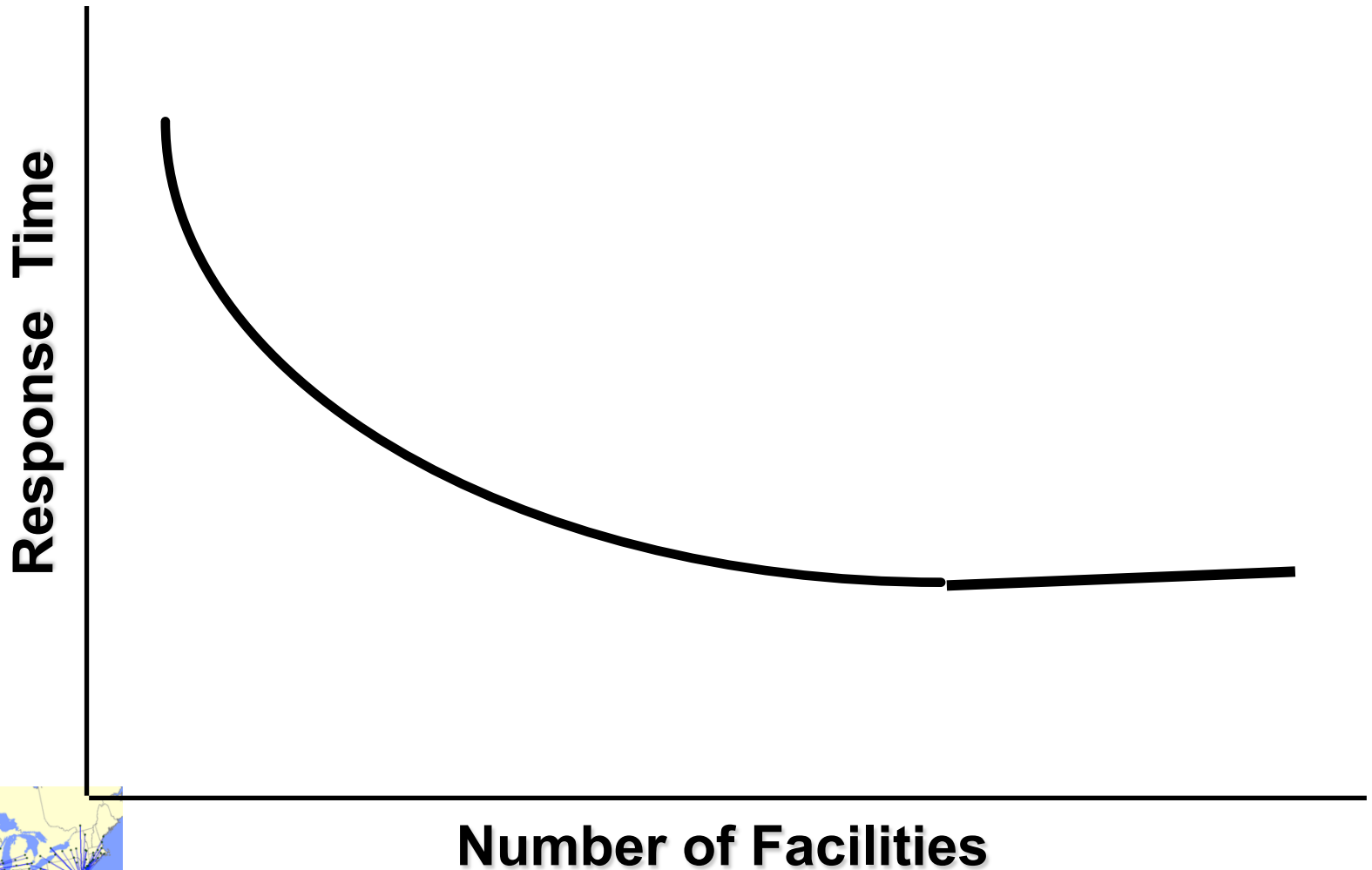
Inventory Costs and Number of Facilities

Inventory Costs (y-axis)

Number of Facilities (x-axis)

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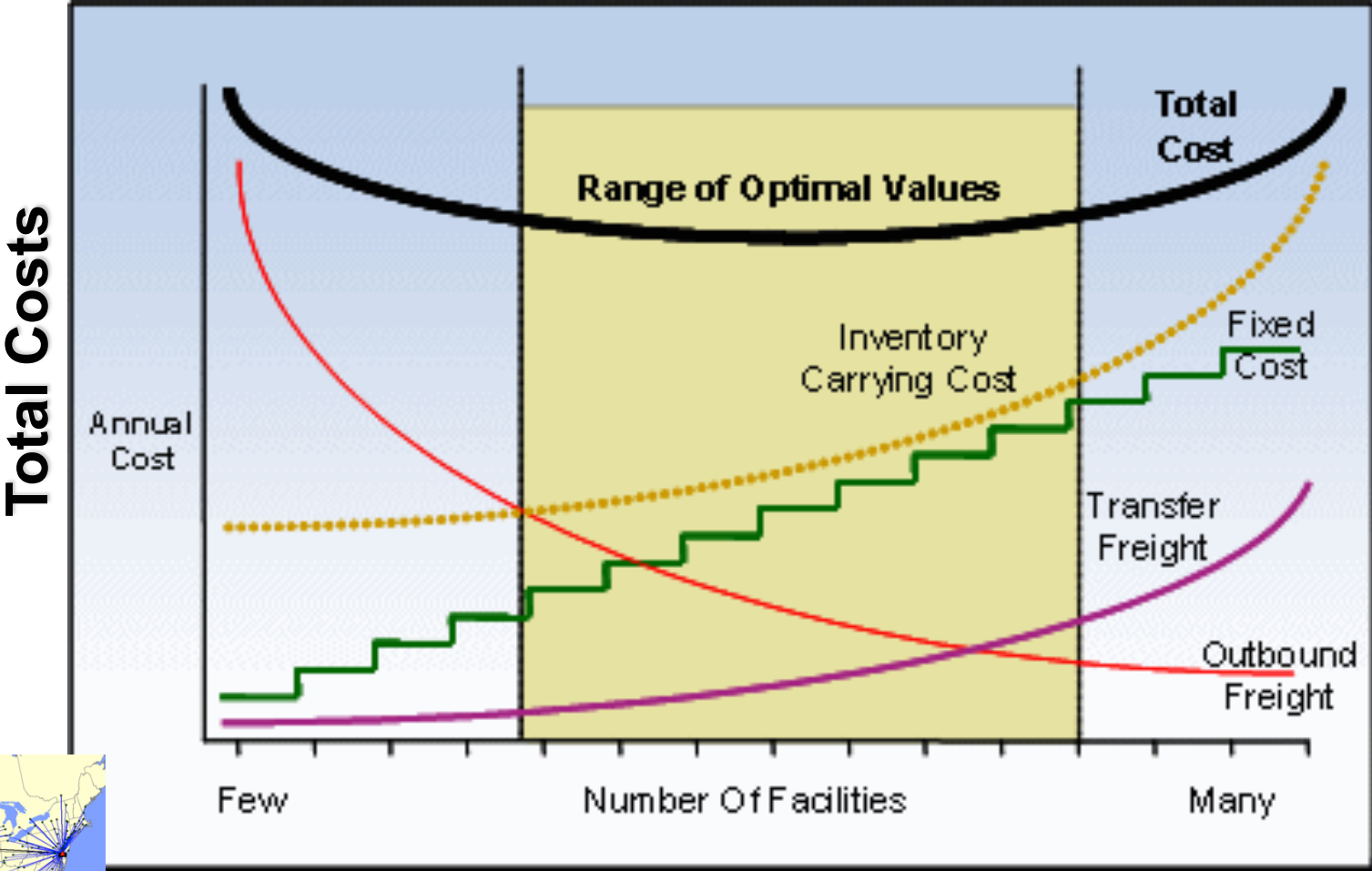TEMPLE UNIVERSITY

Transportation Costs and Number of Facilities
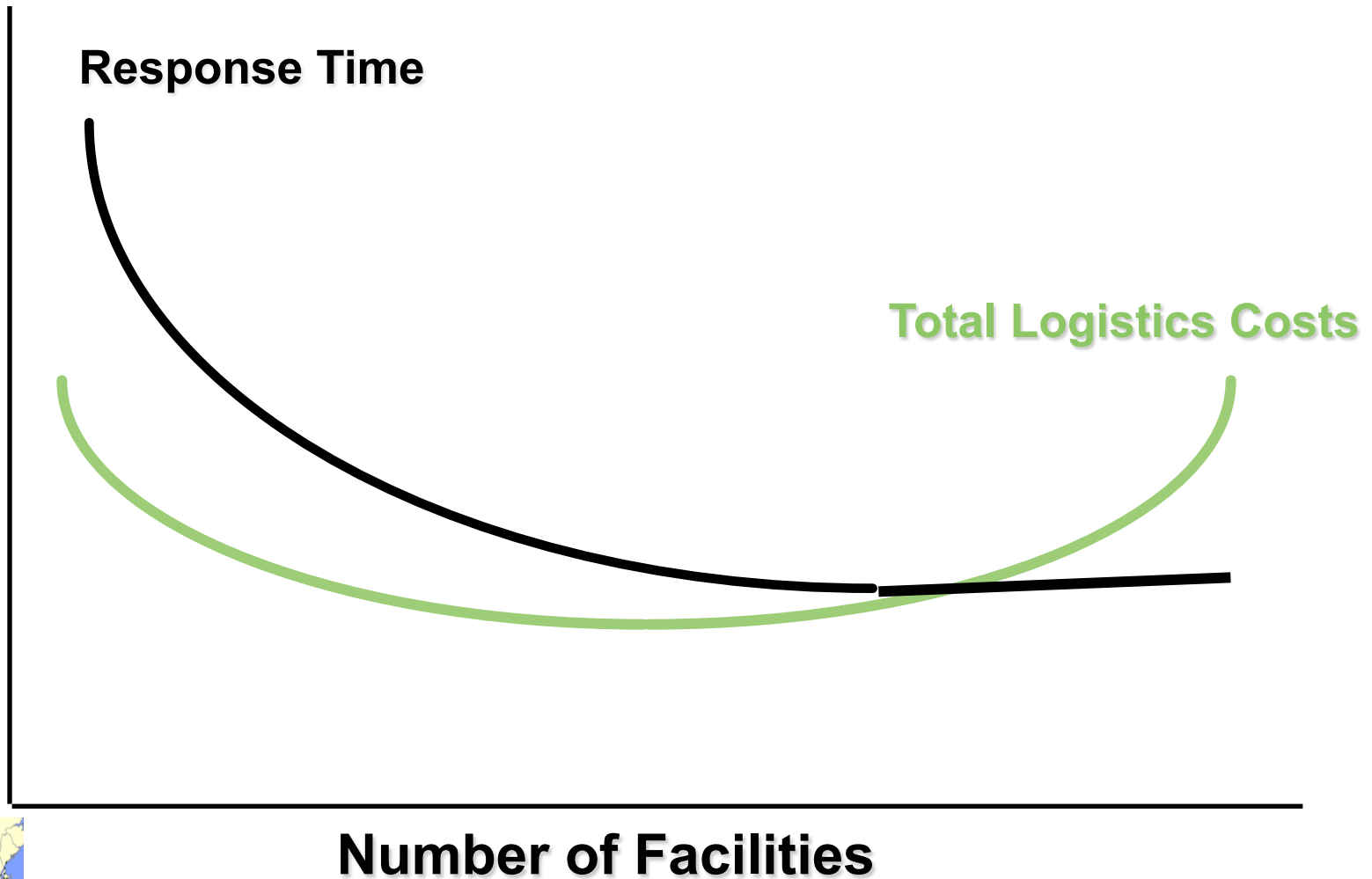
Facility Costs and Number of Facilities

Facility Costs vs. Number of Facilities
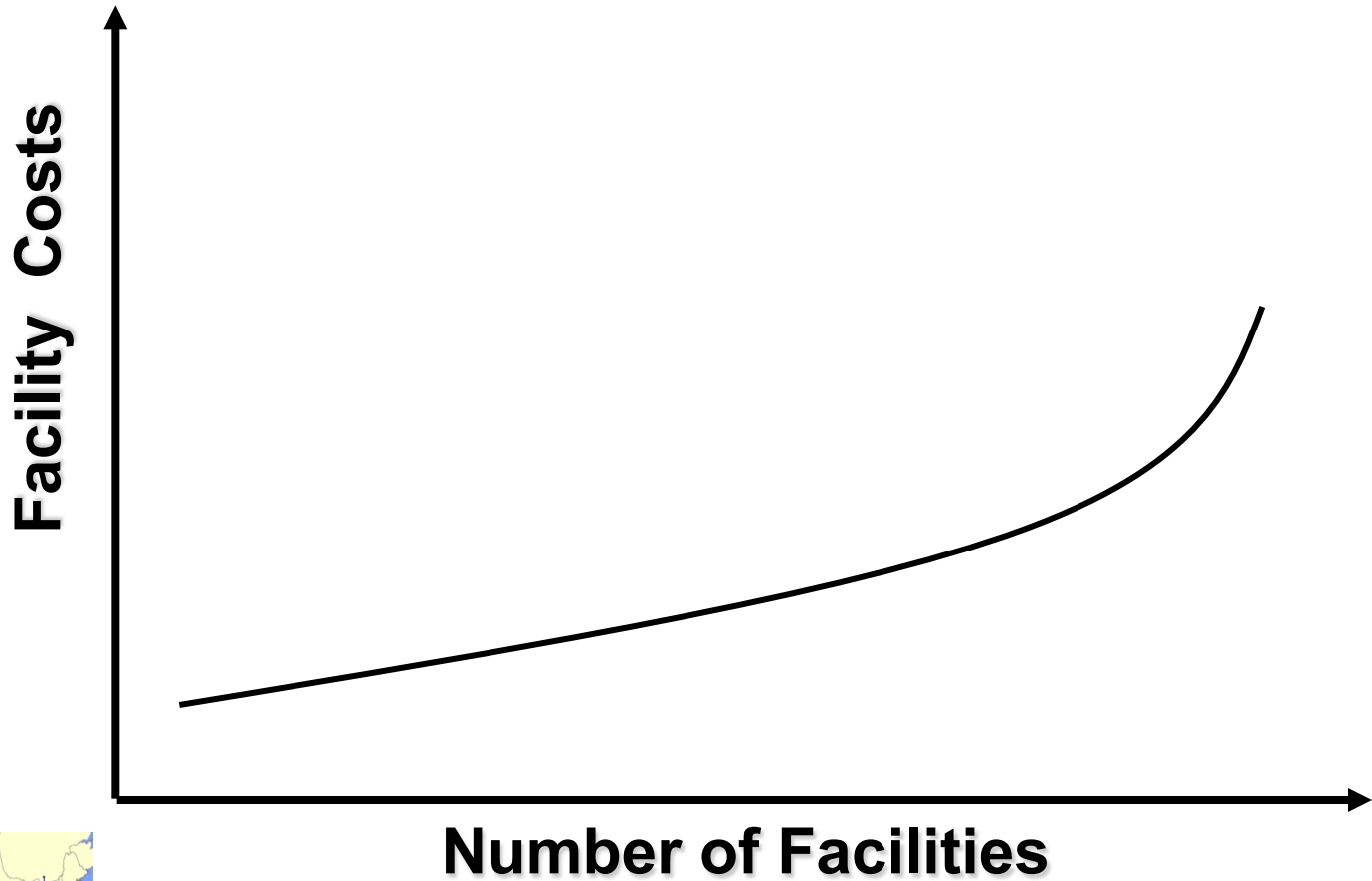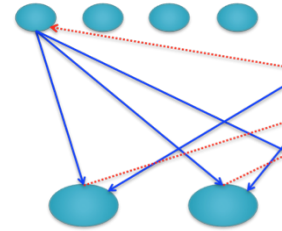
Total Costs Related to Number of Facilities

Logistics Costs and Response Time vs. Number of Facilities

Response Time

Total Logistics Costs
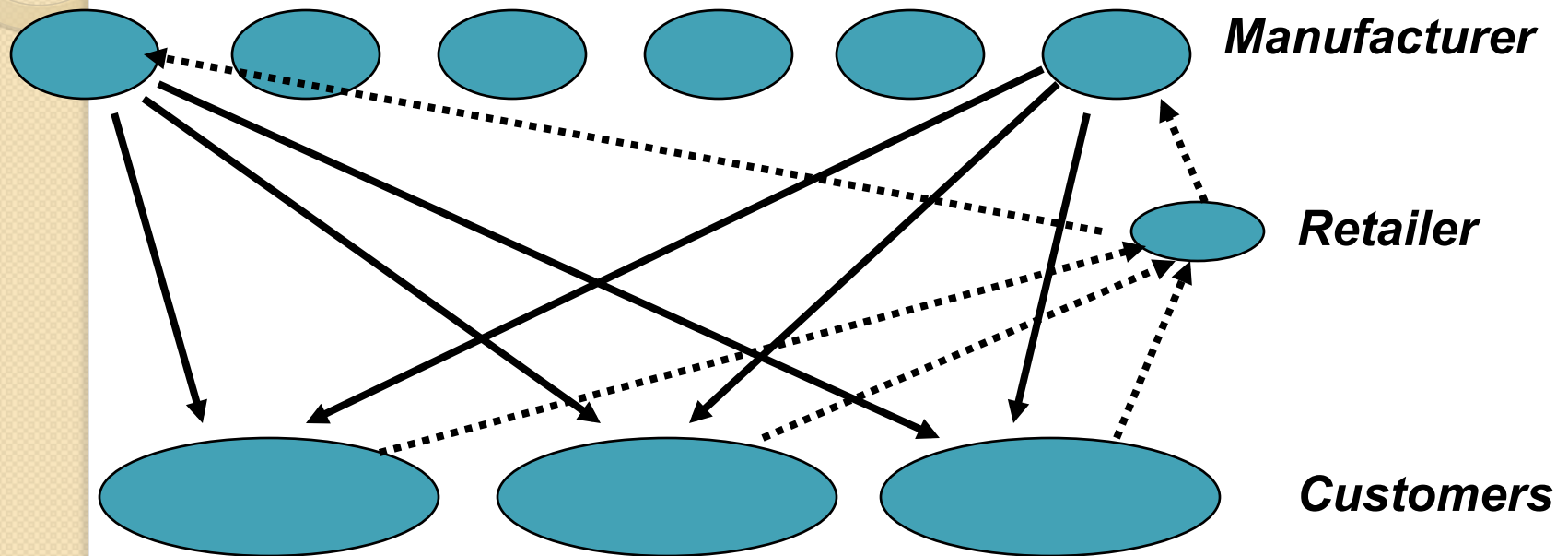
Number of Facilities

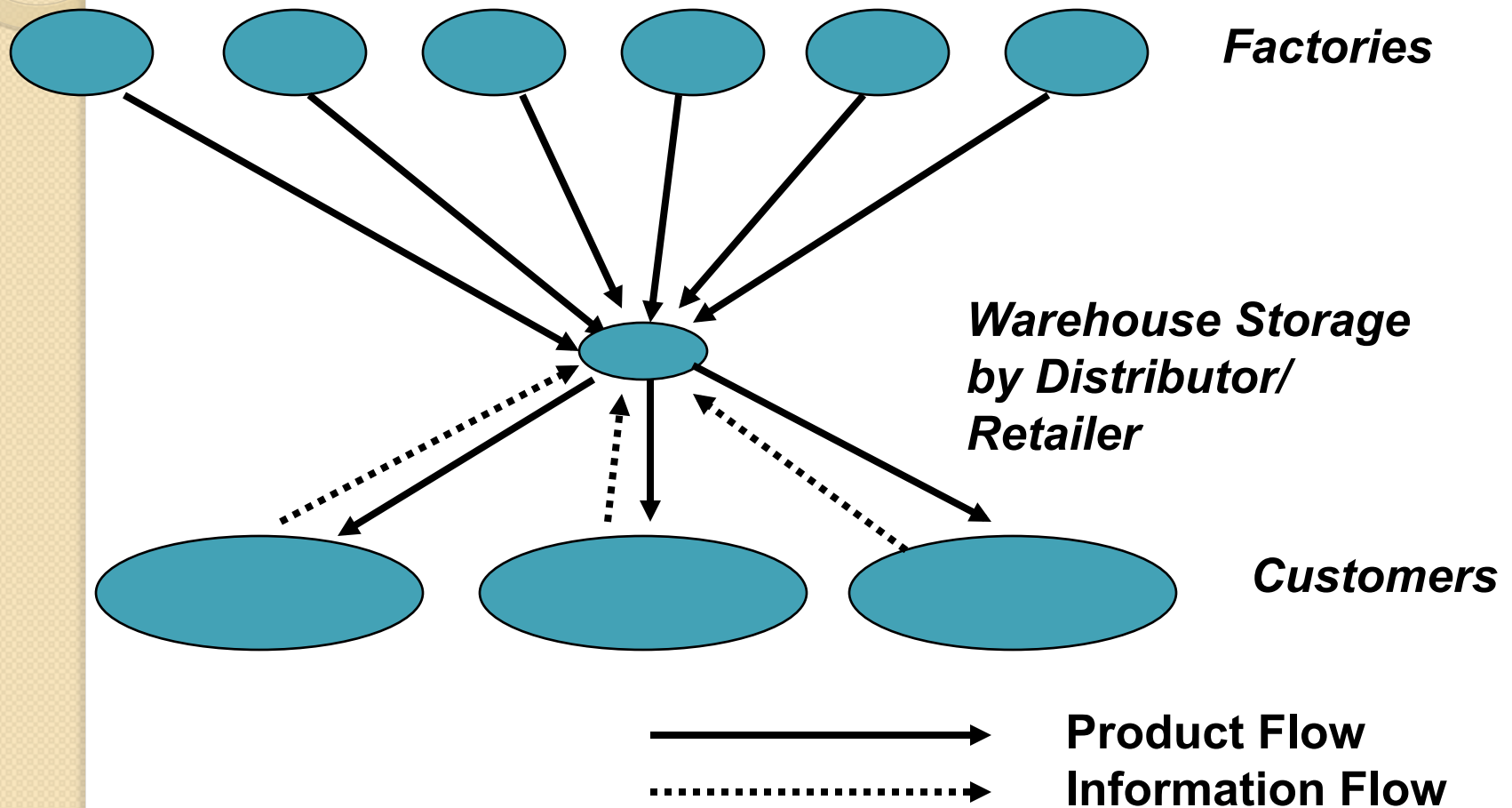# Design Options for a Distribution Network

- Manufacturer Storage with Direct Shipping

- Distributor Storage with Carrier Delivery

- Distributor Storage with Last Mile Delivery

- Retail Storage with Consumer Pickup

Manufacturer Storage with Direct Shipping

Manufacturer

Retailer

Customers

→ Product Flow

┄┄► Information Flow

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Distributor Storage with Carrier Delivery

Factories

Warehouse Storage by Distributor/ Retailer

Customers

→ **Product Flow**
⋯→ **Information Flow**

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Distributor Storage with Last Mile Delivery

Factories

Distributor/Retailer Warehouse

Customers

→ Product Flow

⋯⋯> Information Flow

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Retail Storage with Customer Pickup

Factories

Cross Dock DC

Retailer

Pickup Sites

Customers

Customer Flow
Product Flow
Information Flow

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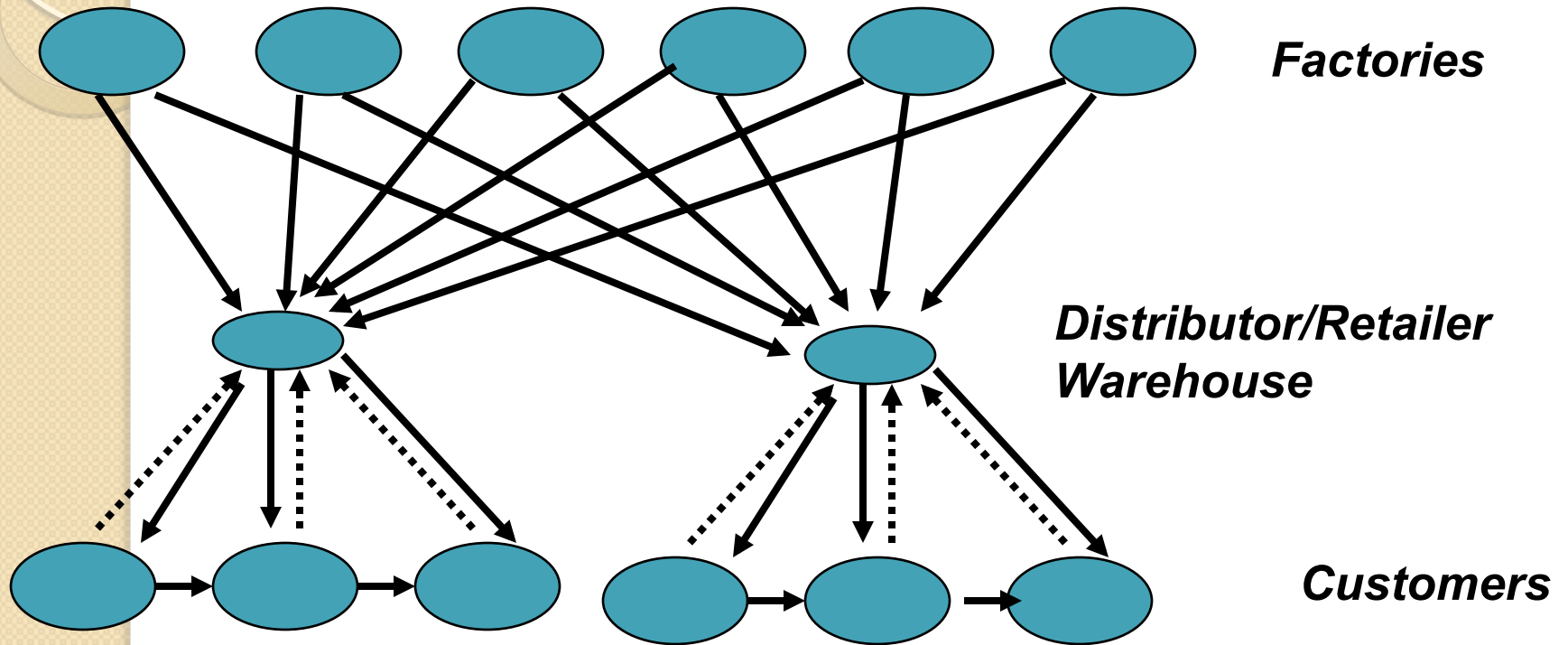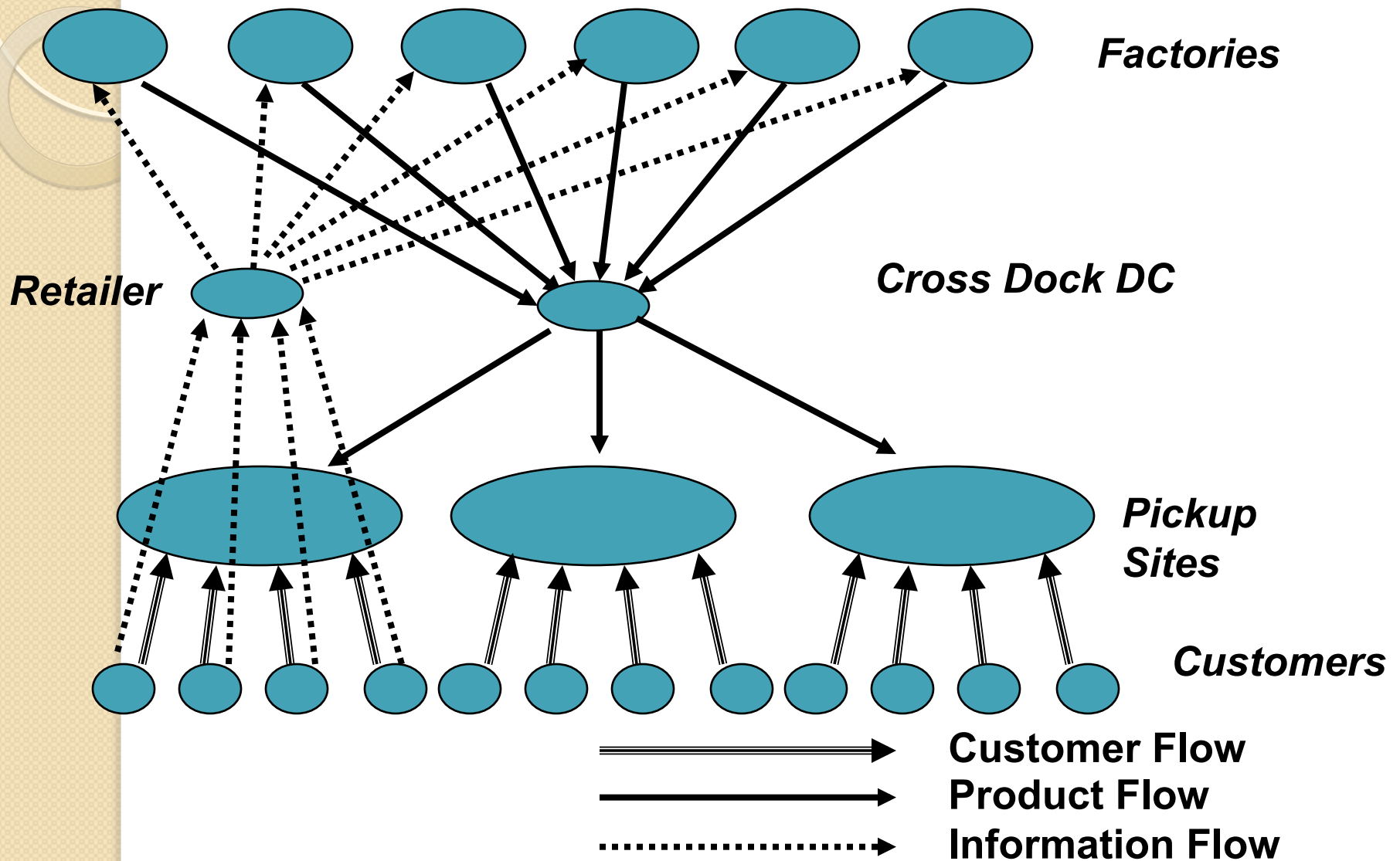
Optimal Distribution Network

Strategy -> Scenario	Retail Storage with Customer Pickup	Manufacture Storage with Direct Shipping	Distributor Storage with Carrier Delivery	Distributor Storage with Last Mile Delivery
High Demand	√			
Medium Demand			√	
Low Demand		√		
High Product Value		√		
Low customer effort				√

Questions!