

Logistics/Supply Chain Strategy and Planning

Prepared by

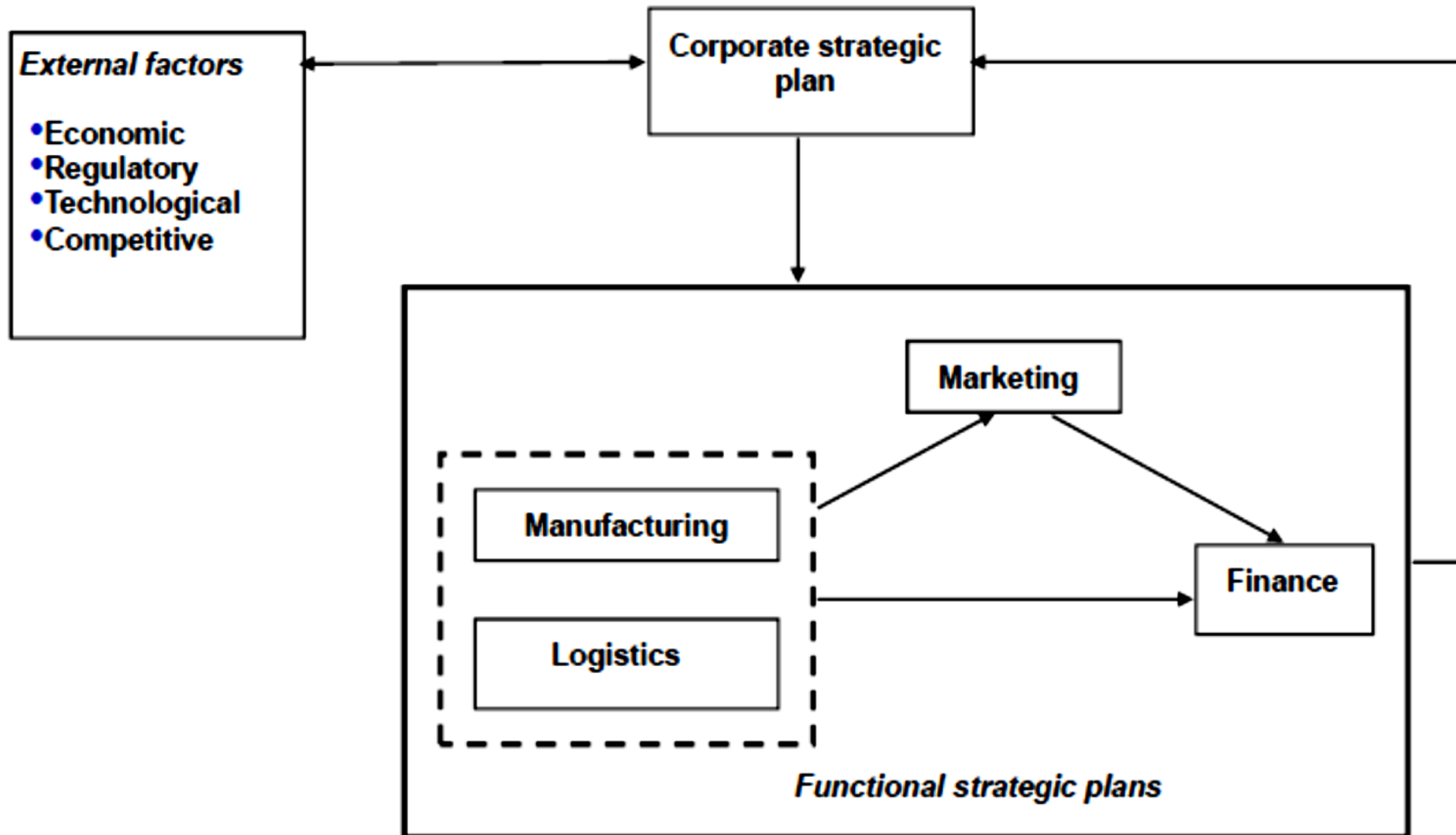
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Corporate Strategy

- **Strategy** is the process whereby plans are formulated for positioning the firm to meet its objectives.
- **Strategy formulation** begins with defining a corporate strategy
 - This involves:
 - a) **Assessing needs, strengths, and weaknesses of the 4 major components:**
 - customers
 - suppliers
 - competitors
 - the company itself
 - b) **"Visioning"** where counter-intuitive, unheard of, and unconventional strategies are considered.
- **Corporate strategies** are converted to more specific strategies for the various functional areas of the firm such as logistics .

Corporate to Functional Strategic Planning



Logistics' Objective

- Maximize return on logistics assets (*ROLA*)

The diagram illustrates the formula for Return on Logistics Assets (ROLA). The formula is presented as $ROLA = \frac{\text{Revenue} - \text{Costs}}{\text{Assets}}$. Three callout boxes provide context for the terms: 'Logistics' contribution to sales' points to 'Revenue', 'Costs of logistics operations' points to 'Costs', and 'Investment in logistics assets' points to 'Assets'.

$$ROLA = \frac{\text{Revenue} - \text{Costs}}{\text{Assets}}$$

Logistics' contribution to sales

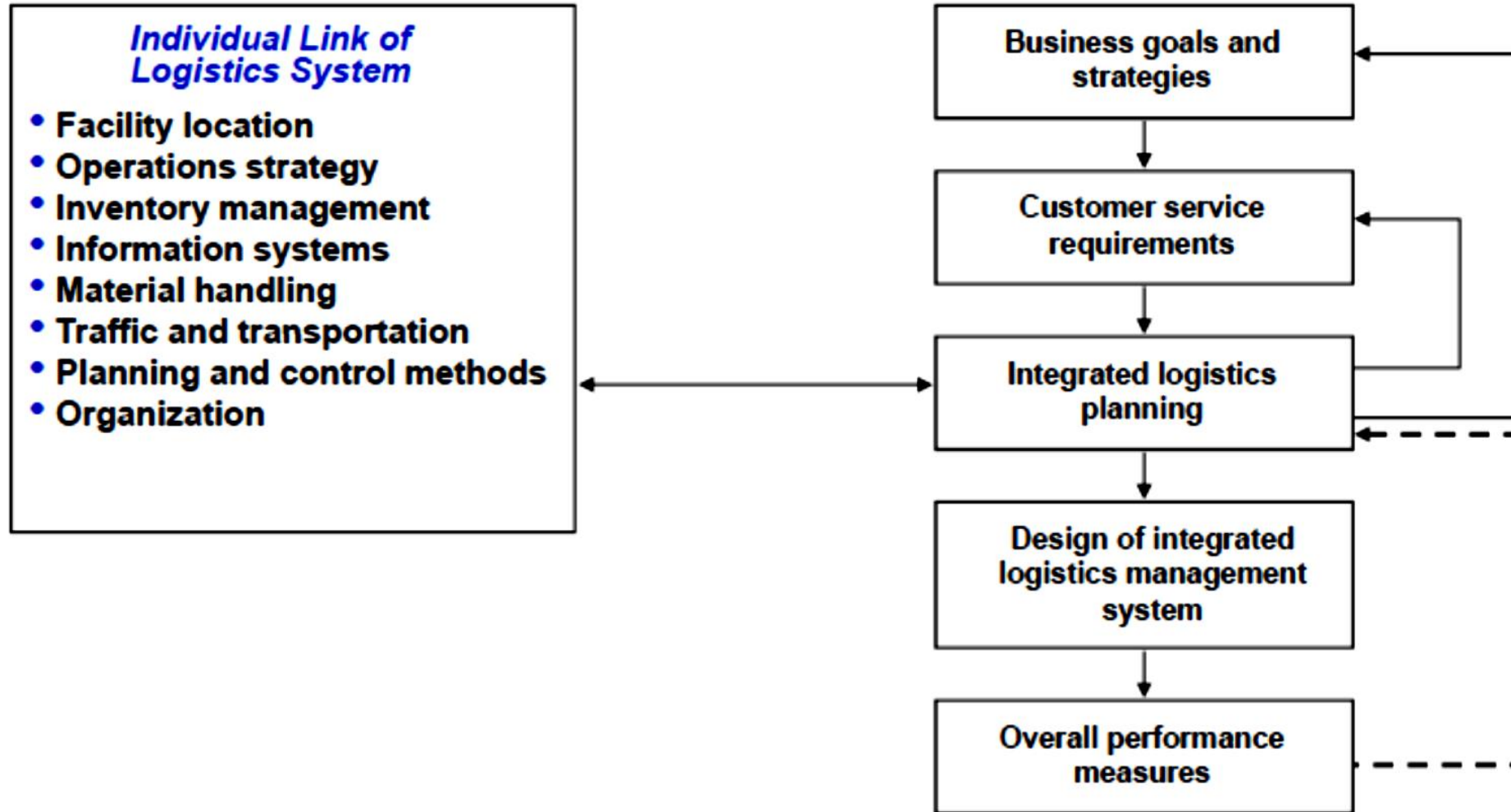
Costs of logistics operations

Investment in logistics assets

Objectives of logistics strategy

- **Minimize cost (cost reduction)**
- **Minimize investment (capital reduction)**
- **Maximize customer service (service improvement)**

Flow of Logistics Planning



Areas of Logistics Planning

- Customer service levels
- Facility location
- Inventory decisions
- Transportation decisions

Triangle of Logistics Decision Making

Inventory Strategy

- Inventory levels
- Deployment of Inventories
- Control methods

Transport Strategy

- Modes of transport
- Carrier routing/scheduling
- Shipment size/consolidation

Customer service goals

Location Strategy

- Numer, size, location of facilities
- Assignment of stocking points
- Assignment of demand to stocking points or sourcing points
- Private/public warehousing

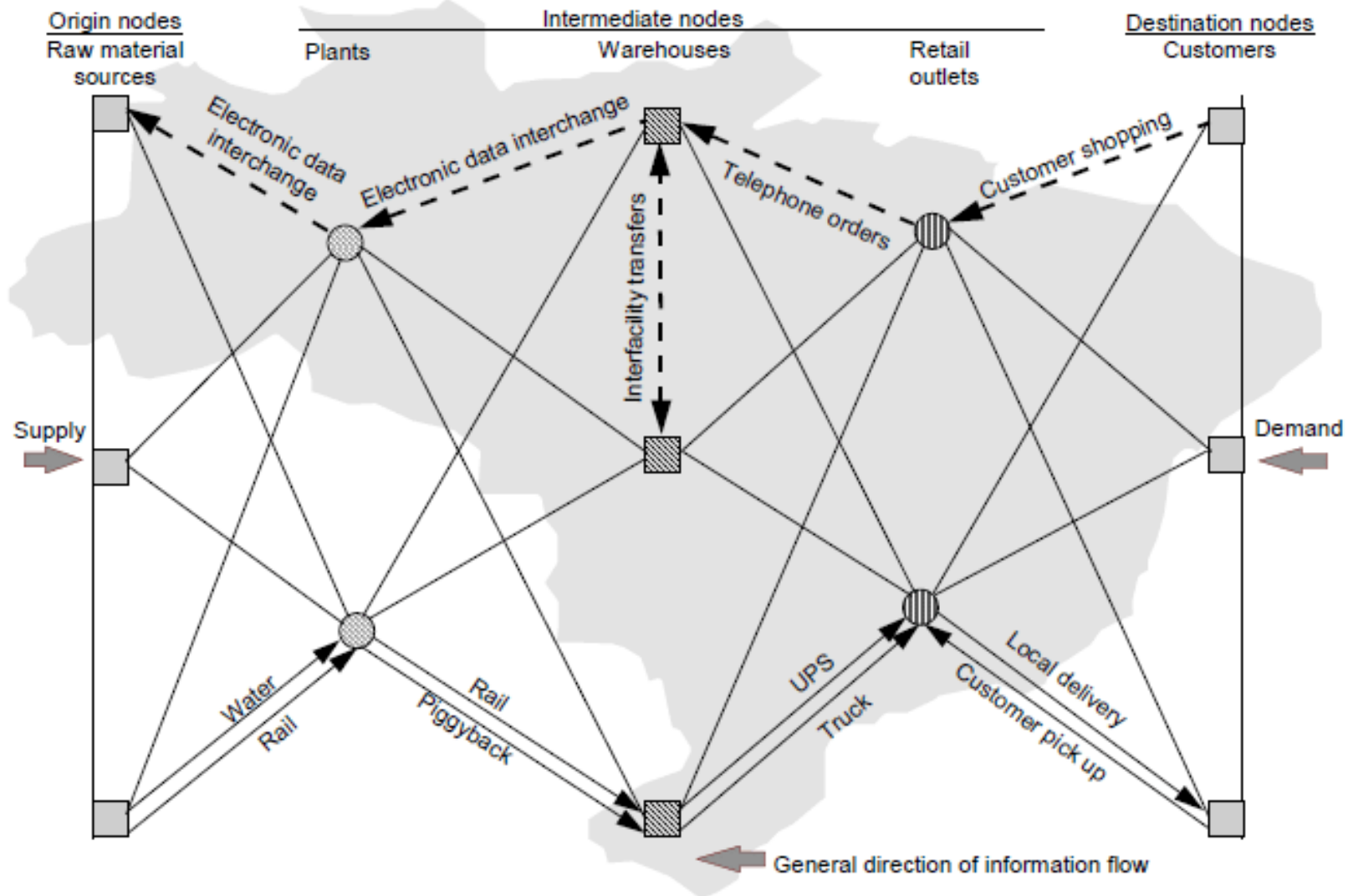
Logistics Planning: Levels of logistical planning

- **Strategic planning**: long term decision making, > 1 years
- **Tactical planning**: mid term decision making, < 1 years
- **Operational planning**: short term decision making, , everyday

Strategic, Tactical, and Operational Decision Making

<i>Decision area</i>	<i>Strategic</i>	<i>Tactical</i>	<i>Operational</i>
Transportation	Mode selection	Seasonal equipment leasing	Dispatching
Inventories	Location, Control policies	Safety stock levels	Order filling
Order processing	Order entry, transmittal, and processing system design		Processing orders, Filling back orders
Purchasing	Development of supplier-buyer relations	Contracting, Forward buying	Expediting
Warehousing	Handling equipment selection, Layout design	Space utilization	Order picking and restocking
Facility location	Number, size, and location of warehouses		

Network Diagram for a Logistics System



When to logistics planning?

- **No distribution network currently exists.**
- **There has been no re-evaluation in 5 years.**
- **When costs are changing rapidly, especially transport & inventory**
- **When markets have shifted**
- **When current distribution economics encourage shifts**
- **When there has been a major policy shift in logistics such as in price, customer service, or investment level**

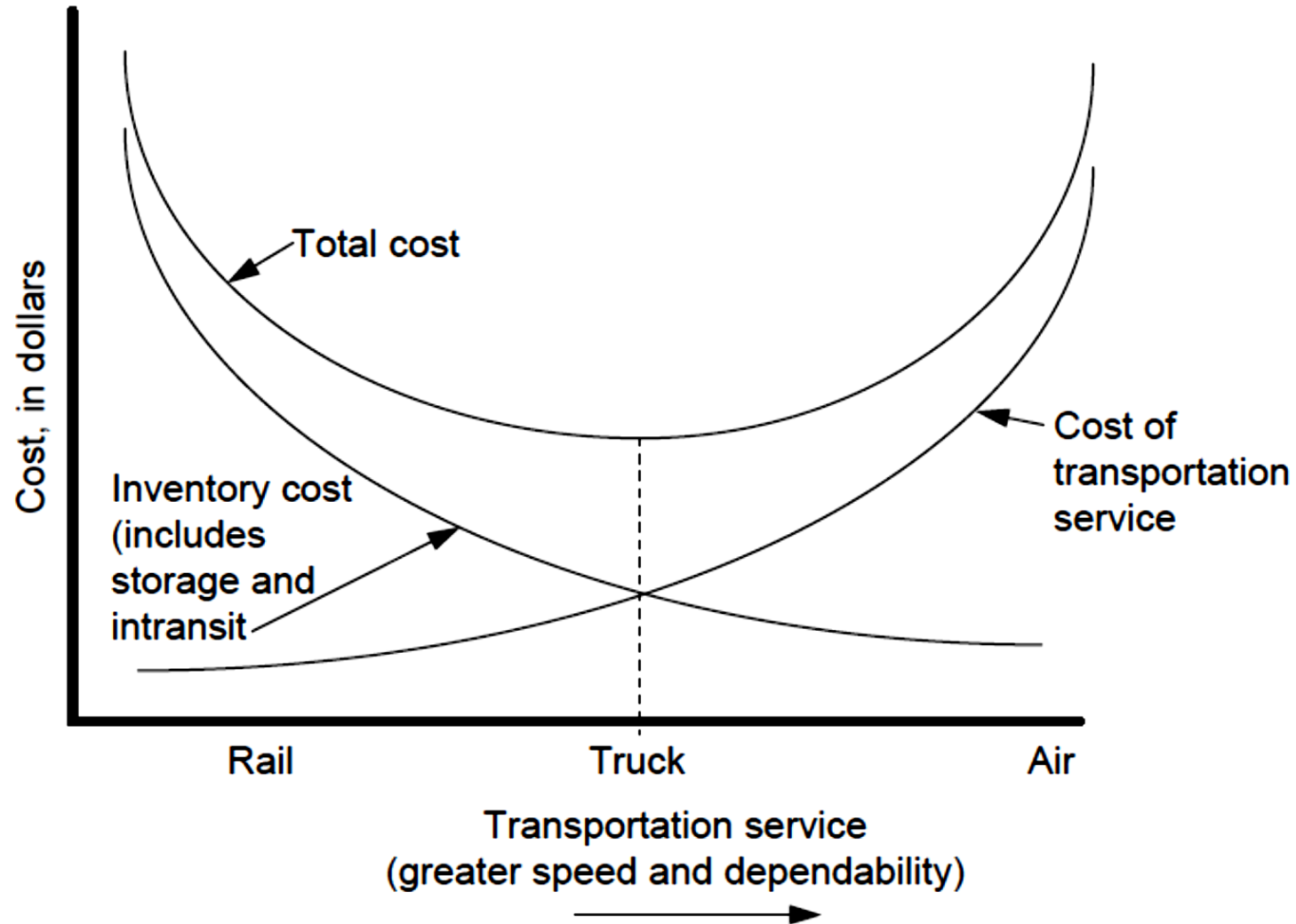
Key areas for logistics network appraisal

- **Demand**
- **Customer Service**
- **Product Characteristics**
- **Logistics Costs**
- **Pricing Policy**

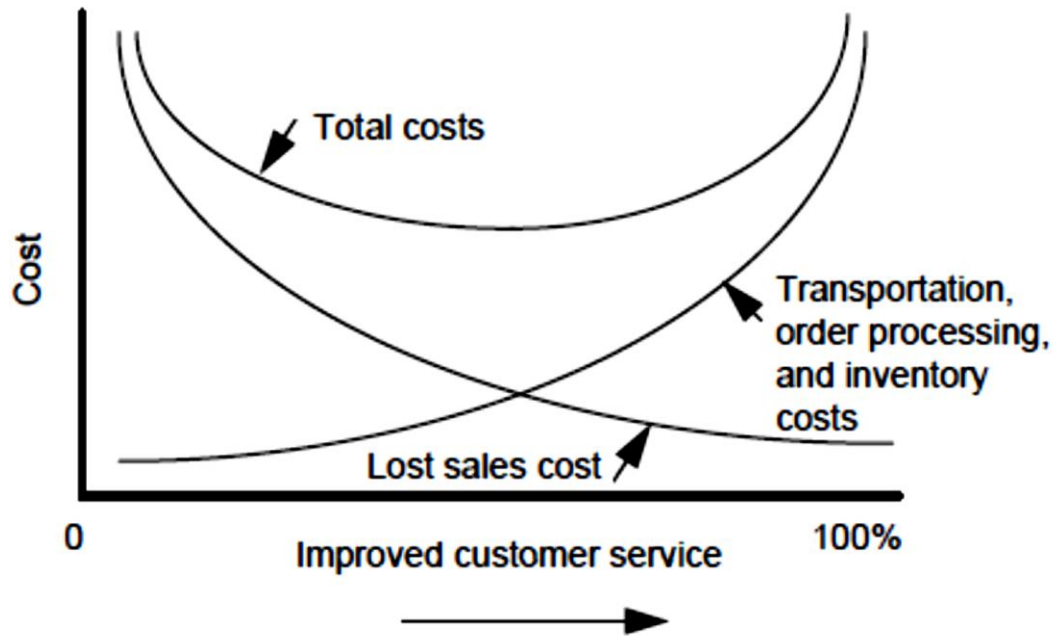
Six Principles for Logistics Planning

- **Total cost concept**
 - Tradeoff conflicting costs at optimum
- **Differentiated distribution**
 - Not all products should be provided the same level of customer service
- **Mixed strategy**
 - A pure strategy has higher costs than a mixed strategy
- **Postponement**
 - Delay formation of the final product as long as possible
- **Shipment consolidation**
 - Smaller shipment sizes have disproportionately higher transportation costs than larger ones
- **Product standardization**
 - Avoid product variety since it adds to inventory

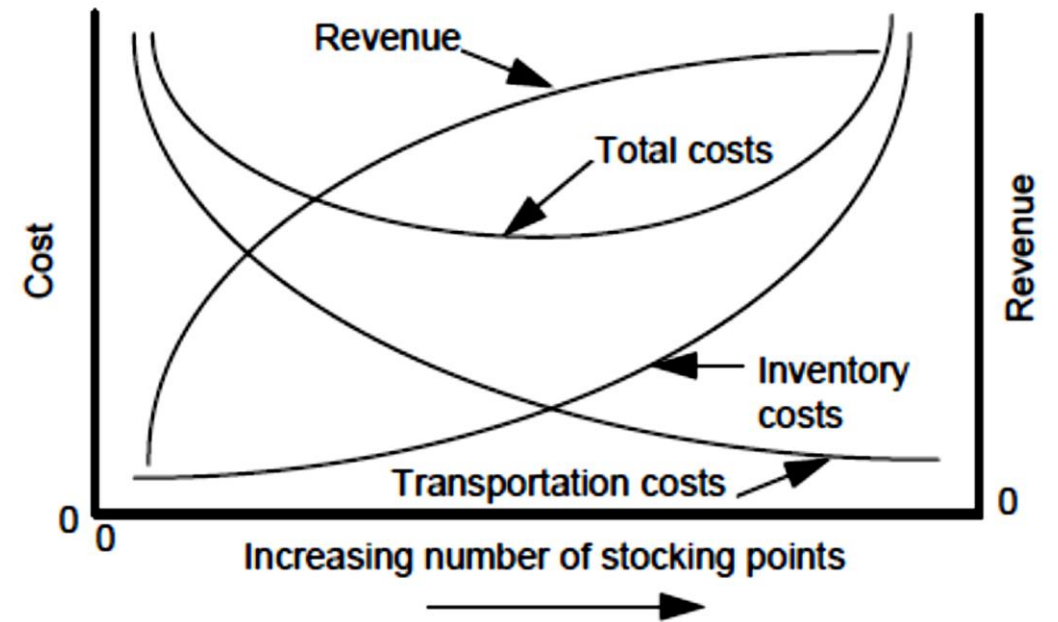
A Cost Conflict in Logistics



More Cost Conflicts

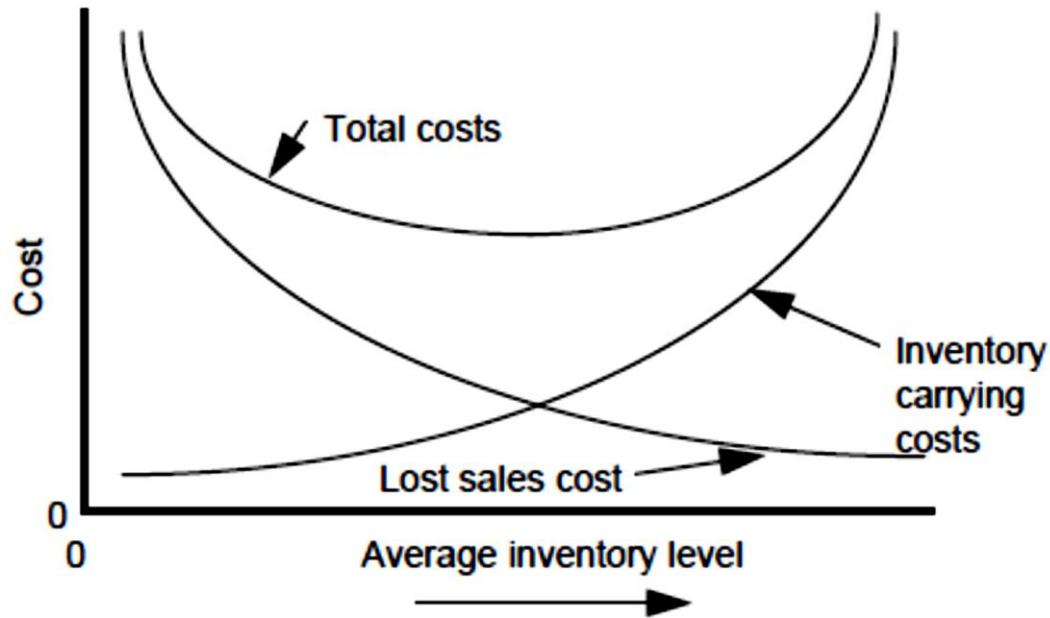


(a) Setting the customer service level

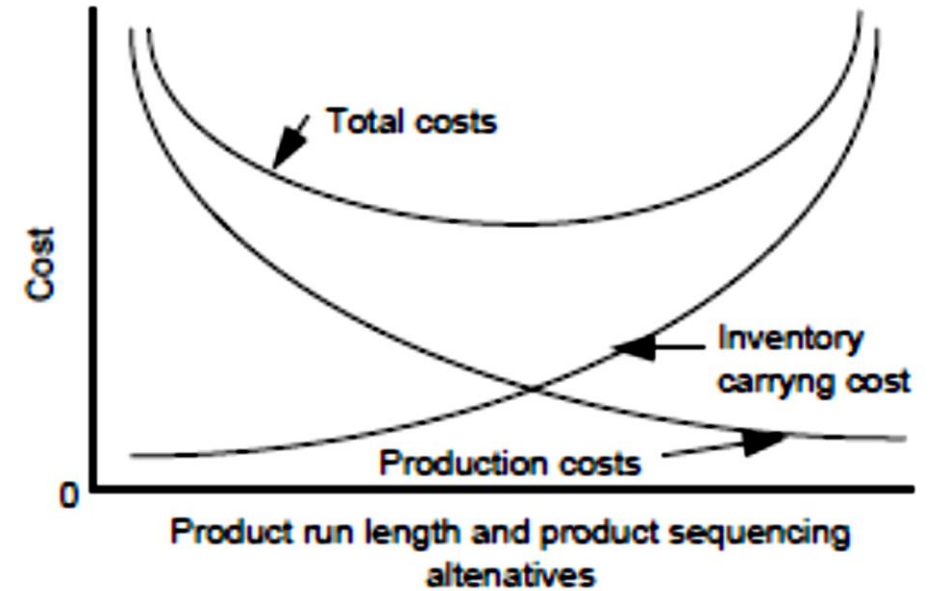


(b) Determining the number of warehouses in a logistics system

More Cost Conflicts

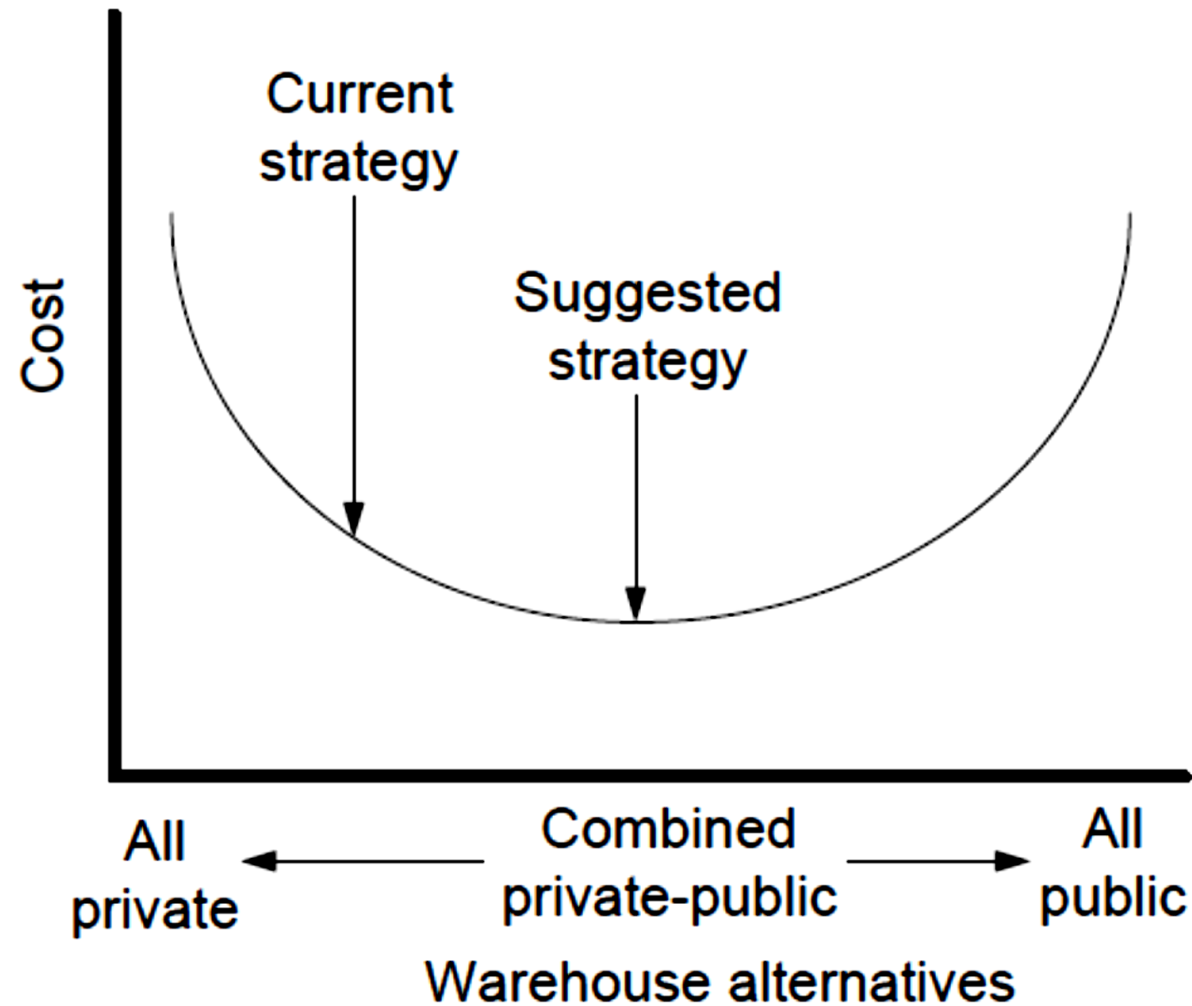


(c) Setting safety stock levels



(d) Setting the sequence of production runs for multiple products

Pure vs. Mixed Strategy



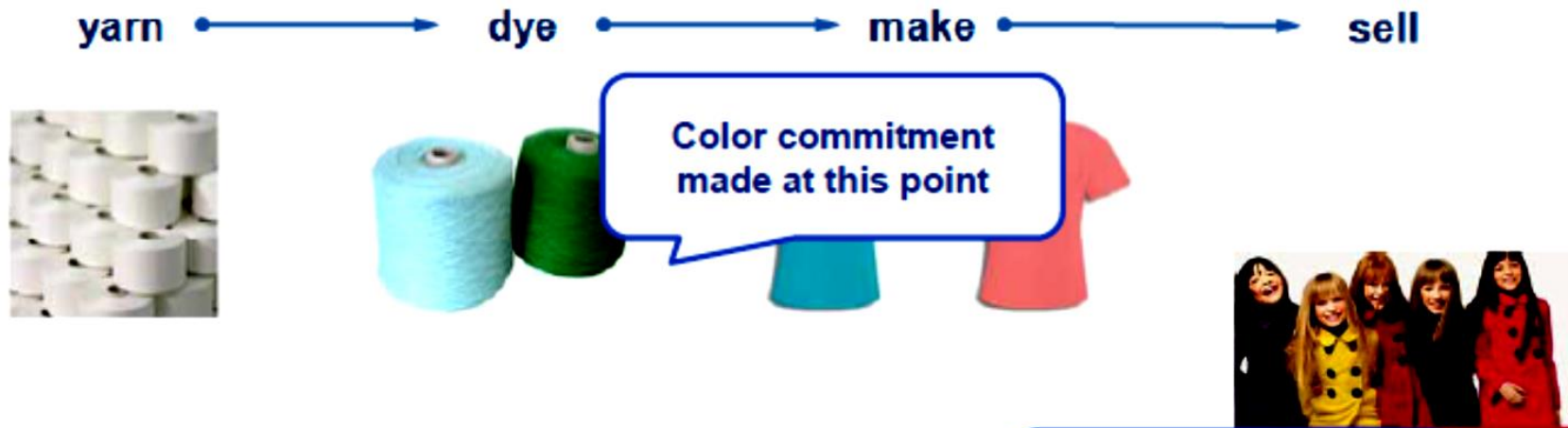
Postponement



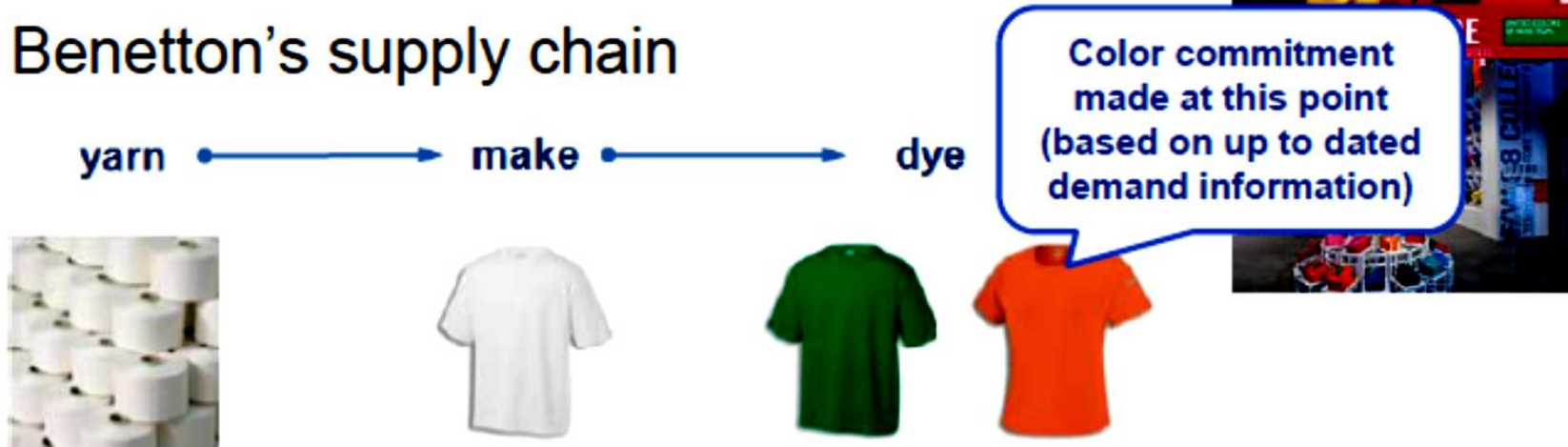
- **Keeping all the car panels a base color (white or gray) until the order is received, then painting to the color ordered**

Postponement

■ Traditional Apparel supply chain



■ Benetton's supply chain



Types of Supply Chains

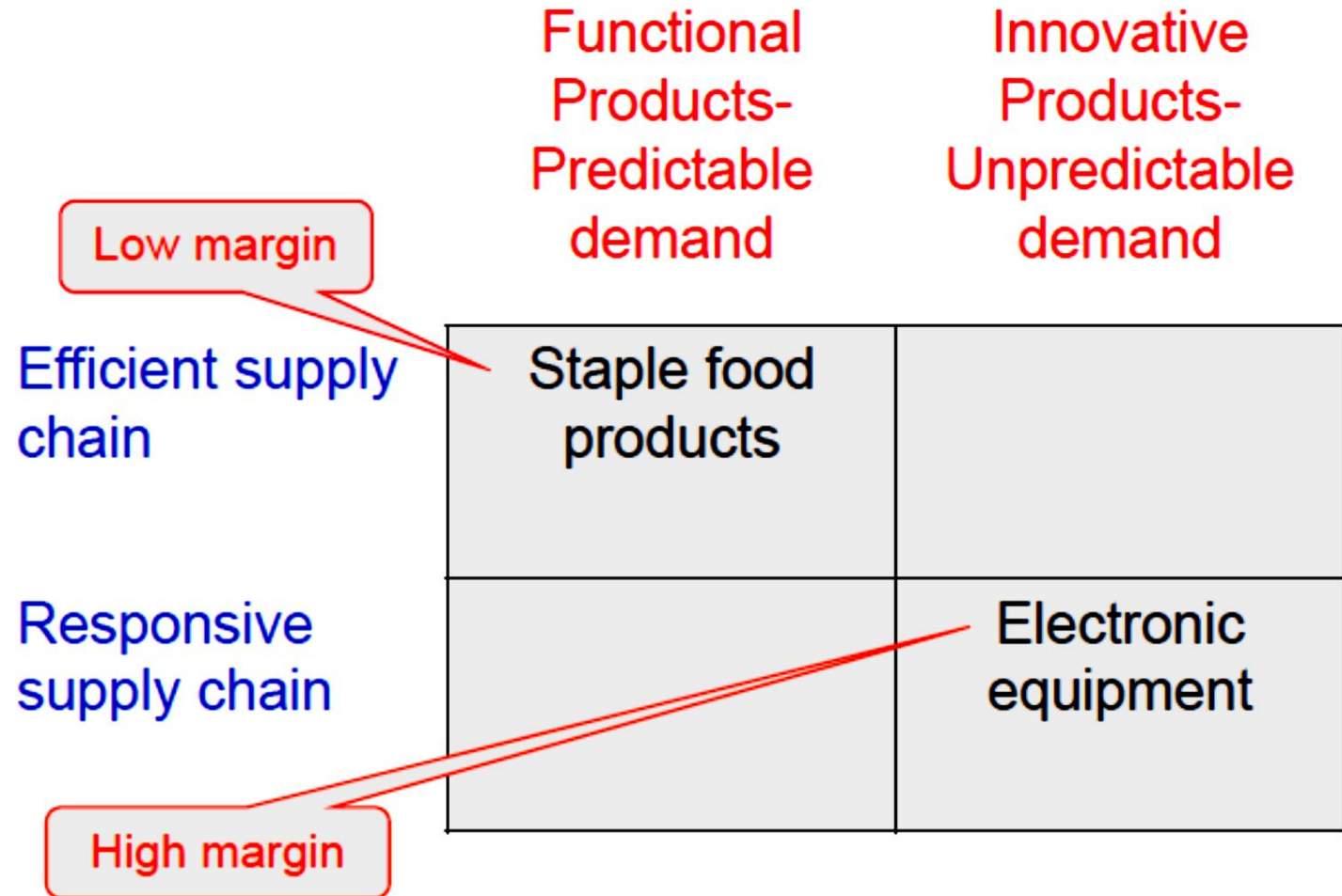
- **Efficient Supply Chains:**

- To coordinate the flow of the materials & services to min. inv. & max. the efficiency of manufacturers & service providers.

- **Responsive Supply Chains:**

- To react quickly to market demands by positioning inv. & capacities in order to hedge against uncertainties in demand.

Choosing the Right Supply Chain Strategy



Choosing the Right Supply Chain Strategy

Efficient supply chain Supply- to-stock	<ul style="list-style-type: none">■ Economical production runs■ Finished goods inventories■ Economical buy quantities■ Large shipment sizes■ Batch order processing
Responsive supply chain Supply- to-order	<ul style="list-style-type: none">■ Excess capacity■ Quick changeovers■ Short lead times■ Flexible processing■ Premium transportation■ Single order processing

Environments Best Suited for Efficient and Responsive Supply Chains

Factor	Efficient Supply Chains	Responsive Supply Chains
Demand	Predictable; low forecast errors	Unpredictable; high forecast errors
Competitive priorities	Low cost; consistent quality; on-time delivery	Development speed; fast delivery times; customization; volume flexibility; high-performance design quality
New-product introduction	Infrequent	Frequent
Contribution margins	Low	High
Product variety	Low	High

Environments Best Suited for Efficient and Responsive Supply Chains

Factor	Efficient Supply Chains	Responsive Supply Chains
Operations strategy	Make-to-stock or standardized services; emphasize high volume, standardized products, or services	Assemble-to-order, make-to-order, or customized services; emphasize product or service variety
Capacity cushion	Low	High
Inventory investment	Low; enable high inventory turns	As needed to enable fast delivery time
Lead time	Shorten, but do not increase costs	Shorten aggressively
Supplier selection	Emphasize low prices; consistent quality; on-time delivery	Emphasize fast delivery time; customization; volume flexibility; high-performance design quality

Seven Principles of Supply Chain Management

Differentiated distribution

- Segment customers based on service needs
- Listen to signals of market demand and plan accordingly

Design to customer needs

- Develop a supply-chain-wide technology strategy
- Customize the logistics network
- Differentiate product closer to the customer
- Source strategically
- Adopt appropriate performance measures

Boundary spanning
info. systems

Postponement

Measuring Strategy Performance

- **Cash flow**
- **Savings**
- **ROI**