

Optimizing Your Supply Chain for Global Competitiveness



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September 30, 2009

A Quick Look at Supply Chain Management Programs at UB School of Management

- **BS in Operations & Supply Chain Management:**
<http://mgt.buffalo.edu/home/programs/undergrad/curriculum/oscm>
- **MBA in Global Services & Supply Management (GSSM):**
<http://mgt.buffalo.edu/home/Programs/mba/academics/curriculum/global>
- **MS in Supply Chain & Operations Management:**
<http://mgt.buffalo.edu/programs/ms/supplychain>
- **PhD in Supply Chain & Operation Management:**
<http://mgt.buffalo.edu/programs/phd/curriculum/oms>

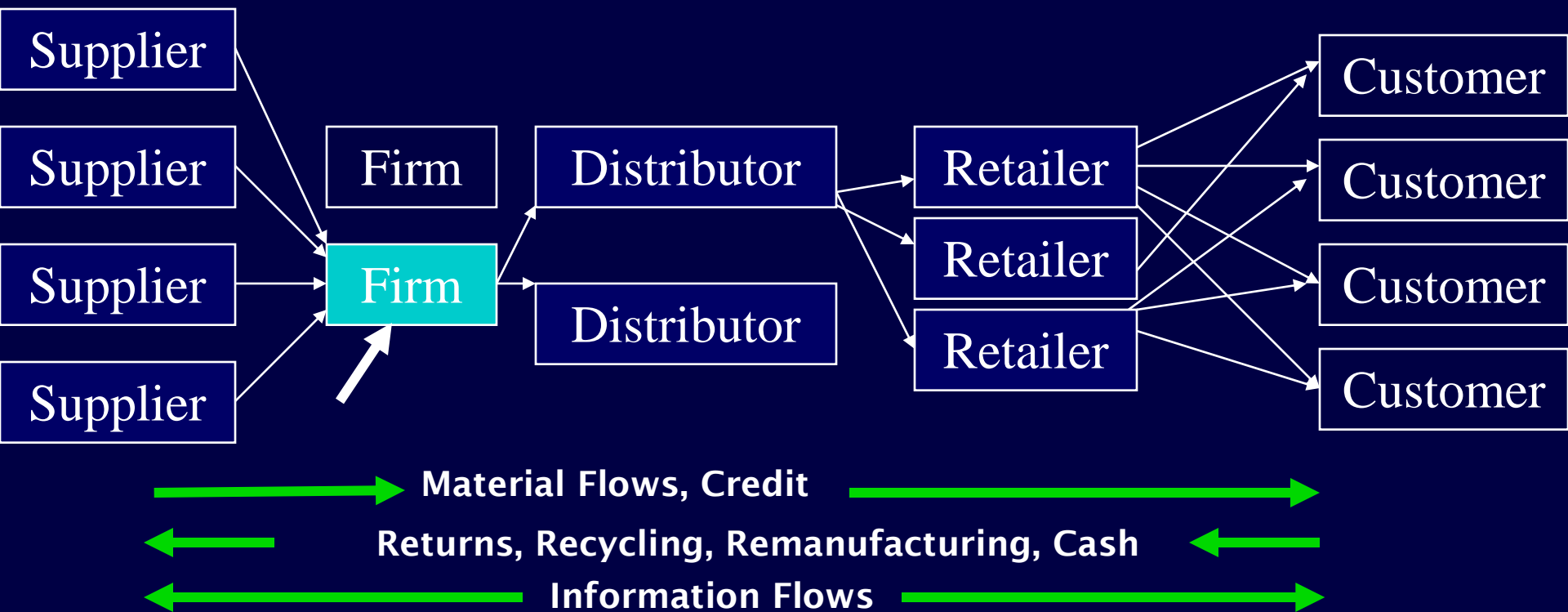
Outline

- 1. Major Trends in Global Supply Chains**
 - 2. SCM-Logistics: High-level Overview & Updated Perspectives**
 - 3. Trends since 1990s & Emergence of US-China-India Triad**
 - 4. Q & A: after the panel discussion**
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1. Some Major Trends

1. Intense competitive pressures
2. Globalized supply chains & global economic downturn
3. Greater variety (SKUs) → mass customization
4. Proliferation of services, greater outsourcing
5. Advances in technology, IT
6. HR diversity, x-functional, x-cultural skills
7. Sustainability and environmental challenges
8. Ethics-related concerns, IPR issues
9. Turbulent times: Political instability, terrorism, nuclear proliferation → Resilient supply chains
10. Growing resource shortages: oil, steel,.. and rising costs of transportation and inputs

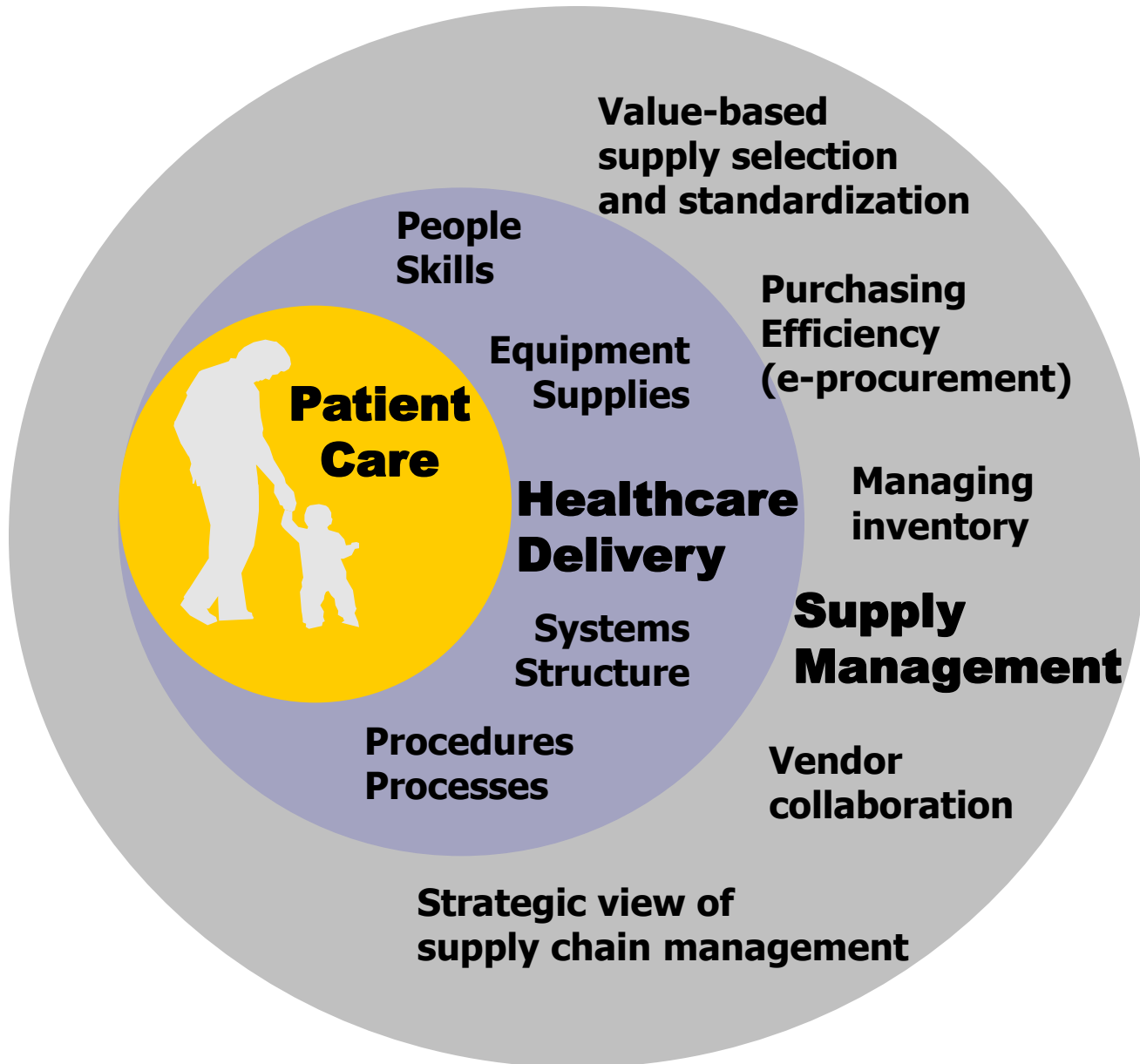
2. Global Supply Chains: Overview



**Within-firm improvement strategies (MRP, ERP, Lean, Six Sigma, ..)
=> Inter-firm improvement strategies**

**Inter-organizational collaboration & integration
to devise new [low-cost, high-response] global supply chains**

Service Supply Chains: (e.g.) Health Care





**SCM
Logistics**



Overview & Updated Perspectives

a. Organizing for SC Improvements

b. Redesign of Products & Processes

c. Redesign of Global Physical Network

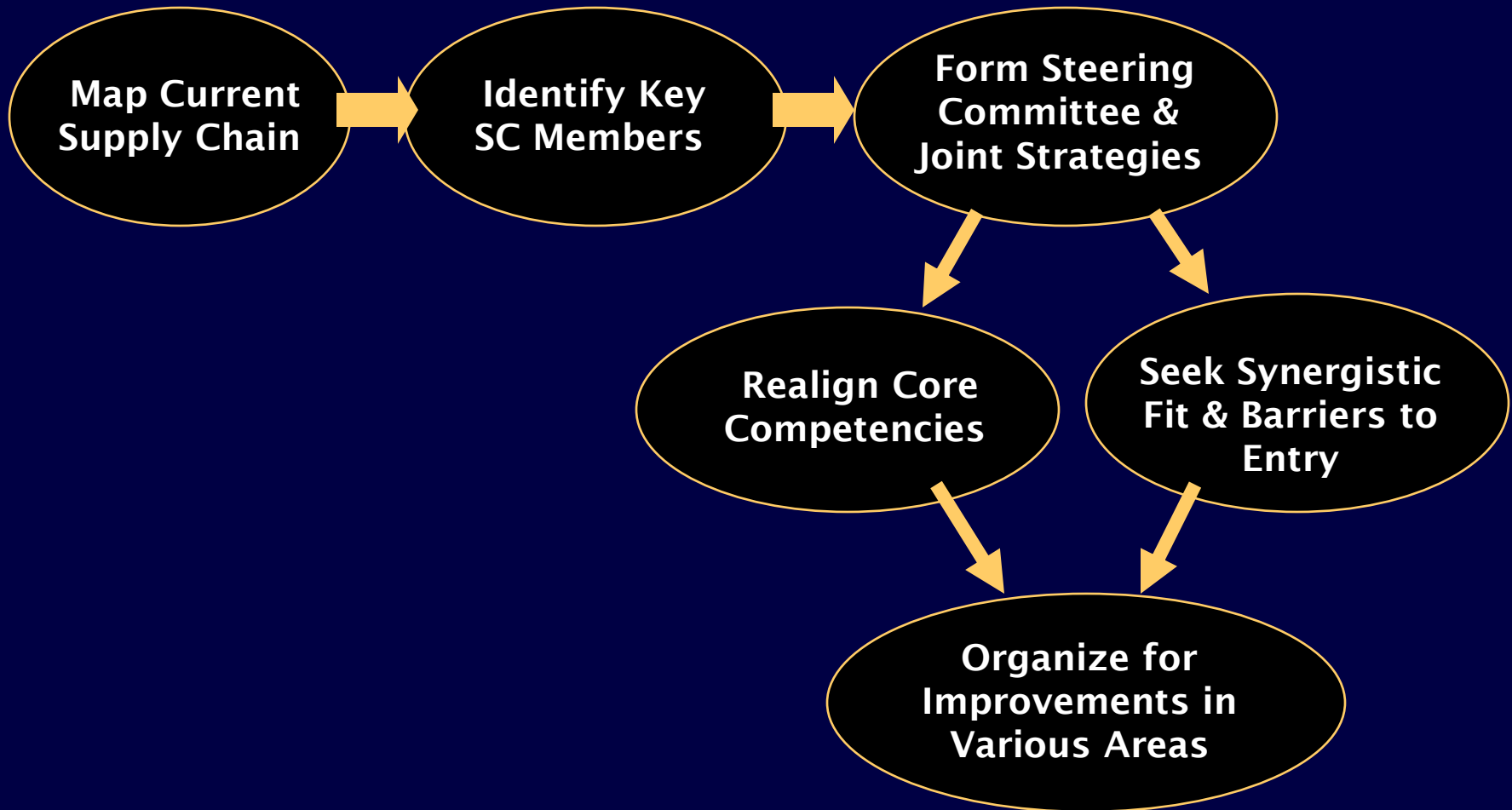
d. Collaborative Operations: Forecasting, ..

e. Global Distribution & Logistics

f. Global Sourcing, E-procurement

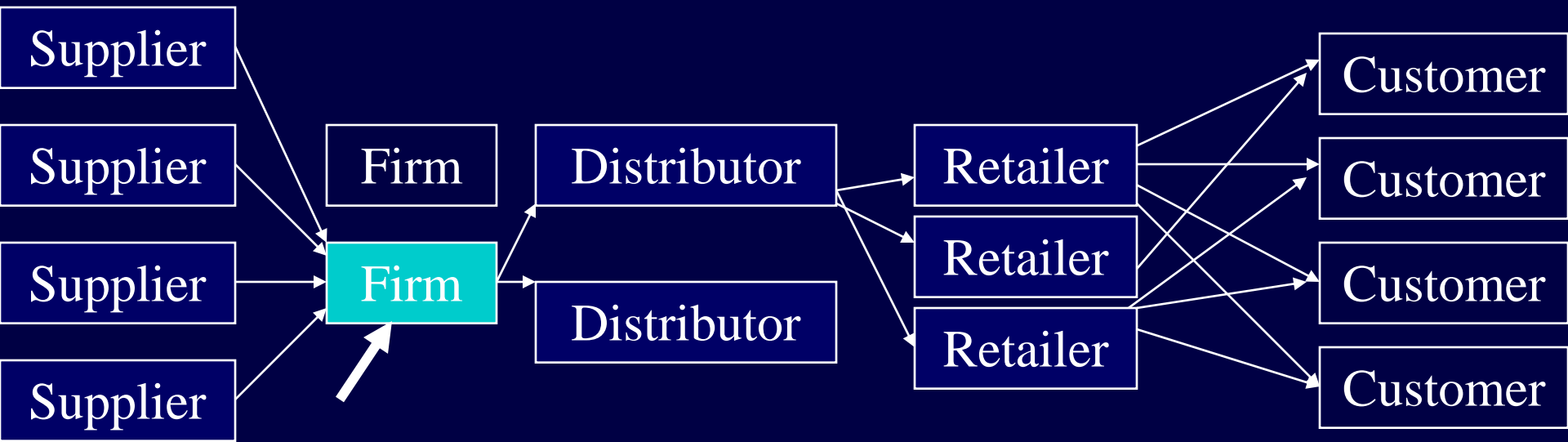
g. Continuous Improvement

a. Organizing for Improvements



Develop overall strategy for the supply chain with others in the chain, for every product category

Supply Chain Map



- **Scoping: high-impact areas; 80-20 rule**
- **Organizing**
- **Redesigning**
- **Implementation**

Supply chain disruption risk mitigation & response

Sustainability: Minimum carbon footprint

Triple Bottom Line: Profit, people & planet

b. Redesign of Products & Processes

Cost, quality, manufacturability all fixed at the design stage itself

Target Costing (“China / Vietnam costing”) :

Design driven by global cost targets

Design for Logistics:

Global logistics issues addressed in Design stage

Form & logistics postponement: Delayed Differentiation

Pre-sourcing:

Early involvement of suppliers & distributors in design

Mass customization initiatives

Inter-organizational integration:

Cross-enterprise & Cross-functional teams

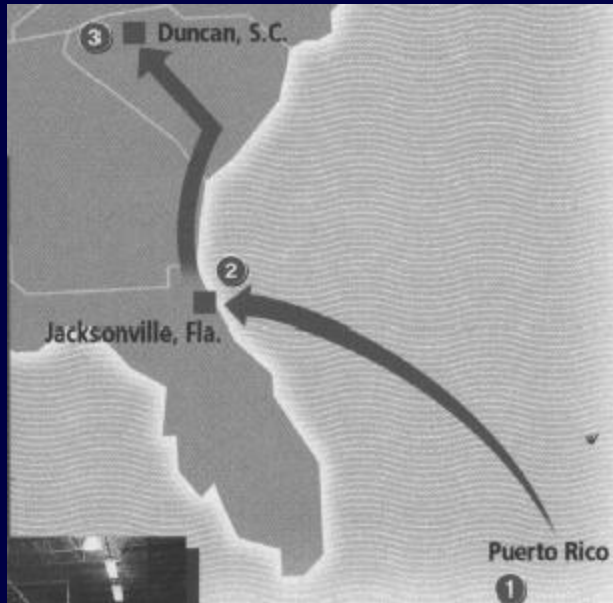
c. Redesign of Physical Network & Industry Restructuring

- Facilities & primary **focus** for each facility?
- Facility **location**: consistent with overall strategy?
- Capacity allocation:
economies of scale + <agility & responsiveness>?
- Sufficient economies of scope?
- Market & supply sources: which market do they serve? where are the supply sources?
- Do they exploit duties & tariffs, & exchange rates?
- Do they exploit form & logistics postponement?

Industry Restructuring Based on Postponement Principles

- **Form Postponement**
- **Logistics Postponement**
 - **Time & Place Postponement**
- **Capacity Postponement**
- **Purchasing Postponement**

Postponement at Eaton: Cutler-Hammer



Before:

All 3500 industrial circuit breakers were made at Arecibo, Puerto Rico, shipped to Jacksonville, FL, and trucked to warehouse in Duncan, SC. High inventory levels at both facilities
Same-day service rate averaged around 90%

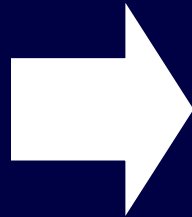
Now:

- 50 generic styles made at Puerto Rico, bar coded & shipped-trucked to SC
- Final assembly done at Duncan, SC after orders are received
- Build instructions downloaded for that style based on bar code in Duncan, SC
- Shipping costs reduced, better containerization reduced damage levels, etc.
- Inventories reduced significantly at both locations
- Same-day service level increased to 98%

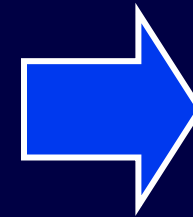
(Source: Modern Materials Handling)

Reconfiguration of Global Manufacturing & Supply Chains

**Non-Reactive
Systems**



**Reactive
Systems**



**Global
Markets**

More stable production configurations for generic items: items with stable, consolidated demand, plus minimum runs of items with high uncertainty

Flexible & agile systems for items with high demand uncertainty; Responsiveness, customization, economies of scope logic; Based on analysis of SKU-product-process matrix, & demand uncertainty.

d. Collaborative Forecasting, Production & Inventory Management

Inter-organizational, collaborative approach

- Involvement of distributors in forecasting**
- updating forecasts with initial orders**
- early information sharing with suppliers, etc.**

Advances in IT

**Point of sale (POS) scanner technologies,
Information sharing through common demand data bases,
Internet, extranets, etc. => Greater visibility of downstream
demand signals !**

New methods of Forecasting & APS

Collaborative Planning, Forecasting & Replenishment (CPFR) Movement: Some Setbacks

Inter-organizational Production Planning: Advanced Planning Systems (APS)

- Demand Planning – Sophisticated forecasting to analyze customer buying patterns
- Supply Planning – Synchronized operations of manufacturers, suppliers, and logistics service providers through information exchange.
- Demand fulfillment – more accurate estimates of order fulfillment dates; order promise, backlog management, and order fulfillment
- Based on greater extranet visibility upstream and downstream and newer optimization tools.

e. Global Distribution & Logistics

- A. Distribution system design exploiting logistics postponement
- B. Logistics Innovations: cross-docking, new IT-logistics models, multi-modal transportation, etc.
- C. Positioning of inventories, virtual aggregation of inventories, etc.
- D. Changing roles of warehouses
- E. Expanding Role for 3PL, 4PL services

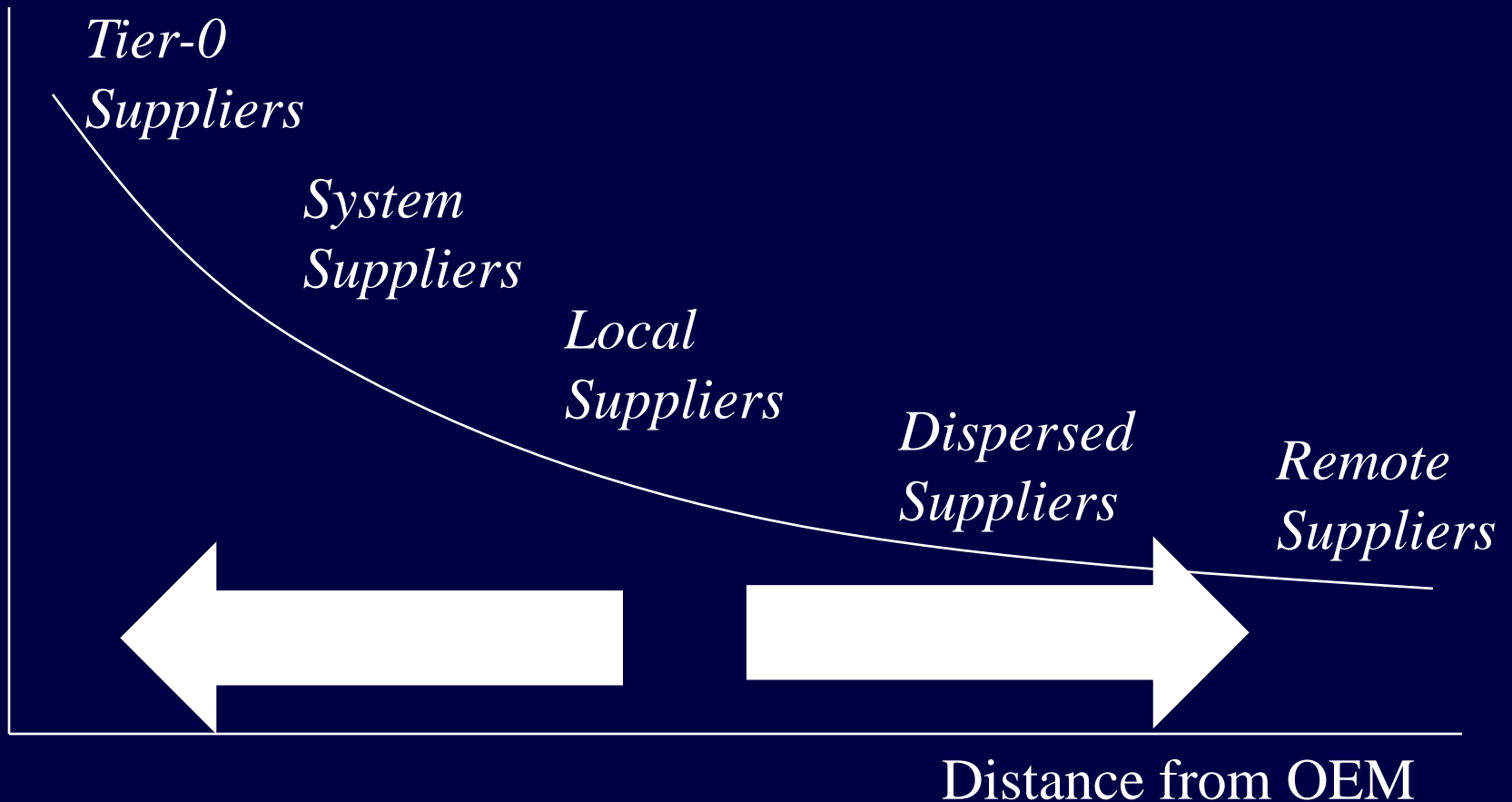
Expanding Roles for 3PL and 4PL

- **Basic warehousing & transportation plus value-added services: inspection, sorting, mixing, break-bulk, rework, processing of customer returns, customs clearance, freight forwarding, inventory management, parts hub, supply chain network design, linking clients with other 3PLs, etc.**
- **Benefits: Businesses can focus on core business, can “variablize” logistics costs, less fixed costs, labor supervision, more flexibility, etc.**
- **New Services: Parts Bank, Supplier Hub, in-transit merge, etc.**
- **Ultimate value proposition: FTL prices for LTL shipments!**

f. Strategic Sourcing & E-Procurement: Aimed At Global, Low-cost Procurement

- **Strategic elevation of Purchasing and global reorganization of Purchasing**
- **Strategic Sourcing initiative**
- **Value-stream-based approach to Purchasing**
- **IT, e-procurement systems**
- **Exploiting exchange rate differentials**
- **Avoiding duties & tariffs amidst free trade zones, trading blocks**
- **Managing disruption risks**
- **New supply contracts to incentivize retailers**

Supply Network: More Global, Yet Greater Proximity of Tier-1 & Tier-0 suppliers



g. Supply Chain Performance Metrics New Mapping Tools & Continuous Improvement Methods

Metrics for Customer Service Level (e.g.) :

Fill Rate , Line Item Fill Rate, Perfect Order Percentage, Lead Time, On-time Delivery, Overall satisfaction, etc.

Supply Chain Mapping Tools

Continuous Improvement:

SCOR, Value Stream Mapping & other techniques

3. Trends since 1990s & Emergence of US-China-India Triad

- 1) Growth of Maquiladoras & Advent of NAFTA**
- 2) Attrition of US domestic manufacturing**
- 3) Increased offshore manufacturing to Japan +Taiwan, S. Korea, Singapore, Malaysia, Thailand, Philippines, ..**
- 4) Emergence of China as factory for the world**
- 5) Job growth anticipated from NAFTA did not materialize**
- 6) Reengineering + Standardization of service business processes**
- 7) Emergence of BPO industry: global redistribution of service jobs**
- 8) What next ?**

Thank You...