Supply-Chain Management

- What is Supply-Chain Management?
- Purchasing
- Supply-Chain Strategies
- Vendor Selection
- Managing the Supply-Chain (Options)

What is Supply-Chain Management?

- Planning, organizing, directing, & controlling the entire flow of information, materials, and services
  - Begins with raw materials
  - Continues through internal operations
  - Ends with distribution of finished goods
- Involves everyone in the supply-chain
  - Example: Your supplier's supplier
- Objective: Maximize value & lower waste

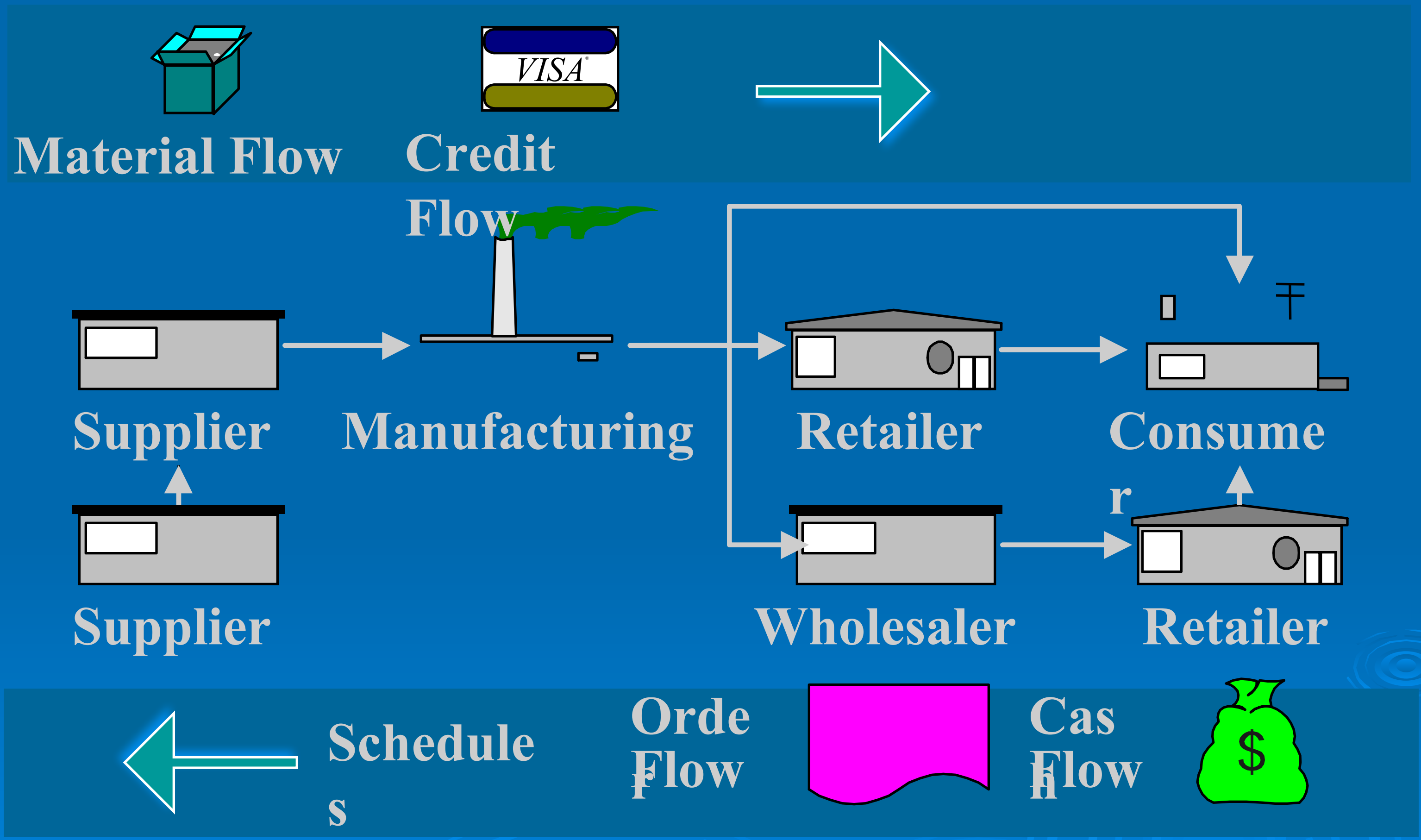
What is a Supply Chain?

- **Supply-chain** is a term that describes how organizations (suppliers, manufacturers, distributors, and customers) are linked together

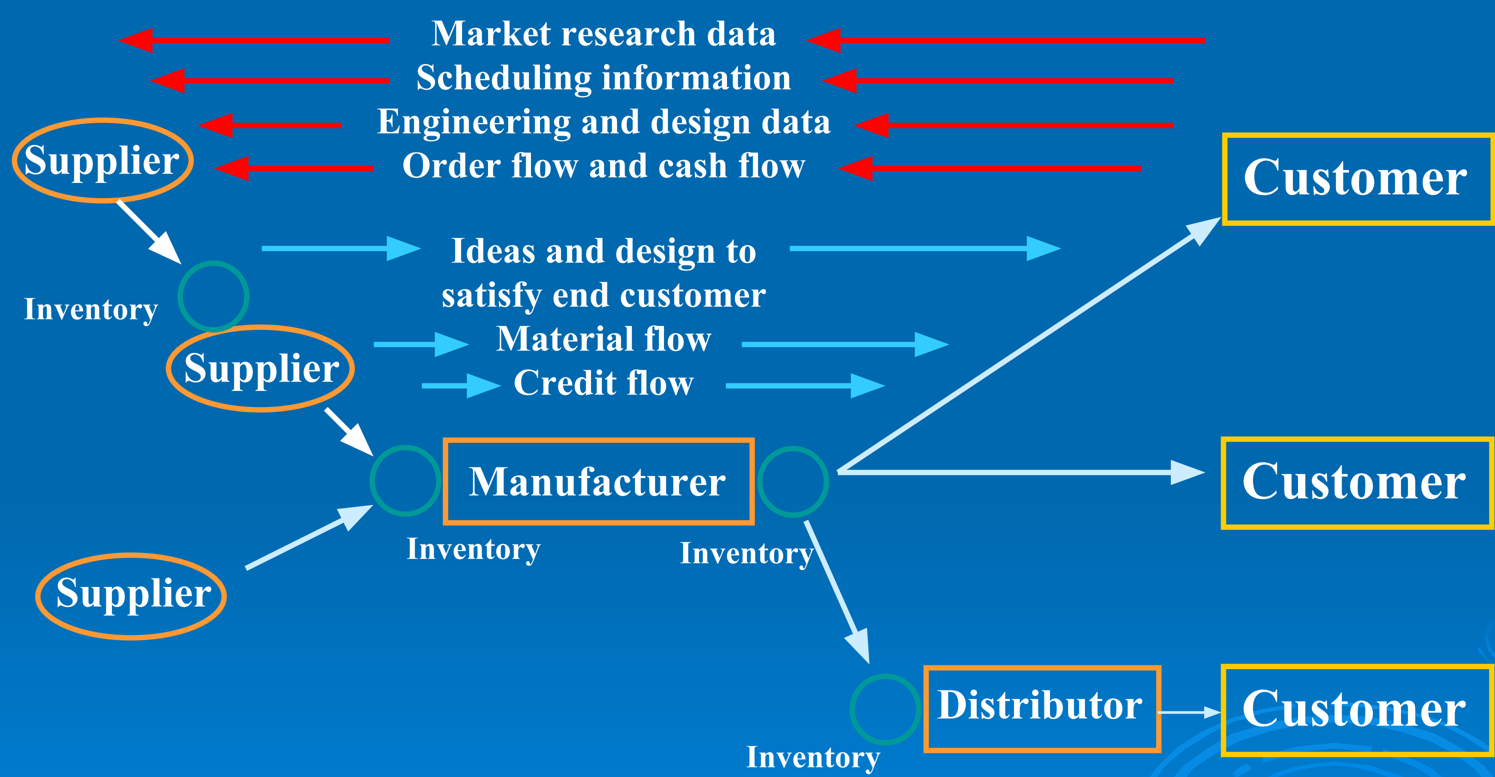
The Supply-Chain

Services	Suppliers	Service support operations	Local service providers	Customers
Supply networks	Inputs	Transformation	Localization	Output
Manufacturing	Suppliers	Manufacturing	Distribution	Customers

The Supply-Chain



The Supply Chain



Global Supply-Chain Issues

- Supply chains in a global environment must be:
  - flexible enough to react to sudden changes in parts availability, distribution, shipping channels, import duties, and currency rates
  - able to use the right information and communication technologies to manage the shipment of parts in and finished products out
  - staffed with local specialists to handle duties, trade, freight, customs and political issues

Purchasing

- Acquisition of goods & services
- Activities
  - Help decide whether to make or buy
  - Identify sources of supply
  - Select suppliers & negotiate contracts
  - Control vendor performance
- Importance
  - Major cost center
  - Affects quality of final product

Purchasing Costs as a Percent of Sales

Industry	Percent of Sales
All industry	52%
Automobile	61%
Food	60%
Lumber	61%
Paper	55%
Petroleum	74%
Transportation	63%

Objectives of the Purchasing Function

- Help identify the products and services that can be best obtained externally; and
- Develop, evaluate, and determine the best supplier, price, and delivery for those products and services

Make-or-Buy Decisions

Reasons for Making

1. Maintain core competence
2. Lower production cost
3. Unsuitable suppliers
4. Assure adequate supply (quantity or delivery)
5. Utilize surplus labor or facilities
6. Obtain desired quality
7. Remove supplier collusion
8. Obtain unique item that would entail a prohibitive commitment for a supplier
9. Protect personnel from a layoff
10. Protect proprietary design or quality
11. Increase or maintain size of company

Make-or-Buy Decisions

Reasons for Buying

1. Frees management to deal with its core competence
2. Lower acquisition cost
3. Preserve supplier commitment
4. Obtain technical or management ability
5. Inadequate capacity
6. Reduce inventory costs
7. Ensure alternative sources
8. Inadequate managerial or technical resources
9. Reciprocity
10. Item is protected by a patent or trade secret

Outsourcing

- Transfers traditional internal activities and resources of a firm to outside vendors
- Utilizes the efficiency that comes with specialization
- Firms outsource information technology, accounting, legal, logistics, and production

Supply-Chain Strategies

- Negotiate with many suppliers; play one supplier against another
- Develop long-term “partnering” arrangements with a few suppliers who will work with you to satisfy the end customer
- Vertically integrate; buy the actual supplier
- Keiretsu - have your suppliers become part of a company coalition
- Create a virtual company that uses suppliers on an as-needed basis.

Many Suppliers Strategy

- Many sources per item
- Adversarial relationship
- Short-term
- Little openness
- Negotiated
- High prices (small orders)
- Infrequent, large lots
- Delivery to receiving dock

Few Suppliers Strategy

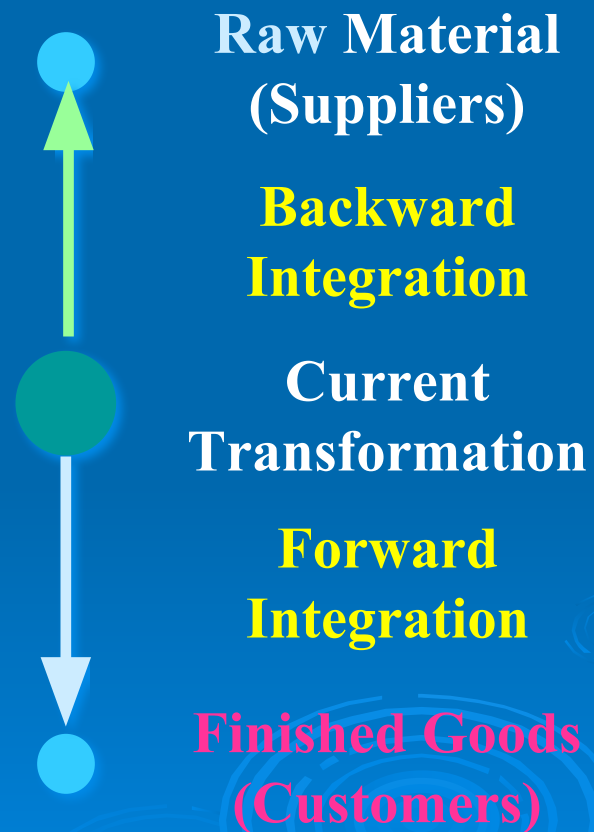
- 1 or few sources per item
- Partnership (JIT)
- Long-term, stable
- On-site audits & visits
- Exclusive contracts
- Low prices (large orders)
- Frequent, small lots
- Delivery to point of use

Vertical Integration Strategy

- Developing the ability to produce goods or service previously purchased
- Integration may be forward, towards the customer, or backward, towards suppliers
- Can improve cost, quality, and inventory but requires capital, managerial skills, and demand
- Risky in industries with rapid technological change

Vertical Integration Strategy

- Ability to produce goods previously purchased
  - Setup operations
  - Buy supplier
- Major financial commitment
- Hard to do all things well



Vertical Integration

Vertical Integration	Examples of Vertical Integration		
Raw material (suppliers)	***Iron ore***	***Silicon***	***Farming***
Backward integration	***Steel***		
Current transformation	***Automobiles***	***Integrated circuits***	***Flour milling***
Forward integration	***Distribution systems***	***Circuit boards***	
Finished goods (customers)	***Dealers***	***Computers Watches Calculators***	***Baked goods***

Keiretsu Network Strategy

- Japanese word for ‘affiliated chain’
- System of mutual alliances and cross-ownership
  - Company stock is held by allied firms
- Links manufacturers, suppliers, distributors, & lenders
  - ‘Partnerships’ extend across entire supply chain

Virtual Company Strategy

- Network of independent companies
  - Linked by technology
    - PC's, faxes, Internet etc.
  - Each contributes core competencies
  - Typically provide services
    - Payroll, editing, designing
- May be long or short-term

Vendor Selection

- Vendor evaluation
  - Identifying & selecting potential vendors
- Negotiations
  - Results in contract
  - Specifies period of agreement, price, delivery terms etc.
- Vendor development
  - Integrating buyer & supplier
    - Example: Electronic Data Interchange

Supplier Selection Criteria

- Company
  - Financial stability
  - Management
  - Location
- Product
  - Quality
  - Price
- Service
  - Delivery on time
  - Condition on arrival
  - Technical support
  - Training

Negotiation Strategies

- Three types:
  - cost-based price model - supplier opens its books to purchaser; price based upon fixed clause plus escalation clause for materials and labor
  - market-based price model - published price or index
  - competitive bidding - potential suppliers bid for contract

Managing the Supply-Chain

- Options:
  - Postponement (Delaying any modification or customization to the product)
  - Channel assembly (Postpones final assembly of a product)
  - Drop shipping (Shipping directly from the supplier to the consumer)
  - Blanket orders (A long-term purchase commitment; delivered against short-term releases)
  - Electronic ordering and funds transfer
  - Stockless purchasing (Direct delivery to purchaser’s using department)
  - Standardization (Reducing the number of variations in materials)

Supply-Chain Performance Compared

	Typical Firms	Benchmark Firms
Number of suppliers per purchasing agent	34	5
Purchasing costs as percent of purchases	3.3%	0.8%
Lead time (weeks)	15	8
Time spent in placing order	42 minutes	15 minutes
Percentage of late deliveries	33%	2%
Percentage of rejected material	1.5%	.0001%
Number of shortages per year	400	4