

MSIN0095: Operations Analytics

Class 1-4: Process Analysis

Class 5,7: Waiting Time Analysis

Class 6: Inventory Management – Newsvendor Model

Class 8: Inventory Management – Newsvendor, Periodic Review

Class 9: Inventory Management – EOQ

Class 10: Inventory Management – Amazon Distribution Strategy

Class 11: Supply Chain Management I: Beer Game

Class 12: Supply Chain Management II

**Class 13: Supply Chain Management III: Strategic Sourcing,
Sustainable Supply Chains**

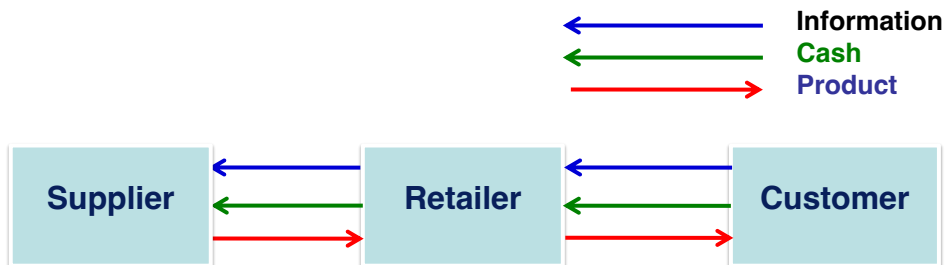
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Strategic Sourcing

- **Role of sourcing in a firm**
- Supplier selection and relationships
- Sustainable supply chains

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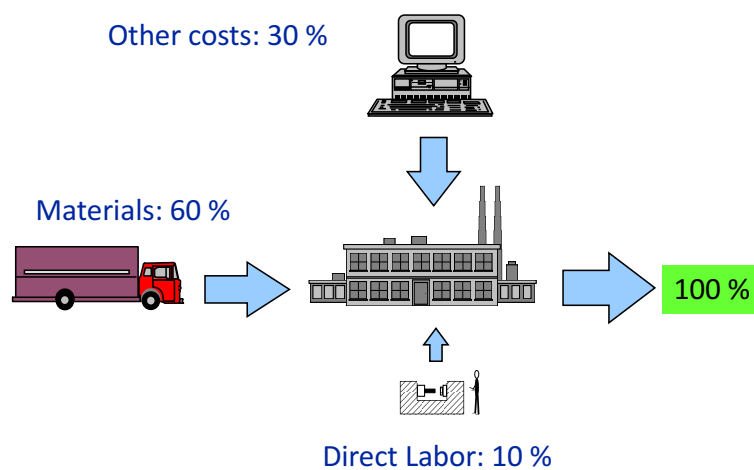
Supply Chain Flows:



- A high-performing supply chain is an important strategic asset for a firm
 - Smooth flow of goods
 - Respond to market information
 - Financially healthy

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Common cost breakdown



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Benefits of reduced spend

- Suppose you purchase materials for \$6, accounting for 60% of the total cost, and sell for \$12. Demand = 100 units
- A 50% increase in demand yields extra \$ 100 profit.
Wouldn't your marketing department be proud!!
- A 50% reduction in material cost yields an extra \$ 300 profit.
- **Procurement costs are a crucial profitability lever**



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Some Success Stories (After-class reading)

- Harley-Davidson **consolidated** its indirect spend maintenance, repair, and operation (MRO) **supplier list of 3,500 down to 3 or 4** by forming an indirect materials \$86 million alliance with three major firms. These \$86 million in purchases represent about 17 percent of the company's total purchased budget. Suppliers met Harley Davidson's five-year goal for cost improvement in one year, reducing spend to \$57 million—a 34 percent savings and a 6 percent reduction off Harley Davidson's total spend (Nelson et al., 2001).
- Leveraging has had a big impact on the bottom line. 'Last year [1998] we [IBM's Global Services Division] saved a little over \$1.5 billion on \$21 billion we spent . . . by **leveraging, negotiating, and moving business to our preferred set of suppliers.**'™ Theresa Metty, Vice President, Global Customer Solutions and General Procurement for IBM.
- Since the mid '80s, Intel has made a serious effort to **consolidate its supply base**, adopting an n+1 rule-of-thumb in determining the maximum number of suppliers ('n') needed in each commodity area to satisfy production requirements." That is, Intel will not have more than one extra supplier above the minimum number needed to satisfy its production requirements. For example, the number of suppliers of lead frames has been trimmed from 12 to 3, ceramic packages from 6 to 3, and wire and molding compound from 3 to 1 (Morgan, 1995a).
- John Deere reports that it studied its \$70 million annual MRO spend across 40 North American units, and **reduced the number of suppliers from 1675 to 20 and cut costs by 13 percent** (Smock, 2001).

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