

## Chapter 11

### B2B E-commerce: Supply Chain Management and Collaborative Commerce

#### Defining B2B Commerce

- Before Internet
  - ❖ B2B transactions called trade or procurement process
- Total inter-firm trade
  - ❖ Total flow of value among firms
- B2B commerce
  - ❖ All types of computer-enabled inter-firm trade
- B2B e-commerce
  - ❖ The portion of B2B commerce enabled by the Internet

#### The Evolution of B2B Commerce

- Automated order-entry systems
  - ❖ Seller-side solution
- Electronic data interchange (EDI)
  - ❖ Buyer-side solution
  - ❖ Hub-and-spoke system
  - ❖ Serve vertical markets
- B2B electronic storefronts
- Net marketplaces
- Private industrial networks

#### Potential Benefits of B2B E-commerce

- Lower administrative costs
- Lower search costs for buyers
- Reduced inventory costs
  - ❖ Increasing competition among suppliers
  - ❖ Reducing inventory carried
- Lower transaction costs
  - ❖ Automation, eliminating paperwork
- Increased production flexibility by ensuring just-in-time parts delivery
  
- Improved quality of products by increasing cooperation among buyers and sellers
- Decreased product cycle time
- Increased opportunities for collaboration
- Greater price transparency
- Increased visibility, real-time information sharing
- However, some risk is posed by increased globalization and consolidation

#### The Procurement Process and the Supply Chain

- Procurement process
  - ❖ The way firms purchase materials they need to make products
- Supply chain
  - ❖ Firms that purchase goods, their suppliers, and their suppliers' suppliers, relationships and processes involved
- Steps in procurement process
  - ❖ Deciding who to buy from and what to pay
  - ❖ Completing transaction

### **Types of Procurement**

- Firms purchase two types of goods
  - ❖ Direct goods: Integrally involved in production process
  - ❖ Indirect goods: All goods not directly involved in production process (MRO goods)
- Firms use two methods to purchase
  - ❖ Contract purchasing:
    - Involves long-term written agreements to purchase specified products, with agreed-upon terms and quality
  - ❖ Spot purchasing:
    - Involves purchase of goods based on immediate needs in larger marketplaces that involve many suppliers
- Multi-tier supply chain
  - ❖ Complex series of transactions between firm and thousands of suppliers, supplying thousands of goods

### **Trends in Supply Chain Management**

- Supply chain management (SCM)
  - ❖ Activities used to coordinate key players in the procurement process
- Major developments in SCM
  - ❖ Just-in-time and lean production
  - ❖ Supply chain simplification
  - ❖ Adaptive supply chains
  - ❖ Accountable supply chains
  - ❖ Sustainable supply chains
  - ❖ Electronic data interchange
  - ❖ Supply chain management systems
  - ❖ Collaborative commerce

### **Just-in-Time and Lean Production**

- Just-in-Time production
  - ❖ Method of inventory cost management
  - ❖ Seeks to eliminate excess inventory to bare minimum
- Lean production
  - ❖ Set of production methods and tools
  - ❖ Focuses on elimination of waste throughout customer value chain, not just inventory

### **Supply Chain Simplification**

- Reducing size of supply chain
  - ❖ Working with strategic group of suppliers to reduce product and administrative costs and improving quality
- Essential for just-in-time production models
- May involve:
  - ❖ Joint product development and design
  - ❖ Integration of computer systems
  - ❖ Tight coupling
    - Ensuring precise delivery of ordered parts at specific times

### **Adaptive Supply Chains**

- Reducing centralization
  - ❖ Reduce risks caused by relying on single suppliers who are subject to local instability
    - e.g.: European financial crisis, Japanese earthquake
  
- Creating regional or product-based supply chains
  - ❖ Allowing production to be moved to temporary safe harbors in case of local manufacturing disruptions

### **Accountable Supply Chains**

- Labor conditions in low-wage, under-developed producer countries are acceptable to consumers
  - ❖ Slave/forced labor
  - ❖ Child labor
  - ❖ Routine exposure to toxic substances
  - ❖ More than 48 hrs/week
  - ❖ Harassment and abuse
  - ❖ Sexual exploitation
  - ❖ Adequate compensation

### **Sustainable Supply Chains**

- Taking social and ecological interests into account
  - ❖ e.g.: Water usage, air pollution
- Using most efficient environment—regarding means of production, distribution, logistics
  - ❖ Good business, over long-term
  - ❖ Create value for consumers, investors, communities

### **Electronic Data Interchange (EDI)**

- Broadly defined communications protocol for exchanging documents among computers
  - ❖ Stage 1: 1970s–1980s—Document automation
  - ❖ Stage 2: Early 1990s—Document elimination
  - ❖ Stage 3: Mid-1990s—Continuous replenishment/access model

### **Supply Chain Management Systems**

- Continuously link activities of buying, making, and moving products from suppliers to purchasing firms
  - ❖ SAP and Oracle Mobile apps for smartphones, tablets
- Integrates demand side of business equation by including order entry system in the process
- With SCM system and continuous replenishment, inventory is eliminated and production begins only when order is received

### **Collaborative Commerce**

- Use of digital technologies for organizations to collaboratively design, produce, and manage products through life cycles
- Moves focus from transactions to relationships among supply chain participants
- Unlike EDI, more like an interactive teleconference among members of supply chain
- Use of Internet technologies for rich communications environment
  - ❖ Sharing designs, documents, messages, network meetings, videoconferencing

### **Social Networks and B2B**

- Social networks can provide personal connections that can help decision-making in supply chain
  - ❖ Many supply chain networks are private
  - ❖ Others on Facebook

### **Two Main Types of Internet-based B2B Commerce**

- Net marketplaces
  - ❖ Bring together potentially thousands of sellers and buyers in single digital marketplace operated over Internet
  - ❖ Transaction-based
  - ❖ Support many-to-many as well as one-to-many relationships
- Private industrial networks
  - ❖ Bring together small number of strategic business partner firms that collaborate to develop highly efficient supply chains
  - ❖ Relationship-based
  - ❖ Support many-to-one and many-to-few relationships
  - ❖ Largest form of B2B e-commerce

### **Net Marketplaces**

- Ways to classify Net marketplaces
  - ❖ Pricing mechanism, nature of market served, ownership
- By business functionality
  - ❖ What businesses buy (direct vs. indirect goods)
  - ❖ How businesses buy (spot purchasing vs. long-term sourcing)
  - ❖ Four main types
    - E-distributors
    - E-procurement
    - Exchanges
    - Industry consortia

### **E-distributors**

- Most common type of Net marketplace
- Electronic catalogs representing products of thousands of direct manufacturers
- Typically, independently owned intermediaries
- Offer industrial customers single source to purchase indirect goods on spot basis
- Typically, horizontal
- Usually, fixed price—discounts for large customers

### **E-procurement Net Marketplaces**

- Independently owned intermediaries
- Connect hundreds of suppliers of indirect goods
- Firms pay fees to join market
- Revenues from transaction fees, licensing consultation services and software, network fees
- Offer value chain management (VCM) services

### **Exchanges**

- Independently owned online marketplaces
- Connect hundreds to thousands of suppliers and buyers in dynamic, real-time environment
- Vertical markets, spot purchasing in single industry
- Charge commission fees on transaction
- Many have failed due to low liquidity

### **Industry Consortia**

- Industry-owned vertical markets
- Purchase of direct inputs from set of invited participants
- Emphasize long-term contractual purchasing, stable relationships, creation of data standards
- Ultimate objective:
  - ❖ Unification of supply chains within entire industries through common network and computing platform
- Revenue from transaction and subscription fees
  - ❖ Many different pricing mechanisms
- Can force suppliers to use consortia's networks

### **Private Industrial Networks**

- Private trading exchanges (PTXs)
- Web-enabled networks for coordination of trans-organizational business processes (collaborative commerce)
  - ❖ Direct descendant of EDI; closely tied to ERP systems
  - ❖ Manufacturing and support industries
  - ❖ Single, large manufacturing firm sponsors network
- Range in scope from single firm to entire industry

### **Private Industrial Networks and Collaborative Commerce**

- Forms of collaboration
  - ❖ Collaborative resource planning, forecasting, and replenishment (CPFR)
    - Working with network members to forecast demand, develop production plans, and coordinate shipping, warehousing and stocking activities to ensure that retail and wholesale shelf space is replenished with just the right amount of goods
  - ❖ Demand chain visibility
  - ❖ Marketing coordination and product design
    - Can ensure products fulfill claims of marketing
    - Feedback enables closed loop marketing