Chapter 6
Company-Centric B2B and E-Procurement

Jason C. H. Chen, Ph.D.
Professor of MIS
School of Business Administration
Gonzaga University
Spokane, WA 99223 USA
chen@jepson.gonzaga.edu
http://barney.gonzaga.edu/~chen

Learning Objectives
1. Describe the B2B field.
2. Describe the major types of B2B models.
3. Discuss the characteristics of the sell-side marketplace, including auctions.
4. Describe the sell-side intermediary models.
5. Describe the characteristics of the buy-side marketplace and e-procurement.
6. Explain how reverse auctions work in B2B.
8. Describe infrastructure and standards requirements for B2B.

OPENING VIGNETTE: General Motors’ B2B Initiatives

• The Problem
  – Because the automotive industry is very competitive, GM is always looking for ways to improve its effectiveness
  – GM expects to custom-build the majority of its cars by 2005
  – The company hopes to use the system to save billions of dollars by reducing its inventory of finished cars

General Motors’ B2B Initiatives (cont.)

– GM sells custom-designed cars online through its dealers’ sites avoiding channel conflict
– This collaboration requires sharing information with dealers and suppliers
– Operational problems
  • disposing of manufacturing machines that are no longer sufficiently productive
  • procurement of commodity products

Two major operational problems:

General Motors’ B2B Initiatives (cont.)

– Capital assets problem
  GM implemented its own electronic market from which forward auctions are conducted
– Resource procurement problem
  GM automated the bidding process using reverse auctions on its e-procurement site

• The Solution
  – GM established an extranet infrastructure called ANX (Automotive Network eXchange)
  – ANX has evolved into the consortium exchange covisint.com supported by other automakers
    • Solutions and services to Connect, Communicate, and Collaborate.
General Motors’ B2B Initiatives (cont.)

• The Results
  – Within just 89 minutes after the first forward auction opened, eight stamping presses were sold for $1.8 million
  – Off-line method, a similar item would have sold for less than half of its online price, and the process would have taken 4 to 6 weeks

• What can we learn…
  – Involvement of a large company in three EC activities:
    1. connecting with dealers and suppliers through an extranet
    2. electronically auctioning used equipment to customers
    3. conducting purchasing via electronic bidding

End of the Vignette

General Motors’ B2B Initiatives (cont.)

– Online reverse auction prices are significantly lower than the prices the company had been paying for the same items previously negotiated by manual tendering
– Administrative costs per order have been reduced by 40%
– Most GM dealers and thousands of GM’s suppliers are connected on a common extranet platform

6.1 Concepts, Characteristics, and Models of B2B EC

• Basic B2B concepts
  Business-to-business e-commerce (B2B EC): Transactions between businesses conducted electronically over the Internet, extranets, intranets, or private networks; also known as eB2B (electronic B2B) or just B2B
Focus on e-Business Applications

Exhibit 6.1 Key Drivers for B2B E-Commerce

Concepts, Characteristics, and Models of B2B EC (cont.)

- B2B characteristics
  - Parties to the transaction
    - Online intermediary: An online third party that brokers a transaction online between a buyer and a seller; can be virtual or click-and-mortar
  - Types of transactions
    - Spot buying: The purchase of goods and services as they are needed, usually at prevailing market prices
    - Strategic sourcing: Purchases involving long-term contracts that are usually based on private negotiations between sellers and buyers

B2B Characteristics (cont.)

- Types of materials
  - Direct materials: Materials used in the production of a product (e.g., steel in a car or paper in a book)
  - Indirect materials: Materials used to support production (e.g., office supplies or light bulbs)
  - MROs (maintenance, repairs, and operations): Indirect materials used in activities that support production

Concepts, Characteristics, and Models of B2B EC (cont.)

- Direction of trade
  - Vertical marketplaces: Markets that deal with one industry or industry segment (e.g., electronics, cars, steel, chemicals)
  - Horizontal marketplaces: Markets that concentrate on a service, material, or a product that is used in all types of industries (e.g., office supplies, PCs)

Concepts, Characteristics, and Models of B2B EC (cont.)

- Basic B2B transaction types
  - Sell -side (1:M): One seller to many buyers
  - Buy -side (M:1): One buyer from many sellers
  - Exchanges (M:M): Many sellers to many buyers
  - Collaborative commerce (M and Connected): Communication and sharing of information, design, and planning among business partners
Concepts, Characteristics, and Models of B2B EC (cont.)

• One-to-many and many-to-one: company-centric transactions
  • Company-centric EC: E-commerce that focuses on a single company’s buying needs (many-to-one, or buy-side) or selling needs (one-to-many, or sell-side)
  • Private e-marketplaces: Markets in which the individual sell-side or buy side company has complete control over participation in the selling or buying transaction

Concepts, Characteristics, and Models of B2B EC (cont.)

• Many-to-many: exchanges
  • Exchanges (trading communities or trading exchanges): Many-to-many e-marketplaces, usually owned and run by a third party or a consortium, in which many buyers and many sellers meet electronically to trade with each other; also called trading communities or trading exchanges
  • Public e-marketplaces: Third-party exchanges that are open to all interested parties (sellers and buyers)

Concepts, Characteristics, and Models of B2B EC (cont.)

• Collaborative commerce (C-commerce)
  • Communication, design, planning, and information sharing among business partners
  • To qualify as C-commerce, the activities that are shared must represent far more than just financial transactions (e.g., design, manufacture, or management)

Concepts, Characteristics, and Models of B2B EC (cont.)

• Supply chain relationships in B2B
  • Supply chain process consists of a number of interrelated subprocesses and roles
    • acquisition of materials from suppliers
    • processing of a product or service
    • packaging it and moving it to distributors and retailers
    • purchase of a product by the end consumer

Concepts, Characteristics, and Models of B2B EC (cont.)

• B2B private e-marketplace provides a company with high supply chain power and high capabilities for online interactions
  • Joining a public e-marketplace provides a business with high buying and selling capabilities, but will result in low supply chain power
  • Companies that choose an intermediary to do their buying and selling will be low on both supply chain power and buying/selling capabilities
Concepts, Characteristics, and Models of B2B EC (cont.)

• Benefits of B2B
  – Eliminates paper and reduces administrative costs.
  – Expedites cycle time
  – Lowers search costs and time for buyers
  – Increases productivity of employees dealing with buying and/or selling

• Reduces errors and improves quality of services.
  – Reduces inventory levels and costs
  – Increases production flexibility, permitting just-in-time delivery
  – Facilitates mass customization
  – Increases opportunities for collaboration

6.2 One-to-Many: Sell-Side Marketplaces

• Sell-side e-marketplace: A Web-based marketplace in which one company sells to many business buyers from e-catalogs or auctions, frequently over an extranet
• Three major direct sales methods:
  1. selling from electronic catalogs
  2. selling via forward auctions (GM case)
  3. one-to-one selling

One-to-Many: Sell-Side Marketplaces (cont.)

Exhibit 6.3 Sell-Side B2B Marketplace Architecture

Business-to-Consumer EC

One-to-Many: Sell-Side Marketplaces (cont.)

• B2B sellers
  – click-and-mortar manufacturers or intermediaries, usually distributors or wholesalers
• Customer service
  – online sellers can provide sophisticated customer services
• Direct Sales from Catalogues
  – Configuration and customization
    • customize products
    • get price quotes
    • submit orders

6.3 Selling via Auctions

• Using auctions on the sell side
  – Revenue generation
  – Cost savings
  – Increased page views
  – Member acquisition and retention
Selling via Auctions (cont.)

- Selling from the company’s own site
  - The company will have to pay for infrastructure and operate and maintain the auction site
  - If the company already has an electronic marketplace for selling from e-catalogs, the additional cost may not be too high
- Using intermediaries
  - An intermediary may conduct private auctions for a seller, either from the intermediary’s or the seller’s site
  - A company may choose to conduct auctions in a public marketplace, using a third-party hosting company

Using Intermediaries in Auctions (cont.)

- Benefits of using intermediaries
  - No additional resources are required
  - Auction set up to show the branding (company name) of the merchant rather than the intermediary’s name
  - Intermediary does the work of:
    - Controlling data on web traffic, page views, and member registration
    - Setting all the auction parameters (transaction fee structure, user interface, and reports)
    - Integrating the information flow and logistics

6.4 Sell-Side Cases

- Direct sales: Cisco Systems
  - World’s leading producer of routers, switches, and network interconnection services
  - Cisco’s portal began with technical support for customers and developed into one of the world’s largest direct sales EC sites

Sell-Side Cases (cont.)

- Customer service
  - Applications offered:
    - Software downloads
    - Defect tracking
    - Technical advice
  - 85% of customer service inquiries and 95% of software updates are delivered online
- Online ordering by customers
  - Provides online pricing and configuration tools to customers
  - 98% are now placed through Cisco Connection Online (CCO)

Sell-Side Cases (cont.)

- Benefits
  - Reduced operating costs for order taking
  - Enhanced technical support and customer service
  - Reduced technical support staff cost
  - Reduced software distribution costs
  - Faster service

Sell-Side Cases (cont.)

- B2B intermediary: Boeing’s parts marketplace
  - World’s largest maker of airplanes for commercial and military customers
  - Major goal of Boeing’s intermediary parts market, called PART is supporting customers’ maintenance needs as a customer service
  - Online strategy is to provide a single point of online access through which airlines (buyers) and the maintenance and parts providers (suppliers) can access data about the parts they need
  - Began using traditional EDI
Sell-Side Cases (cont.)

- 1996, Boeing introduced its PART page on the Internet
- Customers around the world could
  - check parts availability and pricing
  - order parts
  - track order status
- Less than a year later, about 50 percent of Boeing’s customers used PART for parts orders and customer service inquiries

Sell-Side Cases (cont.)

- Boeing OnLine Data (BOLD) enables mechanics and technicians at the airport to access the technical manuals they need for repairs
- These manuals are now available in digital form, and mechanics and technicians can access them via wireline or wireless devices

Examples of Different B2B E-Commerce Sites Used by Organizational Buyers (and Sellers)

- Best search tool sites
- Collaboration Hub
- Exchanges
- Communities
- Procurement Hub
- Catalog site

One-from-Many: Buy-Side Marketplaces and E-Procurement

6.5 One-from-Many: Buy-Side Marketplaces and E-Procurement

- Buy-side e-marketplace: A corporate-based acquisition site that uses reverse auctions, negotiations, group purchasing, or any other e-procurement method

Benefits of E-Procurement

- Benefits of e-procurement
  - Increasing the productivity of purchasing agents
  - Lowering purchase prices through product standardization and consolidation of purchases
  - Improving information flow and management
  - Minimizing the purchases made from noncontract vendors. Improving the payment process
  - Establishing efficient, collaborative supplier relations
  - Ensuring delivery on time, every time
  - Reducing the skill requirements and training needs of purchasing agents

One-from-Many: Buy-Side Marketplaces and E-Procurement (cont.)

- Inefficiencies in traditional procurement management
  - Procurement management: The coordination of all the activities relating to purchasing goods and services needed to accomplish the mission of an organization
  - Maverick buying: Unplanned purchases of items needed quickly, often at non-pre-negotiated, higher prices
- e-procurement: The electronic acquisition of goods and services for organizations
One-from-Many: Buy-Side Marketplaces and E-Procurement (cont.)

Exhibit 6.5 A Traditional Procurement Process

Pre-Purchase Activities
- Search for Vendors and Products
  - E-catalogs, brochures, conventions, exhibits, telephone calls, visits.
- Quality Vendors
  - Research firms, financial stability, credit history.
- Select a Market Mechanism
  - Private, public, auctions, exchange, tendering system has a special process.

Compare and Negotiate
- Price, financing, delivery, quality, etc.

Make a Purchase
- (Individual or committee)
- Have a contract, arrange payment.

Initiate a Purchase Order (PO)
- Electronic form or letterhead order.

Arrange a pick-up or receive shipment
- Check shipping documents.

Make Payment
- Approve payment, arrange money transfer.

Exhibit 6.6 The E-Procurement Process: A Buyer’s View

B2B e-Procurement Processes

Implementing E-Procurement
- Implementing e-procurement—major e-procurement implementation issues
  - Fitting e-procurement into the company EC strategy
  - Reviewing and changing the procurement process itself
  - Providing interfaces between e-procurement with integrated enterprisewide information systems such as ERP or supply chain management (SCM)
  - Coordinating the buyer’s information system with that of the sellers; sellers have many potential buyers
  - Consolidating the number of regular suppliers to a minimum and assuring integration with their information systems, and if possible with their business processes

The three Ds model.

Unbundling the Business
6.6 Buy-Side E-Marketplaces: Reverse Auctions

- One of the major methods of e-procurement is through reverse auctions (tendering or bidding model).
- Request for quote (RFQ): The “invitation” to participate in a tendering (bidding) system.
- The reverse auction method is the most common model for large MRO purchases as it provides considerable savings.

Reverse Auctions
A Pioneer: General Electric’s TPN

- Procurement revolution at GE—Trading Process Network (TPN) Post
  - With this online system, the sourcing department received the requisitions electronically from its internal customers (i.e., in the different departments) and sent off a bid package to suppliers around the world via the Internet.
  - The system automatically pulled the correct drawings and attached them to the electronic requisition forms.

Reverse Auctions
A Pioneer: General Electric’s TPN (cont.)

- Benefits of TPN
  - Labor involved in the procurement process declined by 30%.
  - Cut by 50% staff involved in the procurement process and redeployed those workers into other jobs.
  - Reduced the number of days to complete a contract by half.
  - Invoices were automatically reconciled with purchase orders.
  - Procurement departments around the world were able to share information about their best suppliers.

Exhibit 6.8 The Reverse Auction Process (Sellers Bid)

Reverse Auctions
A Pioneer: General Electric’s TPN (cont.)

- GXS Express Marketplaces is an expanded system that makes it a public posting place for other buyers.
  - Suppliers gain instant access to global buyers.
  - Dramatically improve the productivity of their bidding and sales activities.
  - Increased sales volume.
  - Expanded market reach and ability to find new buyers.
  - Lower administration costs.
  - Shorter requisition cycle time.
  - Improved sales staff productivity.
  - Streamlined bidding process.
6.7 Other E-Procurement Methods

- **Internal marketplace**: The aggregated catalogs of all approved suppliers combined into a single internal electronic catalog.
- Benefits of internal marketplaces:
  - Corporate buyers quickly find what they want, check availability and delivery times, and complete an electronic requisition form.
  - Reduce number of regular suppliers.
  - Easy financial controls.

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6.8 Infrastructure for B2B

- Major infrastructures needed for B2B marketplaces:
  - **Telecommunications networks and protocols**
  - **Server(s)** for hosting the databases and the applications.
  - **Software** for various activities for executing the sell-side activities, buy-side activities, PRM, and building a storefront.
  - **Security** for hardware and software.

- Other E-Procurement Methods (cont.):

  - **Group purchasing**: The aggregation of orders from several buyers into volume purchases so that better prices can be negotiated.
    - **Internal aggregation**: Companywide orders are aggregated using the Web and replenished automatically.
    - **External aggregation**: Provide SMEs with better prices, selection, and services by aggregating demand online and then either negotiating with suppliers or conducting reverse auctions.

- Other E-Procurement Methods (cont.):

  - **Electronic data interchange (EDI)**: The electronic transfer of specially formatted standard business documents, such as bills, orders, and confirmations sent between business partners.
  - **Value-added networks (VANs)**: Private, third-party managed networks that add communications services and security to existing common carriers, used to implement traditional EDI systems.
Other E-Procurement Methods (cont.)

**Web-based EDI Services**

- Internet-based (Web) EDI: EDI that runs on the Internet and is widely accessible to most companies, including SMEs

**Other E-Procurement Methods (cont.)**

- Integration
  - Integration with existing internal infrastructure and applications
    - EC applications of any kind need to be connected to the existing internal information systems
  - Integration with business partners
    - EC can be integrated more easily with internal systems than with external ones

**Other E-Procurement Methods (cont.)**

- The role of standards and XML in B2B integration
  - XML (eXtensible Markup Language): Standard (and its variants) used to improve compatibility between the disparate systems of business partners by defining the meaning of data in business documents
  - XML can overcome EDI barriers for three reasons:
    1. XML is a flexible language, therefore it expands the rigid ranges of EDI
    2. Message content can be easily read and understood by people using standard browsers
    3. XML-based technologies require less-specialized skills

**Other E-Procurement Methods (cont.)**

- Web services: An architecture enabling assembly of distributed applications from software services and tying them together

**Managerial Issues**

1. Can we justify the cost of B2B applications?
2. Which vendor(s) should we select?
3. Which B2B model(s) should we use?
4. Should we restructure our procurement system?
5. What restructuring will be required for the shift to e-procurement?
6. What integration would be useful?
7. What are the ethical issues in B2B?
8. Will there be massive disintermediation?
Summary

1. The B2B field: EC activities between businesses
2. The major B2B models: sell-side; buy-side; trade exchanges; collaborative commerce
3. The characteristics of sell-side marketplaces: online direct sale by one seller to many buyers
4. Sell-side intermediaries: provide value-added services to manufacturers and business customers
5. The characteristics of buy-side marketplaces and e-procurement: expedite purchasing, save on item and administrative costs, and gain better control over the purchasing process.

Summary (cont.)

6. B2B reverse auctions: tendering system used by buyers to collect bids electronically from suppliers
7. B2B aggregation and group purchasing: increasing the exposure and the bargaining power of companies can be done by aggregating either the buyers or the sellers.

End of Chapter 6