B2B E-Commerce

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Defining B2B Commerce

- Before Internet, B2B transactions called just 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 (Internet-based B2B commerce): That portion of B2B commerce that is enabled by the Internet
The Evolution of B2B Commerce

- B2B commerce has evolved over a 35-year period
- 1970s: Automated order entry systems used telephone modems to send digital orders (e.g., Baxter Healthcare)
  - Seller-side solution (owned by suppliers, seller-biased, show goods only from single seller)
- Late 1970s: Electronic data interchange (EDI) -- communications standard for sharing business documents and settlement information among a small number of firms
  - Buyer-side solution (owned by buyers, buyer-biased, aim to reduce procurement costs for buyer)
  - Often referred to as hub-and-spoke system
  - Generally serves a vertical market
Electronic Data Interchange (EDI)

- EDI: broadly defined communications protocol for exchanging documents among computers
- Has evolved significantly
  - 1970s-1980s: focused on document automation (Stage 1)
  - Early 1990s: Began to focus on document elimination (Stage 2)
  - Mid 1990s: Movement toward a continuous replenishment/access model
- Today: should be viewed as a general enabling technology that provides for the exchange of critical business information between computer applications supporting a wide variety of business processes
The Evolution of EDI as a B2B Medium

1. **Document Automation**
   - Supplier Computer
   - Purchase Orders Payments
   - Shipping Notices Price Schedules Invoices
   - Firm Computer

2. **Document Elimination**
   - Supplier Computer
   - Production Schedule Delivery Schedule
   - Payment Schedule Shipping Orders
   - Firm Computer

3. **Continuous Replenishment**
   - Supplier A Production System
   - Supplier B Production System
   - Supplier C Production System
   - Supplier D Production System
   - Firm Computer
   - Continuous Replenishment
   - Payment on Use
   - Shipping Data
The Evolution of B2B Commerce (cont’d)

- 1990s: B2B electronic storefronts -- online catalogs of products made available to the public marketplace by a single supplier
- Late 1990s: Net marketplaces – bring hundreds to thousands of suppliers and purchasers into a single Internet-based environment to conduct trade
- Late 1990s: Private industrial networks – Internet-based communication environments that extend beyond procurement to encompass collaborative commerce
Standards Evolution

- Web Services
- RosettaNet
Web Services Process Model

[Diagram showing the process model for web services, including service provider, service consumer, application, web interface, web server, tools, directory service, directory provider, description, query, and result.]
RosettaNet-Web Services Evolution
Web services can support RosettaNet PIPs as services with the following support:

- Document security
- Document legality
- Partner registration and discovery
- Business process sequencing
Motivation

Competitive and economic pressure driving
- Improved efficiency
- Partnering throughout product life cycle
- Dynamic B2B communications
- Open industry standards
  - Document-centric interaction model
  - Application-based interaction model
Procurement Process & Supply Chain

- Procurement process: The way firms purchase the goods they need to produce the goods they sell
- Supply chain: Firms that purchase goods, their suppliers, and their suppliers’ suppliers
- Includes not just the firms themselves, but also the relationships among them and the processes that connect them
Procurement Process

- **Search**
  - Catalogs
  - Internet
  - Salespersons
  - Brochures
  - Telephone
  - Fax

- **Qualify**
  - Research
  - Credit History
  - Check with Competitors
  - Telephone Research

- **Negotiate**
  - Price
  - Credit Terms
  - Escrow
  - Quality Timing

- **Purchase Order**
  - Order Product
  - Initiate Purchase Order (PO)
  - Enter into System
  - Mail PO

- **Invoicing**
  - Receive PO
  - Enter into Financial System
  - Enter into Production System
  - Send Invoice
  - Match with PO Internal Review
  - Enter into Warehouse System

- **Shipping**
  - Enter into Shipper’s Tracking System
  - Ship Goods
  - Deliver Goods
  - Enter into Tracking System

- **Remittance Payment**
  - Receive Goods
  - Enter Shipping Documents into Warehouse System
  - Verify and Correct Invoice
  - Resend Invoice Cut Check
  - Add Corrected Invoice to Back Office Systems
The Multi-Tier Supply Chain

Figure 12.5, Page 712
Growth of B2B Commerce 2001-2006

Figure 12.2, Page 706

![Bar chart showing the growth of B2B commerce from 2001 to 2006. The chart includes data for net marketplaces, private industrial networks, and traditional B2B trade. The years 2001 to 2006 are shown on the x-axis, with revenue in billions on the y-axis. The revenue data for each year is as follows:

- 2006: $16,950 billion (Net marketplaces: $11,500 billion, Private industrial networks: $3,543 billion, Traditional B2B trade: $1,908 billion)
Industry Forecasts for Internet-Based B2B Commerce 2001-2006

Figure 12.3, Page 708
Three Phases of Electronic Commerce

- Electronic Data Interchange
- Electronic Marketplaces
- Agent-Mediated Electronic Commerce
Pure Types of Net Marketplaces

Figure 12.11, Page 725

WHAT BUSINESSES BUY

Indirect Inputs

E-distributor
Grainger.com
MRO.com
FindMRO.com
Equalfooting.com
Staples.com

Direct Inputs

Independent Exchanges
Freemarkets.com
Exchange.e-steel.com
GEPolymerLand.com
MetalSite.com
Farm.com

E-procurement
Ariba Supplier Network
Global Trading Web
(CommerceOne)
Click2procure
(Siemens)

Industry Consortia
Covisint.com
ChemConnect.com
Exostar.com
WWRE.com
GNX.com

HOW BUSINESSES BUY

Spot Purchasing

Long-term Sourcing

Horizontal Markets

Vertical Markets
B2B Auctions

- **FairMarket**: auction hosting
  - Microsoft Small Business Portal
- **Ariba**
- **FreeMarkets OnLine**
  - Interactive bidding
  - An open exchange for suppliers/buyers
- **Projected revenues in 2005**
  - C2C auctions: $15.4B
  - B2C auctions: $11.4B
  - B2B auctions: much bigger??
E-commerce in Action: FreeMarket Inc.

- One of the leading B2B exchanges, generating revenues of $83 million in 2000
- Market-making services enable industrial buyers of direct goods to find, screen, and qualify suppliers, and then to negotiate prices and term through a dynamic, real-time, comprehensive bidding and auction process
- Offers proprietary technology, technical support facilities, market-making services, and access to a global database of suppliers
FreeMarket: Stock Price (FMKT)

Closing price: $6.65  
52-wk Range 5.30 -10.45

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http://finance.yahoo.com/
FreeMarket: Five Year History
E-commerce in Action: Ariba

- An e-procurement Net marketplace
- A leading B2B software platform and software provider
  - Ariba Buyer automates the procurement business process within single firms
  - Ariba Marketplace and Ariba Dynamic Trade are software tools that permit users to establish B2B marketplaces internally on their corporate intranets, or externally on the public Internet
  - Ariba Commerce Services Network is an Internet-based e-procurement Net marketplace that aggregates catalogs of hundreds of suppliers and provides corporate buyers with a Web interface to procurement, payment, and shipping support services
Ariba: Stock Price (ARBA)

Closing price: $2.01  52-wk Range 1.95 – 4.00
Ariba: Five Year History
Insight on Technology: i2 Stumbles with Nike, Regains Footing with Clarks

- i2 Technologies attempted to implement a new order-driven Web-based supply chain management system for Nike.
- The implementation was plagued with problems:
  - Complex application with large SKU count, large part number count, over 100 manufacturing steps, wide variety of information sources, and a global supply and distribution network with many Far Eastern contractors.
  - Nike management chose not to follow standard implementation of i2 supply chain template; instead tried to change software to fit its processes, with a “Big Bang” conversion.
- However, despite disastrous start, by 2003, able to work out problems.
- i2 learned from its experience with Nike and had much more success installing a similar system for Clarks.
Covisint LLC: The Mother of All Net Marketplaces

- Industry consortium created by DaimlerChrysler, General Motors and Ford; now run by independent board and advisory council of large OEMs and suppliers
- Original vision: Single industry-wide electronic marketplace for direct and indirect auto industry supplies
- As of May 2003, 92,000 active users and more than 20,000 registered customer companies
- Most suppliers are still large Tier 1 suppliers; original goal was to deploy Covisint to Tier2/Tier3 suppliers as well, but many of these firms have resisted joining thus far
- New vision: Covisint as an enabler of industry-wide standards that are implemented by individual manufacturers
The Reality

- The majority of B2B procurement processes still take place “off-line”.
  - The reason: companies quickly discovered that online procurement was more complicated than they'd initially thought.
- A Wharton Business School study found that
  - of the 1,500 independent B2B exchanges in April 2000, only 43% were still in business by July 2002.
  - The number would continue to dwindle in 2003.
- Covisint sold its auction business to FreeMarkets in December 2003.
- CompuWare bought Covisint in February 2004.
Conclusion

- The market potential of B2B e-Commerce has not materialized.
- Major shakeup is still underway.
- E-business readiness is a pre-requisite for B2B e-commerce deployment.
- Which vertical market may benefit the most?