Chapter 1

E-Commerce and E-Business
Learning Objectives

• Understand B-to-C and B-to-B E-Commerce.
• Identify Drivers to two types of E-Commerce.
• Activities in E-Commerce.
• Describe features of E-Business.
• Appreciate E-Governance.
Overview

• What is E-Commerce?
• Types of E-Commerce
• Drivers, Activities, Values and Models of B-to-C E-Commerce
• History, Drivers, Activities, Values and Models of B-to-B E-Commerce
• E-Business
• E-Governance
What is E-Commerce?

- Business activities running over the Internet and World Wide Web platform
- Use of TV and toll-free telephones in business are not usually associated with e-commerce
- Depending on the situation, electronic data interchange (EDI) may or may not be associated with e-commerce. EDI is used for business-to-business transactions
- Examples of e-commerce:
  - Buying books on Amazon.com
  - Promoting cars on Toyota.com
  - Participating in auctions at eBay.com
  - Customer support at Fedex.com
  - Industrial exchanges such as Covisint.com
Pure Vs. Partial Electronic Commerce

- Three dimensions
  - the product (service) sold [physical / digital];
  - the process [physical / digital]
  - the delivery agent (or intermediary) [physical / digital]
- Traditional commerce
  - all dimensions are physical
- Pure EC
  - all dimensions are digital
- Partial EC
  - all other possibilities include a mix of digital and physical dimensions
The Dimensions of Electronic Commerce

Electronic commerce areas

Virtual product

- Virtual delivery agent
- Virtual process
- Digital process
- Physical process

Physical commerce

- Physical agent
- Digital agent
- Virtual agent

Digital Product

- Digital Product
- Physical Product
- Traditional commerce

The core of electronic commerce
Electronic Markets

- A market is a network of interactions and relationships where information, products, services, and payments are exchanged.
- The market handles all the necessary transactions.
- An electronic market is a place where shoppers and sellers meet electronically.
- In electronic markets, sellers and buyers negotiate, submit bids, agree on an order, and finish the execution on- or off-line.
Electronic commerce network (Infrastructure)

- Product/service information request
- Purchase request
- Payment or payment advice

Response to information request
- Purchase acknowledgment
- Shipping notice
- Purchase/service delivery (if online)
- Payment acknowledgment

Payment approval
- Electronic transfer of fund

Electronic Markets
- Electronic Markets

Shopper/Purchaser's Bank
- Payment remittance notice
- Electronic transfer of funds

Transaction Handler’s Bank (Automated Clearing House)
- Electronic transfer of funds

Seller/Supplier’s Bank
- Response to fulfillment request
- Shipping notice

Shopper/Purchaser

Electronic Market (Transaction Handler)
- Purchase fulfillment request
- Purchase change request

Electronic Markets
- Payment approval
- Electronic transfer of fund

Seller/Supplier
Types of E-Commerce

- Business-to-consumer E-Commerce
  - Serves direct consumers. Important activity is buying
    - Other activities: promotion, ordering, payment

- Business-to-business E-Commerce
  - Serves businesses. Important activity is purchasing. Purchasing is differentiated from buying in that instead of individuals departments are involved, formal processes are followed, high monetary values may be involved, and complex negotiations and contracts may take place
  - Products include office supplies, raw materials, manufacturing equipment, and power plants, where the person who consume the items are different from those that authorize the purchase.
History to B2C E-Commerce

• History:

  – Internet is not the first platform to enable consumers to shop from home using telecommunication medium.
  – Most of these efforts did not succeed.
  – For example, in 1984, Chase Manhattan launched a home banking system with AT&T.
    • Display customer’s account on TV using a AT&T device
    • AT&T device resemble d a keyboard with a card reader
    • Consumers reacted enthusiastically in laboratory tests, but were turned off by the bulky wires on the floor of the living room.
Drivers to B2C E-Commerce

- A framework to predict the acceptance or rejection of a new technological platform, introduced by Mercer Consulting, consists of 4 elements:
  - Affordability (Social driver)
    - Switching cost
    - Available substitutes
  - Convenience (Social driver)
    - Saving in time and labor
    - Change from existing habits
    - Extent of training required
  - Stability (Technological driver)
    - maturity
  - Availability (Technological driver)
    - Available in a variety of settings
    - Less restriction to special environment
Activities: B2C E-Commerce

- Advertisement (promotion)
  - Advertising expenditures are expected to increase from $3.3 billion in 1999 to $33 billion by 2004 (The Economist, 1999). By 2004, about 8% of advertising are spent on Internet.
  - Formats: banners, buttons, superstitials, rich-media banners
  - Limitations:
    1. Small banner vs. full page advertisements on newspaper.
    2. Web surfer is “out of control”. Users may skip advertisement by a mouse click.
    3. Cost per thousand exposure (CPM) does not reflect the effectiveness of a medium
  - Advantages:
    1. Interactive. Users are “in control”.
    3. Provides community-based sites. Users may exchange comments.
Activities: B2C E-Commerce

• Ordering
  – 3 Cs:
    • Content-oriented: university sites
    • Commerce-oriented: Amazon.com
    • Community-oriented: IVillage.com
  – Commerce-oriented sites provide the facility to place orders: access databases of products, orders, customers, payment information, and shipping alternatives.
  – Transaction sites provide competing prices from other websites using agents.

• Product Delivery
  – Deliver through Internet: software, news, music, etc.
    • Save time and money
  – Deliver through physical mail: books, flowers, computers, etc.

• After-sales Support
  – Through e-mail, search engines, and bulletin boards.
  – Companies are using various technologies, such as customer relationship management software, data mining tools, and personalization tools to develop long-lasting relationships with customers.
  – Over 90% survey report find that Web-based support is a good complement to telephone-based support.
## E-community (virtual community)

<table>
<thead>
<tr>
<th>Motive</th>
<th>Intimacy</th>
<th>Interests</th>
<th>Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction</td>
<td>One-to-one</td>
<td>Many-to-many</td>
<td>One-to-many</td>
</tr>
<tr>
<td>Web content</td>
<td>Member-generated documents and messages</td>
<td>Discussion groups and member-supplied contents</td>
<td>Host-supplied documents</td>
</tr>
<tr>
<td>Autonomy</td>
<td>Member driven</td>
<td>Moderated discussion groups</td>
<td>Host driven</td>
</tr>
<tr>
<td>Technology</td>
<td>E-mail, telephone, chat sessions, virtual postcards, virtual greeting cardings</td>
<td>Bulletin boards, threaded discussion, forums</td>
<td>Web display of documents and multimedia contents; facility to conduct commercial transactions</td>
</tr>
<tr>
<td>Examples</td>
<td>Cupid.com</td>
<td>WELL, GeoCities, Tripod</td>
<td>Most company websites, e.g. Microsofts</td>
</tr>
</tbody>
</table>
Values: B2C E-Commerce

• Creating Business Values
  – Operational excellence
    • Low costs, low overhead, quick response, streamlined process
  – Customer intimacy
    • Establishing lifelong relationships with customers and meeting with individual needs
  – Product and service leadership
    • Continuous innovation in product and service lines
    • Investment in research and development

Content-oriented features ➔ Communication features ➔ Transactional features ➔ Web-enabled core business processes
Values: B2C E-Commerce

• Creating Consumer Values
  – Cost
    • Cost saving, e.g., cheaper books from Amazon.com, auction sites.
  – Choice
    • Wide choice available through single portal.
  – Convenience
    • Purchasing without physically visiting different shops
  – Customization
    • Filters information and news for individuals.
Business Models: B2C

- Business model describes the basic framework of a business
  - Market segments being served. (WHO?)
  - Service being provided. (WHAT?)
  - The means by which the service is being produced. (HOW?)

Business Model of eBay.com......
- Who? Everybody
- What? Any product
- How? Exchange through auction
- Business value? Efficiency + relationship
- Consumer value? Low price + choice

- Pure-play (primarily Internet based)
  - Portal sites/ Advertisements Yahoo.com
  - Auction-based ebay.com
  - Retail Merchants Amazon.com

- Pure-play model did not prove viable
  - The strategy of “getting customers at any cost” did not work.
  - Price to establish a brand name is too high and no commensurate revenue stream because of excessive of competitors
  - It provides good information and experience to traditional brick-and-mortar firms.

- Brick and Mortar (Click and brick)
  - New Channels (disintermediation) Gateway.com
  - Reinforce existing channels
    - Promotion Toyota.com,
    - transaction bn.com
    - support Fedex.com
## Other Business Models

<table>
<thead>
<tr>
<th>Site</th>
<th>Who</th>
<th>What</th>
<th>How</th>
<th>Business Value</th>
<th>Customer Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBay.com</td>
<td>Everybody</td>
<td>any product</td>
<td>Allow individual to trade goods among themselves through auctions</td>
<td>• Efficient execution</td>
<td>• Good price</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Customer relationship</td>
<td>• Access to uncommon items</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Shopping convenience</td>
</tr>
<tr>
<td>MySimon.com</td>
<td>Everybody</td>
<td>Any product</td>
<td>Provide comparative prices for goods sold on the web</td>
<td>• Customer service and relationship</td>
<td>• Best price</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Shopping convenience</td>
</tr>
<tr>
<td>Toyota.com</td>
<td>Potential Toyota car buyers</td>
<td>Only Toyota automobiles</td>
<td>Provide an alternative channel for promotion</td>
<td>• Customer relationship and customer support</td>
<td>• Easy access to relevant information</td>
</tr>
<tr>
<td>WSJ.com</td>
<td>Individuals too busy to read their newspapers</td>
<td>Business information</td>
<td>Provide news on the Web and through e-mails</td>
<td>• Additional source of revenue through subscription</td>
<td>• Convenience of having news tailored to one’s needs</td>
</tr>
</tbody>
</table>
History: B2B E-Commerce

History
• Inter-organizational systems
  – American Airlines
  – American Hospital Supply

• Electronic Data Interchange

• Dramatically reduce costs across the supply chain.
• Reshape relationships with suppliers by integrating production and shipment plans.
• Forrester Research predicts that B2B e-commerce in US will reach $1.3 trillion by 2003.
Drivers: B2B E-Commerce

- Globalization
  - WTO’s new foreign trade rules are opening local economies around the world to international suppliers
- Reduced barriers to entry
- De-regulation
  - Increased number of suppliers
- Demanding consumers and price pressures
- Pressure to re-organize the value chain
• Advances in communication and processing technologies enables reconfiguration of value chains
  – If customer can contact manufacturers directly, why would they need wholesaler and retailers?

• Traditionally, every member company in the value chain has been running its own business processes on computers that were isolated from each other.
  – In the 80s, EDI allows computers to talk to each other across company boundary
  – The Internet permit textual data and complex data (catalogs, drawings, and specifications) to be exchanged.
Activities: B2B E-Commerce

**Market Intelligence**
- Gathering complex information of products
  - specifications, services, quality, warranties

**Prepurchasing**
- Request of proposal (RFP)
- Seeking a request for quotation (RFQ)
- Providing specifications to vendors
- Negotiating contract conditions

**Purchasing**
- Placing order
  - agrees on deliveries and acknowledge purchase order

**Shipping and Receipt of Goods**
- Inform buyers shipment schedules and
- Obtains proper receipt of goods

**Paying Vendors**
- Payment through banks according to the contract
Paper-based B2B Commerce

Purchasing Applications

Order Processing Applications

By US Mail or Fax

Purchase Order

Order Entry Process

Fax
EDI-based B2B Commerce

Diagram:

- Purchasing Application
- Order Entry Application
- EDI Program
- Value Added Network
- EDI File
- EDI File
Models: B2B E-Commerce

- Pure Play (Primarily Internet)
  - Electronic markets iMark.com
  - Web Malls www2.mallpark.com
  - Web Hosting Mindspring.com

- Brick and Mortar
  - Suppliers’ Web Covisint.com
  - Promotion Mysap.com
  - Logistics Ec.ups.com
  - After Sales Cisco.com
# Business Models for B2B EC

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<tr>
<td>MySap.com</td>
<td>Customers and consultants for SAP products</td>
<td>Provide details about SAP products and available consulting services</td>
<td>Users and prospective users can get information from the website and communicate with each other</td>
<td>Customer relationship</td>
<td>Access to information about products and consultants</td>
</tr>
<tr>
<td>Fedex.com</td>
<td>Companies having account with or individuals using Fedex’s services</td>
<td>Any products</td>
<td>Customers can access Fedex’s information systems to retrieve data relevant to them</td>
<td>•Customer service and relationship  •Efficiency and cost saving sin providing customer support</td>
<td>Convenience and access to operational information</td>
</tr>
</tbody>
</table>

- **Value**
  - **Customer**
    - Access to information
    - About products and consultants
  - **Value**
    - Convenience
    - Access to operational information
Definition: E-Business

- IBM: E-Commerce plus all activities that make e-commerce possible
  - Use of Internet technologies to improve and transform key business processes
- Kalakota: Fusion of processes, applications and structures to create high performance
- AMR: set of activities-- supply chain, enterprise management and customer management
Activities: E-Business

- **Supply Chain Management**
  - Logistics, Distribution planning, Demand planning, Forecasting, Warehouse management

- **Enterprise Management**
  - Finance and Administration, Operations, Procurement, Human Resources, Inventory management, R & D

- **Customer Management**
  - Sales channel management, Marketing automation, Customer relationship management, Personalization
E-Government

Providing services to citizens through web-sites

- Citizens

- Businesses

- State Employees
  - Rules, regulations, conduct transactions, find information, download forms