E-Commerce Application Development

LECTURE # 2
The Course

**Course Code:** CS-4746

**Course Title:** E-Commerce Application Development

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The E-Commerce Supply Chain

Supply chain management is a key value chain composed of:

- Demand planning
- Supply planning
- Demand fulfillment
Figure 1.4: Supply Chain Management
The E-Commerce Supply Chain (continued)

E-commerce supply chain management allows businesses an opportunity to achieve:

◦ Increased revenues and decreased costs
◦ Improved customer satisfaction
◦ Inventory reduction across the supply chain
Business-to-Business (B2B) E-Commerce

Allows manufacturers to buy at a low cost worldwide

Enterprises can sell to a global market

Offers great promise for developing countries
Business-to-Consumer (B2C) E-Commerce

Convenience

Many goods and services are cheaper when purchased via the Web

Comparison shopping

Disintermediation: elimination of intermediate organizations between the producer and the consumer
Consumer-to-Consumer (C2C) E-Commerce

Often done through Web auction sites such as eBay

Growth of C2C is responsible for reducing the use of the classified pages of newspapers to advertise and sell personal items
Global E-Commerce

**Localization**: adapting an existing U.S.-centric Web site to another language and culture

Steps involved in localization

- Recognizing and conforming to the nuances, subtleties, and tastes of local cultures
- Supporting basic trade laws such as those covering each country’s currency, payment preferences, taxes, and tariffs
- Ensuring that technological capabilities match local connection speeds
Global E-Commerce (continued)

Determine which global markets make the most sense for selling products or services online

Decide whether Web content should be generated or updated centrally or locally
Mobile Commerce

Mobile commerce (m-commerce) relies on the use of wireless devices, such as personal digital assistants, cell phones, and smart phones, to place orders and conduct business.

Issues confronting m-commerce

- User-friendliness of the wireless device
- Network speed
- Security
Technology Needed for Mobile Commerce

Handheld devices used for m-commerce have limitations that complicate their use.

**Wireless application protocol (WAP):** a standard set of specifications for Internet applications that run on handheld, wireless devices.
E-Commerce Applications: Retail and Wholesale

Electronic retailing (e-tailing): the direct sale from business to consumer through electronic storefronts, typically designed around an electronic catalog and shopping cart model.

Cybermall: a single Web site that offers many products and services at one Internet location.

Manufacturing, repair, and operations (MRO) goods and services.
Manufacturing

To raise profitability and improve customer service, many manufacturers move their supply chain operations onto the Internet.

**Electronic exchange**: an electronic forum where manufacturers, suppliers, and competitors buy and sell goods, trade market information, and run back-office operations.
Model of an Electronic Exchange

- Manufacturers
  - Information about raw material needs, purchase orders, shipment notices, payment requests
  - Customer orders, supplier shipment notices

- Shoppers
  - Requests for information, purchase orders, payment information

- Electronic Exchange
  - Manufacturer’s orders information about raw material needs
  - Shipment notices for manufacturers, payment requests
  - Payment approval, electronic transfer of funds
  - Payment request

- Suppliers
  - Shipments

- Manufacturer’s Bank
  - Payment approval, electronic transfer of funds

- Shopper’s Bank
  - Payment request

- Supplier’s Bank
Marketing

**Market segmentation:** the identification of specific markets to target them with advertising messages

**Technology-enabled relationship management:** use of detailed information about a customer’s behavior, preferences, needs, and buying patterns to set prices, negotiate terms, tailor promotions, add product features, and otherwise customize the entire relationship with that customer
Investment and Finance

Online stock trading

Online banking
Key Technology Infrastructure Components

- Network
  - Internet
  - Value-added network
  - Virtual private network

- High-speed connection to network
- E-commerce software
- Server software
- Server operating system
- Web server hardware
Hardware

Storage capacity and computing power required of the Web server depends on:

- Software that will run on the server
- Volume of e-commerce transactions

Website hosting
Web Server Software

Security and identification

- Web sites must be designed to protect against attacks
- Denial-of-service (DOS) attack

Retrieving and sending Web pages

Web site tracking
Web Server Software (continued)

Web site development

Web page construction

- Static Web page
- Dynamic Web page
E-Commerce Software

Catalog management

Product configuration

Shopping cart facilities

E-commerce transaction processing

Web traffic data analysis
Electronic Shopping Cart

Search for products, brands and categories

FLASH SALE
IN IT TO WIN IT
UP TO 66% OFF
ON SPORTS
6PM - 9PM
SHOP NOW

TOP BRANDS  FASHION BRANDS  ELECTRONICS BRANDS

SAMSUNG  mi  Infinix  HUAWEI  HP

Dell  SONY  Haier  ORIENT  TCL

MEGA DEALS
UP TO 67% OFF
E-Commerce Transaction Processing

**E-commerce transaction processing software:** connects participants in the e-commerce economy and enables communication between trading partners, regardless of their technical infrastructure.

Fully automates transaction processes from order placement to reconciliation.

**Web site traffic data analysis software:** processes and analyzes data from the Web log file to provide useful information to improve Web site performance.
Electronic Payment Systems

**Digital certificate**: an attachment to an e-mail message or data embedded in a Web page that verifies the identity of a sender or a Web site

**Certificate authority (CA)**: a trusted third party that issues digital certificates

**Secure Sockets Layer (SSL)**: a communications protocol used to secure sensitive data

**Electronic cash**: an amount of money that is computerized, stored, and used as cash for e-commerce transactions
Electronic Payment Systems (continued)

**Electronic wallet**: a computerized stored value that holds credit card information, electronic cash, owner identification, and address information.

- Credit card
- Charge card
- Debit card
- Smart card
Threats to E-Commerce

E- and m-commerce incidents

Theft of intellectual property

- **Intellectual property**: music, books, inventions, paintings, and other special items protected by patents, copyrights, or trademarks

- Patents on business processes
Fraud

**Phishing**: bogus messages purportedly from a legitimate institution to pry personal information from customers by convincing them to go to a “spoof” Web site

Online auction fraud

**Spam**: e-mail sent to a wide range of people and Usenet groups indiscriminately
Fraud (continued)

Pyramid schemes

Investment fraud

Stock scams
Invasion of Consumer Privacy

**Online profiling:** the practice of Web advertisers’ recording online behavior to produce targeted advertising

**Clickstream data:** data gathered based on the Web sites visited and the items clicked on

**Safe harbor principles:** principles that address the e-commerce data privacy issues of notice, choice, and access
Decide which tasks the site must accomplish

An effective Web site creates an attractive presence and meets the needs of its visitors

It may be necessary to redefine your site’s business model to capture new business opportunities
Putting up a Web Site

Web site hosting companies: companies that provide the tools and services required to set up a Web page and conduct e-commerce within a matter of days and with little up-front cost

Storefront broker: companies that act as middlemen between your Web site and online merchants that have the products and retail expertise
Building Traffic to Your Web Site

Obtain and register a domain name

Make your site search-engine-friendly

- **Meta tag**: a special HTML tag, not visible on the displayed Web page, that contains keywords representing your site’s content, which search engines use to build indexes pointing to your Web site

Web site traffic data analysis software
Maintaining and Improving Your Web Site

Be alert to new trends and developments in e-commerce

Be prepared to take advantage of new opportunities

**Personalization:** the process of tailoring Web pages to specifically target individual consumers

- Explicit
- Implicit
Summary

In business-to-consumer (B2C) e-commerce, customers deal directly with the organization.

In business-to-business (B2B) e-commerce, the participants are organizations.

In consumer-to-consumer (C2C) e-commerce, the participants are individuals.

A multistage model for e-commerce includes search and identification, selection and negotiation, purchasing, product or service delivery, and after-sales service.
Summary (continued)

Supply chain management is a key value chain composed of demand planning, supply planning, and demand fulfillment.

Mobile commerce (m-commerce) uses wireless devices to place orders and conduct business.

Electronic retailing (e-tailing) is the direct sale from business to consumer through electronic storefronts.

A digital certificate is an attachment to an e-mail message or data embedded in a Web page that verifies the identity of a sender or a Web site.
Summary (continued)

Threats to e-commerce include e- and m-commerce incidents, theft of intellectual property, fraud, and invasion of consumer privacy

Strategies for successful e-commerce

- Developing an effective Web presence
- Putting up a Web site
- Building traffic to your Web site
- Maintaining and improving your Web site