Software for E-Commerce
Learning Outcomes

- Basic functions of electronic commerce software
- Advanced functions of electronic commerce software
- Electronic commerce software for small and mid-sized businesses
- Electronic commerce software for medium-sized to large businesses
- Electronic commerce software for large businesses that have an existing information technology infrastructure
Basic Functions

All electronic commerce solutions must at least provide:

- A catalogue
- Shopping cart capabilities
- Transaction processing
Catalogue

- A static catalog is a simple list written in HTML that appears on a Web page or series of Web pages
- A dynamic catalog stores the information about items in a database
- Sites should also provide a search engine that allows customers to enter descriptions to quickly find an item
- Rule: Never stand in the way of a customer who wants to buy something!
Displaying the catalogue

Figure 9-1  Small electronic commerce site
Shopping Cart

- The web has no memory!
- Simple static HTML forms can be used for online shopping
- A more advanced way to shop online is by using a shopping carts
- Shopping cart software is now standard with most e-commerce solutions
Using a form

Figure 9-2 Using a form to enter an order
Shopping Cart

Figure 9-3  Shopping basket at Buy.com
Why we need a Shopping Cart?

- The Web is a stateless system unable to remember anything from one transmission or session to another.
- The shop must distinguish one shopper from another.
- Three ways to add persistence: More often to uniquely identify users and to store information about their choices, e-shops create and store (in the customer browser) cookies.
Transaction Processing

- Transaction processing occurs when the shopper proceeds to the virtual checkout counter.
- Transaction processing is the most complex part of the selling online.
- Must calculate price, volume discounts, sales tax, and shipping costs.
- Sales tax may vary in different contexts.
- Other restrictions may apply.
- Must calculate delivery costs.
The e-shop software should also connect to accounting and inventory systems so that Web sales can be entered automatically.

Connections between electronic commerce software and the enterprise resource planning software are handled by a separate type of software called middleware.

Major middleware vendors include BEA Systems, Broadvision, Digital River, and IBM Tivoli Systems.
A program that performs a specific function, such as creating invoices, is called an application program, application software, or an application.

An application server is software that takes the request messages received by the Web server and performs some kind of action based on the contents of these messages.

The actions that the application server software perform are determined by the rules used in the business.

These rules are called business logic.
Application Servers

- Application server software may be grouped into two types: page-based and component-based.
- Page-based technologies deal with pages generated by scripts that include the rules for presenting data on the Web page following the business logic.
- Common page-based systems include Macromedia’s ColdFusion, Java Server Pages, Microsoft Active Server Pages, and PHP.
Application Servers

- Component-based technologies separate presentation logic from business logic.
- Each component of logic is created in its own module.
- Common component-based systems include Enterprise JavaBeans, Microsoft Component Object Model, and the Common Object Request Broker Architecture.
Application Servers

- Application servers usually obtain the business logic information that they use to build Web pages from databases.
- A database manager is software that stores information in a highly structured way.
- Large information systems that store the same data in many different locations are called distributed information systems.
Database Servers

Figure 9-6 MySQL home page
Web Services

- Web services are a self-contained, modular unit of application logic that provides some businesses functionality to other applications through an Internet connection.

- They use a specific set of standards known by their acronyms:
  - SOAP
  - UDDI
  - WSDL
Systems for SMEs

- One alternative to ISP hosting services are ASPs, which provide a connection to the Internet just as ISPs do.
- They also provide application server software, database management software, and electronic commerce expertise.
- Shopcreator is an example of an e-commerce ASP.
Systems for SMEs

- Basic ASPs offer free or low-cost e-commerce software
- These are for sites with fewer than 50 for-sale items and have relatively low transaction volumes
- Examples include BizLand.com and HyperMart
Basic packages are free or low-cost electronic commerce software supplied by the Web host for building electronic commerce sites that will be kept on the host’s server.

Services in this category usually cost less than a few hundred pounds per month, and the software is available on the host site, allowing companies to immediately begin building and storing a storefront on the host’s server.
Shared Mall-Style Hosting

- Shared hosting sites provide online stores with good services, good Web creation tools, and little or no banner advertising clutter.
- Web hosts in this group charge a monthly fee, a setup fee, and may also charge a percentage of or fixed amount for each customer transaction.
- Mall-style hosts provide shopping cart software or the ability to use another vendor’s shopping cart software.
Shared Mall-Style Hosting

- Mall-style hosting also offers transaction-processing through one of a few merchant services.
- These merchant services allow customers to choose to purchase their goods and services with a credit card, electronic cash, or other form of payment.
- Quality Web hosts in this category include Bigstep, Yahoo! Store, FedEx eCommerce Builder, and eBay Stores.
Shared Mall-Style Hosting

- Electronic commerce stores get a variety of services for a low monthly fee.
- Web hosting customers have their own domain name and IP address.
- Advantages of a shared Web host over dedicated hosting or self-hosting:
  - Low setup fee
  - No staff and capital costs
  - Free technical support
Shopcreator Apex Store

- Shopcreator Apex Store is a good value among full-service shared hosting sites
- Merchants can create, change, and maintain their Shopcreator storefronts through a Web browse
- On its own site, Shopcreator holds all the stores’ pages in a proprietary format
- Shopcreator’s management page contains many management, reporting, and global site setting tools
Bigstep.com provides a well-designed storefront package without charging hosting fees.

Bigstep.com enables merchants to create, change, and maintain a storefront through a Web browser.

Bigstep.com’s reports provide data mining capabilities.

Data mining can help businesses find customers with common interests.
Bigstep.com’s reports can answer the following questions:

- How many visitors are coming to the site?
- What is the average length of stay for each visitor on each page?
- Which pages lead to purchases?
- What advertisements or links have brought qualified visitors to the page or site?
- What is the average number of pages that each visitor views?
- Are repeat customers attracted to this site?
Estimated Operating Expenses

- The first-year operating costs can vary depending on the Web host selected.
- A good guideline for processing fees is to multiply your expected annual gross sales by 3%.
- Setup and Web site maintenance costs include: equipment, communications, physical location, and staff.
Systems for Large Businesses

- Medium-sized packages allow the merchant to have explicit control over merchandising choices, site layout, internal architecture, and remote and local management options.
- Midrange software has connectivity with database systems and the store’s catalog information.
- Intershop Enfinity, WebSphere, and Commerce Server 2000 are examples of this type of software.
Intershop Enfinity

- Intershop Enfinity is produced by Intershop Communications Inc.
- This software provides:
  - search and catalog capabilities
  - electronic shopping carts
  - online credit card transaction processing
  - connection to existing business systems and databases, such as DB2 and Oracle
- It has setup wizards and catalog and data management tools
IBM WebSphere Commerce

- IBM produces the WebSphere Commerce Suite
- It comes complete with catalog templates, setup wizards, and advanced catalog tools
- It can be used both for B2B and B2C applications
- This system runs on AIX, Linux, OS/400, Solaris, Windows 2000, and Windows NT operating systems.
MS Commerce Server 2002

- Microsoft created Commerce Server 2002

- Commerce Server 2002 provides tools for:
  - User profiling and management
  - Transaction processing
  - Product and service management
  - Target audience marketing
Systems for Corporations

- Enterprise-level commerce software is called e-business software.
- E-business software interacts with a wide variety of existing back office systems, including database, accounting, and ERP systems.
Enterprise Solutions

- An enterprise-scale solution may integrate:
  - Domain Name System (DNS)
  - SMTP servers to handle e-mail
  - Web server
  - Application servers
  - Database server
  - Security mechanisms
Enterprise Solutions

Examples of e-business systems:
- IBM’s WebSphere Commerce Business Edition
- Oracle’s E-Business Suite
- Broadvision One-To-One Commerce
- Transact
The goal of CRM is to understand each customer’s specific needs and then customize a product or service so that it meets those needs.

CRM software must obtain data from operations software that conducts activities, such as sales automation, customer service center operations, and marketing campaigns.

Siebel Systems’ E-Business 7 is one of the leading comprehensive CRM packages.

Oracle Global CRM, PeopleSoft CRM, and MySAP CRM are other CRM products.
Supply Chain Management

SCM software helps companies to coordinate planning and operations with their partner in the industry supply chains of which they are members.

The 2 major firms that offer SCM software are:

- i2 Technologies: includes components that manage demand planning, supply planning, and demand fulfillment.
- Manugistics: includes a constraint-based master planning module that controls the other elements of the system.
Content Management

- Content management software helps companies control the large amounts of text, graphics, and media files that have become a key part of doing business.

- The 3 leading companies that provide these tools are:
  - Documentum
  - Vignette
  - webMethods
Knowledge Management

- KM software helps manage knowledge, rather than the documentary representations of that knowledge.

- It helps companies do 4 main things:
  - Collect and organize information
  - Share the information among users
  - Enhance the ability of users to collaborate
  - Preserve the knowledge gained through the use of information so that future users benefit.