
## Web Hosting Alternatives

- Self hosting
- Internet Service Provider (ISP) hosting
- Commerce Service Provider (CSP) hosting
  - Shared hosting
  - Dedicated hosting

## Considerations

- What functionality do I need for my website?
- What security concerns do I have?
  - Type of information being stored
- What is the cost of different options?
  - Server cost
  - Security cost
  - Backup and recovery cost
- When deciding which option to use, scalability concerns should be addressed.

## Self Hosting

- When companies run the servers in house
- Most commonly used by large companies
- Must purchase equipment and handle security
  - Server costs
  - Setup and maintenance costs
  - Backup and recovery
  - Others
- Most expensive to implement
- Most secure because you control your data

## ISP Hosting

- Web hosting service provided by your Internet Service Provider (ISP)
- ISP's provide customers with internet service but also have services for web hosting
- Most commonly used by individuals rather than organizations
- Typically used for personal websites
- Becoming less common with the popularity of social networking websites

## CSP Hosting

- Commerce Service Providers (CSP)
  - Offer Web server management
  - Rent application software
    - Databases
    - Shopping Carts
    - Content Management Programs
- A third-party web hosting service
- Often used by small to mid-sized companies
- CSP's handle hosting, maintenance and security of the servers

## Hosting Arrangement

- Shared Hosting
  - Client's website is on a server that hosts other websites
- Dedicated Hosting
  - Service provider makes a web server available to the client that is not shared by other websites
  - Higher level of security
  - More expensive
- What are the advantages and disadvantages of shared versus dedicated hosting?

## Hosting Plan Options

- Web hosting
  - Display web pages and handle web traffic
  - Provide email services
  - Pay for data transfer (site usage)
- Database
  - Dynamic websites that are database driven
- Application server
  - Handle application services (ASP, PHP, Cold Fusion, etc.)
  - More functionality
- Doteasy Web Hosting Services

## eCommerce Solutions

- All eCommerce solutions must provide:
  - Catalog display
  - Shopping cart capabilities
  - Transaction processing
- Larger complex sites may include:
  - Software
    - Adding features, capabilities to basic commerce tools

## Catalog Display

- Catalog organizes goods and services being sold
  - Organizes offerings into departments
  - Web store advantage
    - Single product in multiple categories
- **Catalog:** listing of goods and services
  - **Static catalog:** simple list written in HTML
    - On Web page or series of Web pages
  - **Dynamic catalog:** item information stored in database
    - Separate computer accessible to server running Web site itself (usually)

## Catalog Display

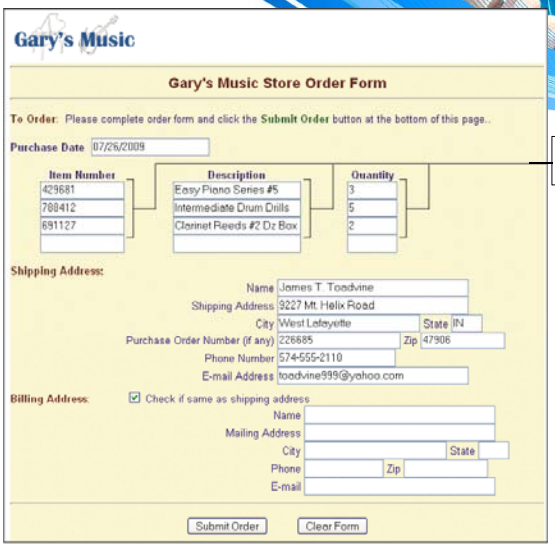
- Large, well-known electronic commerce sites
  - Include many features; are professional looking
  - Alternative ways to find products (search)
  - Wal-Mart
- Small electronic commerce site
  - Simple, inexpensive electronic commerce software
  - Few features, clean look
  - Small Web stores (sell fewer than 100 items)
    - Use simple list of products or categories (static)
    - Item organization not particularly important
    - Can provide item photo
  - BLDG Graphic Design

## Shopping Cart (Early Years)

Early days of electronic commerce…

- Used forms-based shopping
  - Shoppers selected items for purchase by filling out online forms
  - Awkward if ordering more than one or two items
- Problems
  - Need to write down product codes, unit prices, other information before ordering
  - Customers forgot whether submit button clicked
- Confusing and error prone

# Shopping Cart Example




User must enter This data

# Shopping Cart

- Electronic shopping carts
  - Today: electronic commerce standard
  - Keep track of items customer selected
  - Customer may view cart contents, add items, remove items
  - Wal-Mart
- Shopping Cart Development
  - In house development
  - Off-the-shelf (3rd party development)
    - Custom design or standard design
    - Google Checkout
  - Third Party Shopping Cart
    - Pay-Pal

## Shopping Cart Functions

- Web is stateless
  - Unable to remember anything from one session to another
  - To retrieve shopping cart information later
    - Information must be stored explicitly
    - Use cookies
      - Store's customer ID
  - If shopper's browser does not allow cookie storage
    - Electronic commerce software automatically assigns temporary number
    - Some carts can identify by user's IP address
      - Does not work with dynamic IP addressing

## Transaction Processing

- Occurs when shopper proceeds to virtual checkout counter
  - Click checkout button
- Electronic commerce software performs necessary calculations
- Web browser software and seller's Web server software switch into secure communication state
- Most complex part of online sale
  - Web server software must communicate with other software running on seller's other computers

## Transaction Processing

- Most companies use accounting software package
  - Record sales and inventory movements
- Must compute sales taxes and shipping costs
  - Software: update tax rates automatically
  - FedEx and UPS
    - Offer software integrating with electronic commerce software
- Other calculation complications
  - Coupons, special promotions, time-sensitive offers

## Transaction Processing

- 3rd Party Transaction Processing
  - Delegate security and payment collection to 3rd party vendor
  - Fee-per-transaction
  - Ideal for small companies
- Pay-Pal
  - Handles shopping cart and transaction processing for many small to mid-sized companies
- BLDG Graphic Design

## Large Scale eBusiness

Larger, more complex eCommerce sites may use additional software components such as:

- Middleware
- Enterprise application integration
- Web services
- Enterprise resource planning (ERP) software
- Supply Chain Management (SCM) software
- Customer Relationship Management (CRM) software
- Content management software
- Knowledge management software

## Middleware

- Integrates electronic commerce systems with existing company information systems
  - Inventory control
  - Order processing
  - Accounting
- Sources
  - In-house development
  - Purchase customized middleware
- Costs can range from $50,000 to several millions of dollars (Consultant fees consume most of cost)

## Enterprise Application Integration

- Using the internet to integrate business applications with eBusiness solutions
  - Creating invoices
  - Calculating payroll
  - Processing payments received from customers
- Application programs perform specific functions
- Application server takes requests from web server
- Performs business logic
  - Rules used in the business

## Enterprise Application Integration

- Application Integration
  - Creation of links among scattered applications
  - Accomplished by programs transferring information
    - From one application to another
- Page-Based application systems
  - Return pages generated by scripts containing rules
    - Cold Fusion, ASP, PHP
- Component-Based application systems
  - Components based on business logic
    - Enterprise JavaBeans, Component Object Model (COM)
    - Example: Real estate company – Mortgage calculator

## Enterprise Application Integration

- Databases contain business logic information that application servers use
- **Database manager** (software)
  - Stores information in highly structured way
  - Database structure allows database manager software to retrieve database information
  - Smaller electronic commerce sites
    - Low-cost database (Microsoft Access)
  - Larger electronic commerce sites
    - Need power (IBM DB2, Microsoft SQL Server, Oracle)

## Web Services

- A combination of software tools that let application software in one organization communicate with other applications over a network by using a specific set of standard protocols known by their acronyms
  - SOAP (Simple Object Access Protocol)
  - WSDL (Web Services Description Language)
  - UDDI (Universal Description, Discovery, and Integration)
- Web services (another definition)
  - Self-contained, modular unit of application logic
  - Provides business functionality to other applications
  - Through Internet connection

## Web Services

- What Web services can do
  - Offer improved customer service, reduced costs
  - Provide XML data feeds
    - Flow from one application to another
  - Provide data feeds between two different companies
- RSS Feeds
  - Web services used by many individuals
  - Subscribe to news, blogs, and other online content

## Web Services

- How Web services work
  - Key element
    - Programmers write software accessing business application logic units without knowing details
  - Machine-to-machine communication
    - Allows programs written in different languages on different platforms to communicate, accomplish transaction processing, and perform other business tasks
    - Originally accomplished with HTML
    - Implemented with XML today

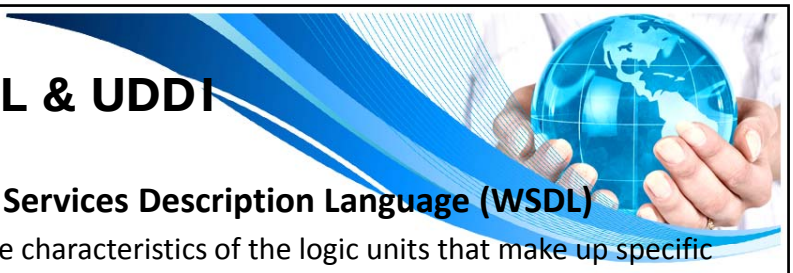
## Web Services

- First Web services
  - Information sources
  - Allowed programmers to incorporate information sources into software applications
- More advanced example
  - Company uses Web services purchasing software to obtain vendor price information
  - Purchasing agent authorizes purchase using software to submit order, track until shipment received
  - Vendor's Web services software checks buyer's credit, contracts with freight company

## Simple Object Access Protocol

- **Simple Object Access Protocol (SOAP)**
- **Web service**
  - Message-passing protocol defining how to send marked up data from one software application to another across a network
- For more information visit:
  - W3C SOAP Page

## WSDL & UDDI



- **Web Services Description Language (WSDL)**
  - The characteristics of the logic units that make up specific Web services
    - Describes logical units characteristics making up specific Web services
- **Universal Description, Discovery, and Integration (UDDI) specification**
  - Set of protocols identifying Web services locations' associated WSDL descriptions

## Web Services

- The future of Web services
  - Web services present a major change in business computing
  - Historically:
    - IT industry resisted standards; used programming languages unable to communicate with each other
    - Large businesses hired armies of programmers
  - Today:
    - Web services gaining momentum
    - Web services are in 25 percent of current data integration projects

## Web Services

- Potential pitfalls
  - Many variations of XML; data partners must agree
  - Software applications becoming dependent on Web services; must include reliable quality of service, service-level agreements
  - Still developing management standards; subscriber needs detailed agreement

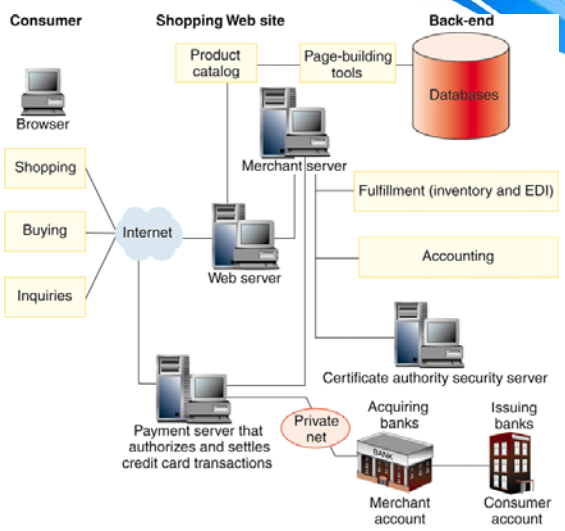
## Enterprise Resource Planning (ERP)

- Software package used to integrate all facets of a business
  - Accounting
  - Logistics
  - Manufacturing
  - Marketing
  - Planning
  - Project management
  - etc.
- Requires several dedicated computers, Web server system, and firewalls

# Enterprise Resource Planning (ERP)

- Integrates other software components together
  - Supply Chain Management (SCM) software:
  - Customer Relationship Management (CRM) software
  - Content management software
  - Knowledge management software
  - Etc.

# Enterprise Resource Planning (ERP)




Enterprise-Class Electronic Commerce Software

## Supply Chain Management

- Companies coordinate planning and operations:
  - With industry supply chains partners
- Two general function types: planning and execution
- SCM planning software
  - Develops coordinated demand forecasts
    - Information from each participant in supply chain
- SCM execution software
  - Tasks: warehouse and transportation management
- Logistics companies can provide these services for your company
- Bluegrass Logistics

## Customer Relationship Management

- Goal
  - Understand each customer's specific needs
  - Customize product or service to meet those needs
- Idea
  - Customer whose needs met exactly
    - Willing to pay more for goods or services
- **Customer relationship management (CRM) software**
  - Obtains data from operations software
  - Gathers data about customer activities
  - Uses data to conduct analytical activities

## CRM Software

- Basic CRM
  - Uses customer information to sell more goods or services
- Advanced CRM
  - Delivers extremely attractive, positive customer experiences
- CRM business importance
  - Maintaining customer loyalty
  - Maintaining positive, consistent contacts at the purchasing company

## Content Management Software

- **Content management software**
  - Controls large amounts of text, graphics, media files
- Rise of wireless devices
  - Content management even more important
- Businesses customize Web pages
- Content management software
  - Test before committing
    - Ensure straightforward software procedures for performing regular maintenance
    - Software should facilitate typical content creation tasks

## Knowledge Management Software

- Systems that help manage knowledge itself
  - Rather than documentary representations of that knowledge
- Four main things
  - Collect and organize information
  - Share information among users
  - Enhance ability of users to collaborate
  - Preserve knowledge gained through information use
    - For future users benefit

## Knowledge Management Software

- Includes tools to read:
  - Electronic documents, scanned paper documents, e-mail messages, Web pages
- Includes powerful search tools
  - Use proprietary semantic, statistical algorithms
- Collects knowledge elements by extracting them from normal interactions users have with information
- Cloud Computing…

## Summary

- Many web hosting alternatives
  - Self Hosting
  - ISP Hosting
  - CSP Hosting
- eCommerce Solutions
  - Catalog display
  - Shopping cart
  - Transaction processing
- Large Scale eBusiness solutions offer more complex software components