Module 6

e-Business and e-Commerce

6.1 e-Business systems

E-Business refers to the use of digital technology and the internet to execute the major business processes in the enterprise. e-Business includes activities for the internal management of the firm and for coordination with suppliers and other business partners. e-business is the use of the internet and other networks and Information Technologies to support e-commerce, enterprise communications and collaboration both within a networked enterprise and with its customer and business partners. e-business includes e-commerce, which involves the buying and selling and marketing and servicing of products, services and information over the internet and other networks.

6.2 e-commerce systems

Electronic commerce encompasses the entire online process of developing, marketing, selling, delivering, servicing, and paying for products and services transacted on internetworked, global marketplaces of customers, with the support of a worldwide network of business partners. Electronic commerce is more than just buying and selling products online. It is the Process of buying, selling, transferring, or exchanging products, information and services through computer networks. It uses Internet and Web to transact business. The fundamental purpose of e-commerce is to execute digitally enabled transactions. It allows a business of virtually any size that is located virtually anywhere on the planet to conduct business with anyone, anywhere. It allows geophysical barriers to disappear, making all consumers as potential customers.
**Scope of e-Commerce**

**Figure 6.1**

Fig 6.1 represents the range of business processes involved in the marketing, buying, selling and servicing of products and services in companies that engage in e-commerce. Companies involved in e-commerce as either buyers or sellers rely on Internet-based technologies and e-commerce applications and services to accomplish marketing, discovery, transaction processing, and product and customer service processes. Electronic commerce systems rely on the resources of the Internet, intranets, extranets, and other computer networks. Electronic commerce can include:

- Interactive marketing, ordering, payment, and customer support processes at e-commerce sites on the World Wide Web
- Extranet access of inventory databases by customers and suppliers
- Intranet access of customer relationship management systems by sales and customer service reps
- Customer collaboration in product development via Internet newsgroups and E-mail exchanges

**Why e-commerce is different**

- Ubiquity- available everywhere at all times
- Global Reach- potential market size for e-commerce is roughly equal to the size of the world’s online population
- Universal cost- technical standards for conducting e-commerce are universal standards
- Richness(Information)- Web makes it possible to deliver rich messages with text, audio and video simultaneously to large number of people
- Interactivity – allows two way communication
- Information Density - total amount and quality of information
- Personalization/Customisation – messages to a person’s name, interests and past purchases

**Digital Market compared to Traditional Market**

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<thead>
<tr>
<th></th>
<th>Digital Market</th>
<th>Traditional Market</th>
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<tbody>
<tr>
<td>Information asymmetry</td>
<td>Reduced</td>
<td>high</td>
</tr>
<tr>
<td>Search cost</td>
<td>low</td>
<td>high</td>
</tr>
<tr>
<td>Transaction cost</td>
<td>Low (sometimes virtually nothing)</td>
<td>high</td>
</tr>
<tr>
<td>Price discrimination</td>
<td>low</td>
<td>high</td>
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<tr>
<td>Disintermediation</td>
<td>More possible</td>
<td>Less possible</td>
</tr>
<tr>
<td>Inventory cost</td>
<td>low</td>
<td>high</td>
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**The Benefits of Disintermediation to the Consumer**

![Diagram showing cost per sweater for different levels of disintermediation]

- **Cost per Sweater**: $48.50
- **Cost per Sweater**: $40.34
- **Cost per Sweater**: $20.45
Internet Business Models

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual storefront</td>
<td>Sells products directly</td>
<td>Flipkart.com</td>
</tr>
<tr>
<td>Online marketplace</td>
<td>Online auctions</td>
<td>Ebay.com</td>
</tr>
<tr>
<td>Content provider</td>
<td>Selling advertising space</td>
<td>Games.com</td>
</tr>
<tr>
<td>Social network</td>
<td>Online meeting place</td>
<td>Linkedin.com</td>
</tr>
<tr>
<td>Service provider</td>
<td>Provides services</td>
<td>Googlemaps</td>
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Categories of e-Commerce

The Internet, intranets, and extranets provide vital electronic commerce links between the components of a business and its customers, suppliers, and other business partners. This allows companies to engage in three basic categories of electronic commerce applications:

**Business-to-Consumer (B2C)** – businesses develop attractive electronic marketplaces to sell products and services to consumers. Companies may offer:

- e-commerce websites that provide virtual storefronts and multimedia catalogs
- Interactive order processing
- Secure electronic payment systems
- Online customer support
  Eg: Retailing, Online reservations

**Business-to-Business (B2B)** – involves both electronic business marketplaces and direct market links between businesses. Companies may offer:

- Secure Internet or extranet e-commerce websites for their business customers and suppliers
- Electronic data interchange (EDI) via the Internet or extranets for computer-to-computer exchange of e-commerce documents with their larger business customers and suppliers
- B2B e-commerce portals that provide auction and exchange markets for businesses.
  eg: Boomi.com- Addresses information, knowledge and business requirements of various players
**Consumer-to-Consumer (C2C)** - Successes of online auctions like e-Bay, allow consumers (and businesses) to buy and sell with each other in an auction process at an auction website.

- Sponsoring consumer or business auctions are an important e-commerce alternative for B2C or B2B e-commerce
- Electronic personal advertising of products or services to buy or sell by consumers at electronic newspaper sites, consumer e-commerce portals, or personal websites is an important form of C2C e-commerce.
  eg: Ebay.com-web auction site

### 6.3 Essential e-commerce processes

The nine essential e-commerce processes required for the successful operation or management of e-commerce activities consist of:

- Access control and security
- Profiling and personalizing
- Search management
- Content management
- Catalog management
- Payment
- Workflow management
- Event notification
- Collaboration and trading
Access Control and Security

E-commerce processes must establish mutual trust and secure access between the parties in an e-commerce transaction by authenticating users, authorizing access, and enforcing security features. For example, customer can access any e-Commerce site only through user names and passwords, encryption keys or digital certificates and signatures. The e-commerce site can also authorize access to only those parts of the site that an individual user needs to accomplish the transaction.

Profiling and Personalization

Profiling processes gather data on an individual and their website behaviour and choices, and build electronic profiles of their characteristics and preferences. User profiles are developed using profiling tools such as user registration, cookie files, website behaviour tracking software, and user feedback. Profiling processes are also used to help authenticate identity for account management and payment purposes and gather data for customer relationship management.

Search Management

Efficient and effective search processes provide a top e-commerce website capability that helps customers find the specific product or service they want to evaluate or buy. E-commerce software packages can include a website search engine component.
Content and Catalog Management

Content management software helps e-commerce companies develop, generate, deliver, update, and archive text data, and multimedia information at e-commerce websites. E-commerce content frequently takes the form of multimedia catalogs of product information. Generating and managing catalog content is a major subset of content management.

Content and catalog management may be expanded to include product configuration processes that support Web-based customer self-service and the mass customization of a company’s products. Configuration software helps online customers select the optimum feasible set of product features that can be included in a finished product.

Workflow Management

E-business workflow systems help employees electronically collaborate to accomplish structured work tasks within knowledge-based business processes. Workflow management in both e-business and e-commerce depends on a workflow software engine containing software models of the business processes to be accomplished. The workflow model expresses the predefined sets of business rules, roles of stakeholders, authorization requirements, routing alternatives, databases used, and sequence of tasks required for each e-commerce process. Workflow systems ensure that the proper transactions, decisions and work activities are performed.

Event Notification

Most e-commerce applications are event-driven systems that respond to a multitude of events. Event notification processes play an important role in e-commerce systems, since customers, suppliers, employees, and other stakeholders must be notified of all events that might affect their status in a transaction. For example when a customer purchases a product from a retail website, they receive an e-mail record of the order. The customer may also receive an e-mail notification of change in product availability or shipment status and finally an e-mail message is received notifying about the shipped product.

Collaboration and Trading

This category of e-commerce processes are those that support the vital collaboration arrangements and trading services needed by customers, suppliers, and other stakeholders to accomplish e-commerce transactions.
6.4 Electronic payment processes

Payments for the products and services purchased are an obvious and vital step in the electronic commerce transaction process. Concerns of electronic payments and security include:

- The near-anonymous electronic nature of transactions taking place between the networked computer systems of buyers and sellers, and the security issues involved.
- Electronic payment process is complex because of the wide variety of debit and credit alternatives and financial institutions and intermediaries that may be part of the process.
- Varieties of electronic payment systems have evolved. New payment systems are being developed and tested to meet the security and technical challenges of electronic commerce over the Internet.

Web Payment Processes

Most e-commerce systems on the Web involving businesses and consumers (B2C) depend on credit card payment processes. But many B2B e-commerce systems rely on more complex payment processes based on the use of purchase orders. Both types of e-commerce typically use an electronic shopping cart process, which enables customers to select products from website catalog displays and put them temporarily in a virtual shopping basket for later checkout and processing.

Electronic Funds Transfer

Electronic funds transfer (EFT) systems are a major form of electronic commerce systems in banking and retailing industries. EFT systems use a variety of information technologies to capture and process money and credit transfers between banks and businesses and their customers.

Secure Electronic Payments

Security measures including encrypting data passing between customer and merchant, encrypting data passing between customer and company authorizing the credit card transaction, and taking sensitive information off-line

When any customer makes an online purchase on the Internet, the credit card information is vulnerable to interception by network sniffers, software that easily recognizes credit card number formats. Several basic security measures are being used to solve this security problem. They include:

- Encrypt (code and scramble) the data passing between the customer and merchant.
- Encrypt the data passing between the customer and the company authorizing the credit card transaction.
- Take sensitive information offline
Security methods developed include,

- **Secure Socket Layer (SSL)** - automatically encrypts data passing between the Web browser and a merchant’s server.

- **Digital Wallet** – adding security software add-on modules to the Web browser. This enables the browser to encrypt credit card data in such a way that only the bank that authorizes credit card transactions for the merchant can see it.

- **Secure Electronic Transaction (SET)** - software encrypts a digital envelope of digital certificates specifying the payment details for each transaction. SET is expected to become the dominant standard for secure electronic payments on the Internet.

### 6.5 e-commerce application trends

E-commerce is changing how companies do business both internally and externally with their customers, suppliers, and other business partners. How companies apply e-commerce to their business is also subject to change as their managers confront a variety of e-commerce alternatives.

**E-Commerce Trends**

Fig 6.3 represents some of the trends of e-commerce applications

- B2C e-commerce has moved from merely offering multimedia company information (brochureware), to offering e-commerce services at Web storefront sites with electronic catalogs and online sales.
- Interactive marketing capabilities have been added to support a personalized e-commerce experience, and a totally integrated Web store that completely supports a variety of customer shopping experiences.
- B2C e-commerce is moving toward a self-service model where customers configure and customize the products and services they wish to buy.
- B2B e-commerce started with website support of business customer self-service, and is moving toward automated intranet and extranet procurement systems.
- B2B e-commerce participants were early users of extranets connecting trading partners, and are now moving strongly toward the use of e-commerce portals that provide auctions, exchange, and barter markets for business customers within or across industries.
Business-to-Consumer e-Commerce

Electronic commerce on the Internet between businesses and consumers is accelerating the impact of information technology on consumer behaviour and business processes and markets.

Top Retail Websites

- **Amazon.com**  [www.amazon.com](http://www.amazon.com)
  Amazon.com is the exception to the rule that consumers prefer to shop “real world” retailers online. The mother of all shopping sites, Amazon features a vast selection of books, videos, DVDs, CDs, toys, kitchen items, electronics, and even home and garden goods sold to millions of loyal customers.

- **eBay**  [www.ebay.com](http://www.ebay.com)
  The fabled auction site operates the world’s biggest electronic flea market, with everything from antiques, computers, and coins to Pez dispensers and baseball cards. This site boasts billions of page views per month, and millions of items for sale in thousands of categories supported by thousands of special-interest groups.

- **Eddie Bauer**  [www.eddiebauer.com](http://www.eddiebauer.com)
  Sportswear titan Eddie Bauer has integrated its retail channels—store, website, and catalog. Shoppers can return an item to any Eddie Bauer store, no matter where it was purchased—a policy other merchants should follow.

- **Lands’ End**  [www.landsend.com](http://www.landsend.com)
  With several seasons as an online retailer, Lands’ End is a pro at meeting shoppers’ expectations. One of the best features: Specialty Shoppers. A customer service rep will help you make your selections and answer questions by phone or via a live chat.
A basic fact of Internet retailing (E-tailing) is that all websites are created equal as far as the “location, location, location” imperative of success in retailing is concerned. No site is any closer to its customers and competitors offering similar goods and services are only a mouse click away. This makes it vital that businesses find ways to build customer satisfaction, loyalty, and relationships, to keep customers coming back to their Web stores. The key to e-tailing success is to optimize factors such as:

- **Selection and Value** – businesses must offer attractive product selections, competitive prices, satisfaction guarantees, and customer support after the sale.

- **Performance and service efficiency** – fast, easy navigation, shopping, and purchasing, and prompt shipping and delivery.

- **Look and feel of the site** – attractive web storefront, website shopping areas, multimedia product catalog pages, and shopping features.

- **Advertising and incentives to purchase** – targeted web page advertising and e-mail promotions, discounts and special offers, including advertising at affiliate sites.

- **Personal attention** – personal web pages, personalized product recommendations, Web advertising and e-mail notices, and interactive support for all customers.

- **Community relationships** – giving online customers with special interests a feeling of belonging to a unique group of like minded individuals helps to build customer loyalty and value. Promote virtual communities of customers, suppliers, company representatives, and others via newsgroups, chat rooms, and links to related sites.

- **Security and Reliability** – security of customer information and website transactions, trustworthy product information, and reliable order fulfillment.

### 6.6 Web store requirements

Most business-to-consumer e-commerce ventures take the form of retail business sites on the World Wide Web. The primary focus of such e-tailers is to develop, operate, and manage their websites to they become high-priority destinations for consumers who will repeatedly choose to go there to buy products and services.

**Developing a Web Store**

- Build website using simple website design tools
- Market website to attract visitors and transform them into loyal Web customers
Serving Customers

- Serve customers by creating user profiles, customer files, personal Web pages and promotions that help develop a one-to-one relationship.

- Transact with customers by providing dynamically changing catalog, fast catalog search engine, and convenient shopping cart system integrated with promotions, payment, shipping, and account information.

- Support customers with help menus, tutorials, FAQs and e-mail correspondence with customer service representatives.

Managing a Web Store

- Manage both the business and the website

- Operate twenty-four hours a day, seven days a week

- Protect Web store transactions and customer records, and repel hacker attacks and other security threats.

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<tr>
<th>Developing a Web Store</th>
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<tr>
<td><strong>Build</strong></td>
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<td>Website design tools</td>
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<td>Site design templates</td>
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<td>Custom design services</td>
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<td>Website hosting</td>
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<td><strong>Market</strong></td>
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<td>Web page advertising</td>
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<td>E-mail promotions</td>
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<td>Web advertising exchanges with affiliate sites</td>
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<td>Search engine registrations</td>
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<table>
<thead>
<tr>
<th>Serving Your Customers</th>
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<tbody>
<tr>
<td><strong>Serve</strong></td>
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<tr>
<td>Personalized Web pages</td>
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<td>Dynamic multimedia catalog</td>
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<td>Catalog search engine</td>
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<td>Integrated shopping cart</td>
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<td><strong>Transact</strong></td>
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<td>Flexible order process</td>
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<td>Credit card processing</td>
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<td>Shipping and tax calculations</td>
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<td>E-mail order notifications</td>
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<td><strong>Support</strong></td>
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<td>Website online help</td>
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<td>Customer service e-mail</td>
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<tr>
<td>Discussion groups and chat rooms</td>
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<td>Links to related sites</td>
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<tr>
<td><strong>Manage</strong></td>
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<td>Website usage statistics</td>
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<td>Sales and inventory reports</td>
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<tr>
<td>Customer account management</td>
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<tr>
<td>Links to accounting system</td>
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<tr>
<td><strong>Operate</strong></td>
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<tr>
<td>24x7 website hosting</td>
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<tr>
<td>Online tech support</td>
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<tr>
<td>Scalable network capacity</td>
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<tr>
<td>Redundant servers and power</td>
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<td><strong>Protect</strong></td>
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<td>User password protection</td>
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<tr>
<td>Encrypted order processing</td>
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<td>Encrypted website administration</td>
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<td>Network firewalls and security monitors</td>
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**Business-to-Business e-Commerce**

Business-to-business e-commerce is the wholesale and supply side of the commercial process, where businesses buy, sell or trade with each other businesses. B2B e-commerce applications involve electronic catalog, electronic trading systems such as exchange, and auction marketplaces that use Internet, intranet, and extranet websites and portals to unite buyers and sellers. Many businesses are integrating their Web-based e-commerce systems with their e-business systems for supply chain management, customer relationship management, and online transaction processing, as well as to their traditional, or legacy, computer-based accounting and business information systems. This ensures that all electronic commerce activities are integrated with e-business processes and supported by up-to-date corporate inventory and other databases, which in turn are automatically updated by Web sales activities.

Many B2B e-commerce portals are developed and operated for a variety of industries by third-party market-maker companies called infomediaries, which may represent consortiums of major corporations.

**e-Commerce Marketplaces**

The five major types of e-commerce marketplaces are,

- **One to Many – sell-side marketplaces.** Host one major supplier who dictates product catalog offerings and prices. eg:Dell.com
- **Many to One – buy-side marketplaces.** Attract many suppliers that flock to these exchanges to bid on the business of a major buyer.
- **Some to Many – distribution marketplaces.** Unite major suppliers who combine their product catalogs to attract a larger audience of buyers.
- **Many to Some – procurement marketplaces.** Unite major buyers who combine their purchasing catalogs to attract more suppliers and thus more competition and lower prices.
- **Many to Many – auction marketplaces used by many buyers and sellers that can create a variety of buyers’ or sellers’ auctions to dynamically optimize prices.** eg: ebay.com

**Benefits of E-commerce**

**To Organizations-**

- Expanding marketplace to national and international
- Shortens or even eliminates marketing distribution channels
- Allows lower inventories by facilitating pull type Supply chain
• Helps small businesses compete against large companies
• Decreases the cost of creating, processing, distributing, storing and retrieving information by digitizing

To Customers-
• Can conduct quick online price comparisons
• Gives more choices
• Transact from any location
• Delivers relevant and detailed information in seconds
• Enables consumers to get customized products

To Society –
• Less travelling resulting in less road traffic and lower air pollution
• People from rural areas can enjoy products and services that are otherwise not available
• Chances of reduction in fraud increasing the quality of social services