NM Institute of Engineering

&

Technology

Lecture Note On

E-COMMERCE

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E-COMMERCE &ERP

MODULE-1

Describe The Uses Of Electronic Commerce (E-Commerce)

Electronic commerce (**e-commerce**) is a financial business transaction that occurs over an electronic network such as the Internet. Today, there are three types of e-commerce. **Business to consumer** (**B-to-B** or **B2C**) **e-commerce** consists of the sale of goods to the general public. Customers visit an online business through an **electronic storefront**, which contains descriptions, graphics, and a **shopping cart** that allows customers to collect their purchases. **Consumer to consumer** (**C-to-C** or **C2C**) **e-commerce** occurs when one consumer sells directly to another. An **online auction** is an example of consumer to consumer e-commerce. **Business to business** (**B-to-B** or **B2B**) **e-commerce**, which is the most prevalent type of e-commerce, takes place between businesses, with businesses typically providing services to other businesses.

1.1 **Electronic Commerce**: Electronic commerce, commonly known as E-commerce is trading in products or services using computer networks, such as the Internet. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle, although it may also use other technologies such as e-mail. Definition of E-commerce: Sharing business information, maintaining business relationships and conducting business transactions using computers connected to telecommunication network is called **E-Commerce**.

NOTE: E-commerce i.e the buying & selling of goods on the internet, complements traditional trade.

- It is defined as a modern business methodology that addresses the desire of firms, consumers & management to cut costs while improving the quality of goods.

E-COMMERCE: Digital games=music + video + software

• Electronic books=text + data + graphics + music + photographs + video

• In the electronic 'highway system' multimedia content is stores in the form of electronic documents

• These are often digitized

• On the I-way messaging software fulfills the role, in any no. of forms: e-mail, EDI, or point-to-point file transfers

• Encryption & authentication methods to ensure security

• Electronic payment schemes developed to handle complex transactions

• These logistics issues are difficult in long-established transportation

1.2 **E-Commerce Categories**: 1. **Electronic Markets**: Present a range of offerings available in a market segment so that the purchaser can compare the prices of the offerings and make a purchase decision. Example: Airline Booking System

2. **Electronic Data Interchange (EDI)** • It provides a standardized system • Coding trade transactions • Communicated from one computer to another without the need for printed orders and invoices & delays & errors in paper handling • It is used by organizations that a make a large no. of regular transactions Example: EDI is used in the large market chains for transactions with their suppliers

3. **Internet Commerce** • It is use to advertise & make sales of wide range of goods & services. • This application is for both business to business & business to consumer transactions.

Example: The purchase of goods that are then delivered by post or the booking of tickets that can be picked up by the clients when they arrive at the event.

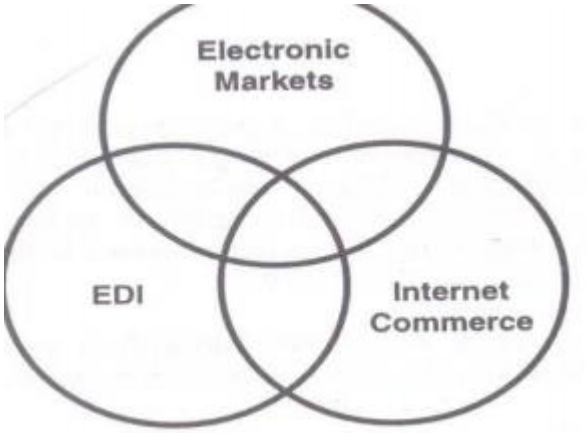


Fig 1.1 Three Categories of E-commerce

1.3 Advantages Of E-commerce:

- Buying/selling a variety of goods and services from one's home or business
- Anywhere, anytime transaction
- Can look for lowest cost for specific goods or service
- Businesses can reach out to worldwide clients - can establish business partnerships
- Order processing cost reduced
- Electronic funds transfer faster
- Supply chain management is simpler, faster, and cheaper using ecommerce
- Can order from several vendors and monitor supplies. - Production schedule and inventory of an organization can be inspected by cooperating supplier who can in-turn schedule their work

1.4 Disadvantages Of E-commerce:

- Electronic data interchange using EDI is expensive for small businesses
- Security of internet is not very good - viruses, hacker attacks can paralise

- e-commerce Privacy of e-transactions is not guaranteed
- E-commerce de-personalises shopping

1.5 Threats of E-commerce:

- Hackers attempting to steal customer information or disrupt the site
- A server containing customer information is stolen.
- Imposters can mirror your ecommerce site to steal customer money
- Authorised administrators/users of an ecommerce website downloading hidden active content that attacks the ecommerce system.
- A disaffected employee disrupting the ecommerce system.
- It is also worth considering where potential threats to your ecommerce site might come from, as identifying potential threats will help you to protect your site. Consider:
- Who may want to access your ecommerce site to cause disruption or steal data; for example competitors, ex-employees, etc.
- What level of expertise a potential hacker may possess; if you are a small company that would not be likely to be considered a target for hackers then expensive, complex security may not be needed.

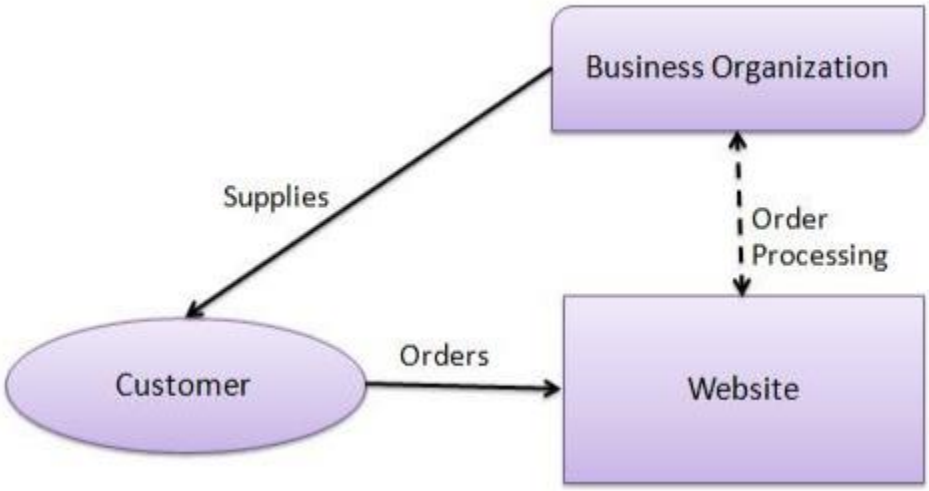
1.5 Features of E-Commerce:

- **Ubiquity** : Internet/Web technology is The marketplace is extended beyond traditional available everywhere: at work, at home, and boundaries and is removed from a temporal and elsewhere via mobile devices, anytime. geographic location. —Marketspace‖ is created; shopping can take place anywhere. Customer convenience is enhanced, and shopping costs are reduced.
- **Global reach:** The technology reaches Commerce is enabled across cultural and across national boundaries, around the earth. National boundaries seamlessly and without modification. Marketspace‖ includes potentially billions of consumers and millions of businesses worldwide.
- **Interactivity:** The technology works Consumers are engaged in a dialog that through interaction with the user. dynamically adjusts the experience to the individual, and makes the consumer a coparticipant in the process of delivering goods to the market.
- **Information density:** The technology Information processing, storage, and reduces information costs and raises quality. communication costs drop dramatically, while currency, accuracy, and timeliness improve greatly. Information becomes plentiful, cheap, and accurate.
- **Personalization/Customization:** The Personalization of marketing messages and technology allows personalized messages to customization of products and services are be delivered to individuals as well as groups. based on individual characteristics.

1.7 Business models of e-commerce: There are mainly 4 types of business models based on transaction party.

Business-to-Consumer (B2C) : In a Business-to-Consumer E-commerce environment, companies sell their online goods to consumers who are the end users of their products or services. Usually, B2C E-

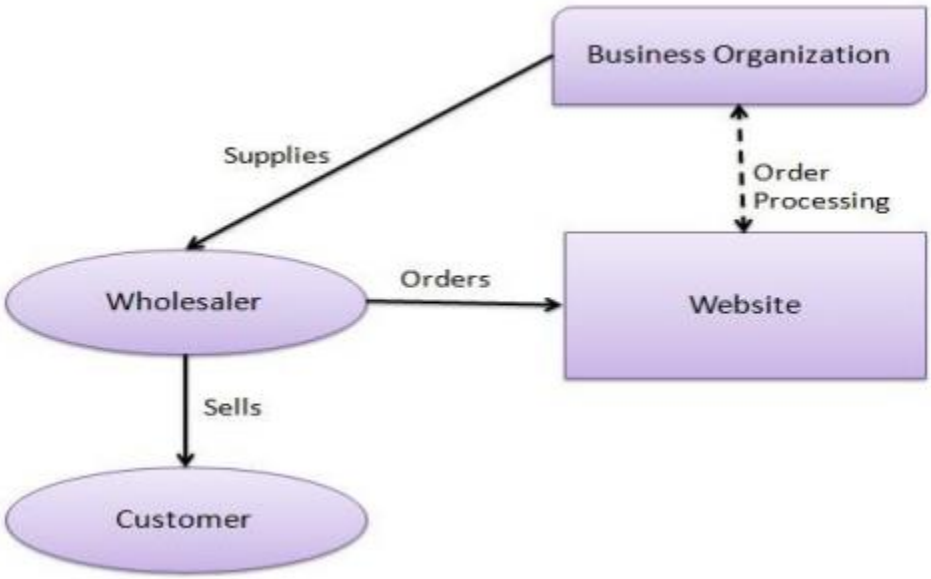
commerce web shops have an open access for any visitor, meaning that there is no need for a person to login in order to make any product related inquiry.



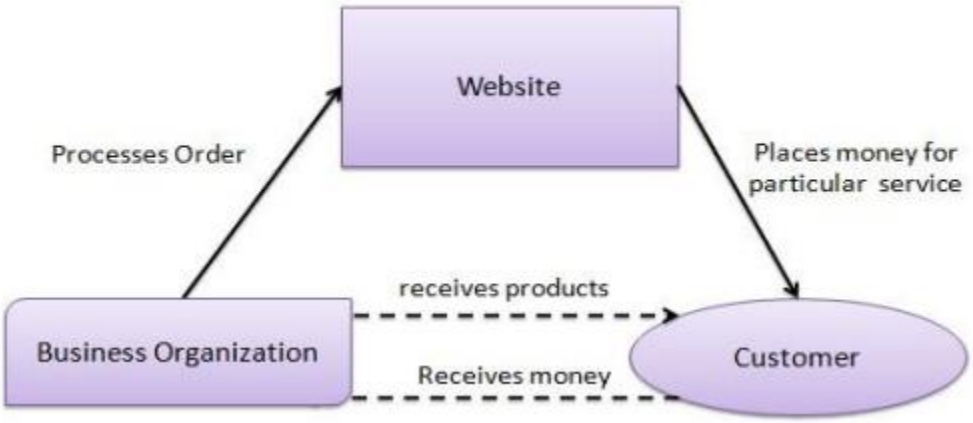
B2C E-commerce application are developing due to the wide open economic model of the internet & fast pace of change in internet technologies which are fundamentals contributors.

Example: Retailing on the WWW.

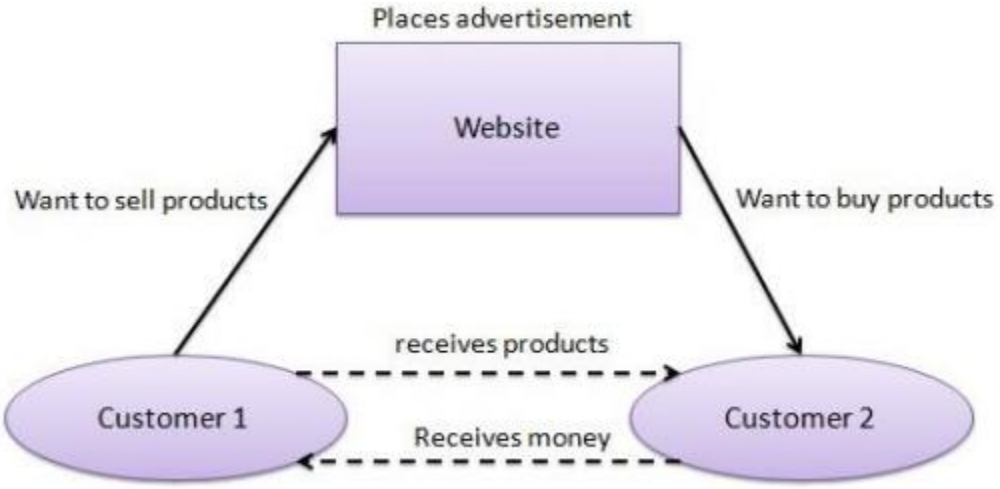
Business-to-Business (B2B) In a Business-to-Business E-commerce environment, companies sell their online goods to other companies without being engaged in sales to consumers. In most B2B E-commerce environments entering the web shop will require a log in. B2B web shop usually contains customer-specific pricing, customer-specific assortments and customer-specific discounts.



Consumer-to-Business (C2B): In a Consumer-to-Business E-commerce environment, consumers usually post their products or services online on which companies can post their bids. A consumer reviews the bids and selects the company that meets his price expectations.



Consumer-to-Consumer (C2C) In a Consumer-to-Consumer E-commerce environment consumers sell their online goods to other consumers. A well-known example is eBay.



1.8 **REVENUE MODEL & BUSINESS PROCESS:**

A **revenue model** is a framework for generating revenues. It identifies which revenue source to pursue, what value to offer, how to price the value, and who pays for the value. It is a key component of a company's business model. In business, revenue typically consists of the total amount of money received by the company for goods sold or services provided during a certain time period. So, RMS are a part of the BM. companies generate revenues from multiple income streams such as advertising, subscription, affiliate marketing etc. Online models not only sell goods or services but also contacts (e.g. banner) and information (e.g. user-data).

Five primary revenue models are described below.

1. **Advertising Revenue Model** The advertising model is often used by Media businesses which use their platforms where content is provided to the customer as an advertising space. Possible examples are newspapers and magazines which generate revenue through the various adverts encountered in their issues. Internet businesses which often provide services will also have advertising spaces on their platforms. Examples include Google ,Facebook etc.

2. **Subscription Revenue Model**

Users are charged a periodic (daily, monthly or annual) fee to subscribe to a service. Many sites combine free content with premium membership, i.e. subscriber- or member-only content. Subscription fees do not depend on transactions. Subscribers use the content as long and often as they want

Examples: Publishers and content services, e.g. newspapers, magazines, tv channels - they provide text, audio or video content to users who subscribe for a fee to get access to the service or to download the new issue.

3. **Transaction Fee Revenue Model** A company receives commissions based on volume for enabling or executing transactions.[7] The revenue is generated through transaction fees by the customer paying a fee for a transaction to the operator of a platform. The company is a market place operator providing the customer with a platform to place his transactions. During this process the customer may be presented as a buyer as well as a seller.

Examples

- eBay
- Amazon

4. **Sales Revenue Model** Wholesalers and retailers of goods and services sell their products online. The main benefits for the customer are the convenience, time savings, fast information etc. The prices are often more competitive. In terms of online sales there are different models such as market places as common entry points for various products from multiple vendors.

5. ***Affiliate Revenue Model*** *The affiliate program is an online distribution solution which is based on the principle of commission. Merchants advertise and sell their products and services through links to partner-websites. It is a pay-for-performance model: Commissions are only paid for actual revenue or measurable success.[8] An affiliate-link includes a code, which identifies the affiliate. That's how clicks, leads or sales are tracked. The affiliate therefore acts as the interface between merchants and customers. This model leads to a win-win situation: the merchants sell their products or services and the affiliates get their commissions. Variations include banner exchange, pay-per-click and revenue sharing programs. The affiliate model is well-suited for the web and therefore very popular.* **Examples**

- Amazon
- affilinet

1.9 Different Types of Networking For E-Commerce:

Internet: The Internet is a global network of computers that allows people to send email, view web sites, download files such as mp3 and images, chat, post messages on newsgroups and forums and much more. The Internet was created by the Advanced Research Projects Agency (ARPA) of the U.S. government in 1960's and was first known as the ARPANet. At this stage the Internet's first computers were at academic and government institutions and were mainly used for accessing files and to send emails. From 1983 onwards the Internet as we know it today started to form with the introduction of the communication protocol TCP/IP to ARPANet. Since 1983 the Internet has accommodated a lot of changes and continues to keep developing. The last two decades has seen the Internet accommodate such things as network LANs and ATM and frame switched services. The Internet continues to evolve with it becoming available on mobile phones and pagers and possibly on televisions in the future.

Advantages of internet: There many advantages to using the internet such as: E-mail Email is now an essential communication tool in business. It is also excellent for keeping in touch with family and friends. The advantage to email is that it is free (no charge per use) when compared to telephone, fax and postal services. Information There is a huge amount of information available on the internet for just about every subject known to man, ranging from government law and services, trade fairs and conferences, market information, new ideas and technical support. Services Many services are now provided on the internet such as online banking, job seeking and applications, and hotel reservations. Often these services are not available off-line or cost more. Buy or sell products. The internet is a very effective way to buy and sell products all over the world.

Intranet:

- An intranet is a computer network that uses Internet Protocol technology to share information, operational systems, or computing services within an organization. This term is used in contrast to extranet, a network between organizations, and instead refers to a network within an organization.
- The objective is to organize each individual's desktop with minimal cost, time and effort to be more productive, cost efficient, timely, and competitive.
- An intranet may host multiple private websites and constitute an important component and focal point of internal communication and collaboration.
- Any of the well known Internet protocols may be found in an intranet, such as HTTP (web services), SMTP (e-mail), and FTP (file transfer protocol). Internet technologies are often deployed to provide modern interfaces to legacy information systems hosting corporate data.

Uses of Intranet:

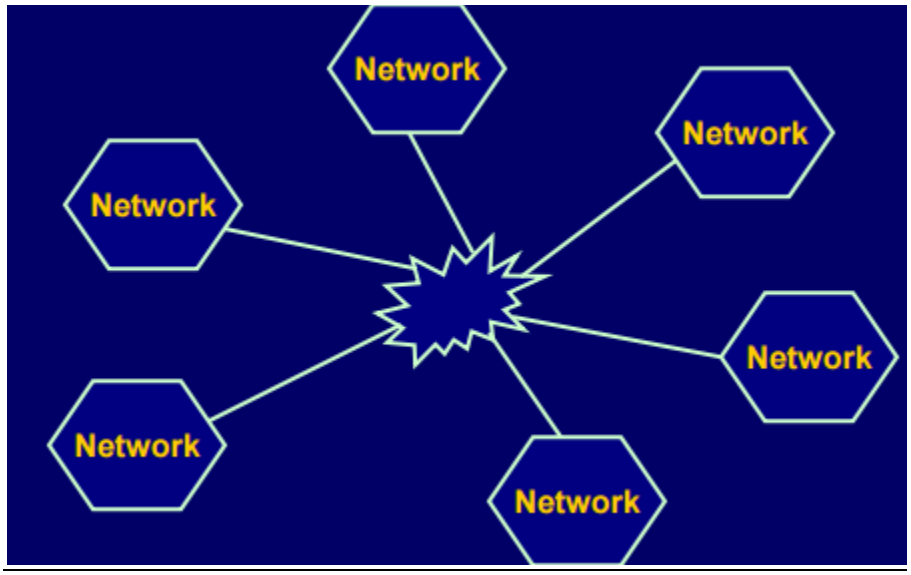
- Increasingly, intranets are being used to deliver tools, e.g. collaboration (to facilitate working in groups and teleconferencing) or sophisticated corporate directories, sales and customer relationship management tools, project management etc., to advance productivity.

- Intranets are also being used as corporate culture-change platforms. For example, large numbers of employees discussing key issues in an intranet forum application could lead to new ideas in management, productivity, quality, and other corporate issues.
- In large intranets, website traffic is often similar to public website traffic and can be better understood by using web metrics software to track overall activity. User surveys also improve intranet website effectiveness. Larger businesses allow users within their intranet to access public internet through firewall servers. They have the ability to screen messages coming and going keeping security intact.
- When part of an intranet is made accessible to customers and others outside the business, that part becomes part of an extranet. Businesses can send private messages through the public network, using special encryption/decryption and other security safeguards to connect one part of their intranet to another.

The INTERNET & WWW (World Wide Web):

What is a Network? A group of three or more connected communicating entities

What is Internet? The network formed by the co-operative interconnection of a large number of computer networks. Network of networks. No one owns the internet .Every person who makes a connection owns a slice of the Internet. There is no central administration to the Internet.



1950's -ARPA (Advanced Research Projects Agency) • 1970 - ARPANET creates precursor to Transmission Control Protocol (TCP) • 1971-Universities added to net Telnet and FTP are available • 1972-First electronic mail message sent. 1973- ARPANET connected to England and Norway • 1974- TCP starts being used for communicating across a system of networks • 1982- US DoD starts building defense data networks based on ARPANET technology • 1983- ARPANET splits into ARPANET and MILNET. 1983- Internet now in place& TCP/IP standardized • 1986- National Science Foundation (NSF) implements NFSNET; a system of regional network of routers connected over a backbone

network • 1991- Archie and Gopher released. 1992- Internet links more that 17,000 networks in 33 countries; 3 million hosts • **1993- World Wide Web is launched.**

The Internet is a collection of computers, all connected to one another. It first got its start in 1966 as the **ARPANET**, a project of the Defense Department's **A**dvanced **R**esearch **P**rojects **A**gency. At some point it was opened up to university researchers, and, for many years, was used primarily for transferring email and files among university researchers and for exchanging information via **newsgroups**. Each computer that is connected to the network is called an **internet host**. In 1986 there were 5,000 hosts and 241 newsgroups**. In 1990, Tim Berners-Lee** came up with the idea of having a large number of documents, all of which could be linked together and refer to one another. He called this set of documents the **World Wide Web** (WWW). Each person or organization's collection of documents was called a **website**. The idea caught on quickly. In 1993 there were 600 websites. (The Internet itself was still growing; there were now two million Internet hosts.) In 1995 there were 100,000 websites. Today there are literally millions of websites, and the number of Internet hosts has grown as well.

What is WWW: Stands for "World Wide Web." It is important to know that this is not a synonym for the Internet. The World Wide Web, or just "the Web," as ordinary people call it, is a subset of the Internet. The Web consists of pages that can be accessed using a Web browser. The Internet is the actual network of networks where all the information resides. Things like Telnet, FTP, Internet gaming, Internet Relay Chat (IRC), and e-mail are all part of the Internet, but are not part of the World Wide Web. The Hyper-Text Transfer Protocol (HTTP) is the method used to transfer Web pages to your computer. With hypertext, a word or phrase can contain a link to another Web site. All Web pages are written in the hyper-text markup language (HTML), which works in conjunction with HTTP.

(WorldWideWeb) The first Web browser, written by Tim Berners Lee and introduced in early 1991. It ran on the NeXT platform, which was also used as the first Web server.

ECommerce Strategy and Plan : Having a plan can help save you from making mistakes and getting off target from your original objectives. A plan does not have to be long and complex. Consider the key issues:

- **Mission** - what is your businesses going to do
- **Strategy** - how will you go about making the business a success
- **Technology** - choose the technology to support the business
- **Stakeholders** - identify the partners that will help move the business forward
- **Engagement** - get moving then review and improve as you go

Take some time to put a plan together. Here are some planning points to consider.

- Make sure you know your market
- Multi-channels to market - proven to improve results up to 400%
- Integrate the shopping experience
- How you will deal with
    - Content
    - Pricing & inventory
    - Logistics
    - Service & support
    - Payment & refund/returns
    - Security & PCI Compliance
- Easy-to-use purchase process
- Consider localisation requirements - currencies & languages
- Consider customer relationship management and personalisation
- Make sure that you select a scalable platform or solution
- Make sure you have a team in place
- Marketing Campaigns and requirements
- Integrate to external systems, suppliers or 3PL
- Prepare a social media plan
- Prepare a mobile commerce plan
- Prepare a content management plan

Strategy Overview

1. Business & Personal Aims
2. Business Objectives
3. Business Model
4. Tactical Deployment
5. Marketing Requirements and Goals
6. Content Gathering and Management
7. Fulfilment and Logistics
8. Financial Management and Payments
9. Social Media
10. Platform & Technology
11. Mobile
12. Maintenance & Management

7 Strategies to Grow Ecommerce Revenue

A “strategy” is an idea. A “tactic” is a plan or action to support your idea. Here are seven revenue-growth strategies to consider.

1. **Acquiring new customers.**
2. **Targeting new markets.**
3. **Sell more to existing customers.**
4. **Increase your average order size.**
5. **Expand your product lines.**
6. **Increase prices.**
7. **Cross-channel marketing.**

Three Ways a Business Can Create an Effective Presence on the Web

As a business owner, you can create a strong Web presence in several ways. The benefits include increased traffic and customer interest, as well as better communication with your customers. When you create a strong Web presence, continue to use it to maintain customer loyalty and interest.

1.Social Media Sites

Demonstrate your expertise on Facebook, LinkedIn and Twitter. Post often, giving on-topic information that is relevant to your business. LinkedIn groups and Facebook discussions offer opportunities to answer customer questions and direct them to your website. A strong, professional social media identity is important for building trust with your clients. Drop the URLs of your social media sites in your video descriptions and blog posts to drive traffic to the sites.

2. Video Upload Sites

Sites such as YouTube and Dailymotion offer opportunities for you to feature your products in an online video. Potential customers love product videos because they get to see the product in action. Create videos that are topical in nature and not overt advertisements. Try to show your product solving a problem in an imaginative or entertaining way. Do not miss the opportunity to link to your website, blog and social media sites in the video description.

3. Creating a Blog

Having a blog on your website is an effective way to demonstrate to your customers that you are not a faceless enterprise. Update your blog at least once a week, and respond honestly to any questions posed by your readers to give your company a personality. Not only can you enhance your Web presence with an active blog but also you gain an opportunity to receive unsolicited feedback.

WEB SITE USABILITY **Web usability** is the ease of use of a website. Some broad goals of usability are the presentation of information and choices in a clear and concise way, a lack of ambiguity and the placement of important items in appropriate areas. One important element of web usability is ensuring that the content works on various devices and browsers. Another concern for usability is ensuring that the website is appropriate for all ages and genders.

Eight Key points for Web site Usability:

1.Navigation: Keep it simple. Don't confuse your customer A neat navigation structure will allow smooth and effortless browsing, which ultimately encourages visitors to continue explore the site and turn them into regular site visitors. You need to give tactical thought to the navigation structure of your website to ensure that customers are able to locate information, compare products, and make payment with minimum clicks. To improve the navigation of your e-commerce website.

2. Homepage: Get it right the first time E-Commerce websites need to display numerous product offerings rather than just displaying one or two products on homepage. By displaying very few products on homepage, you are narrowing down customer's choice from the word go.

3. Product Page Font Visibility: Grab visitor's attention Font size, and font color ensures that visitors do not have any problem viewing product details and that they find relevant information they are looking for in the shortest possible time. So, every element should be designed to achieve this goal.

4. Add to Cart Button: Final action just a click away Very often, the 'Add to Cart', the final action button in an e-Commerce website is either not well designed or strategically placed to grab prospective buyer's action. The selection of shape, color, font typography, and button content all trigger the final action. Make sure the 'Add to Cart' button is obvious, bright, and prominent in comparison to other features on product page.

5. Font Visibility: A Costly mistake Deciding on what font type, font size, and font color to use can be very tricky for customers.

6. Primary Navigation: Quick access guaranteed It is equally important to have an intuitive and engaging primary navigation so that users can find information they are looking for quickly with minimal clicks. For those who are not aware, primary navigation controls are present in a sidebar to the left, right, or top of a page on inner pages. These controls allow users to surf effortlessly on the site. The easier and interesting you make it for your audience, the more likely they are to stay on your site, buy the product they are looking for, and return to your site in future.

7. Trust: Key lies in winning customer's trust e-Commerce websites run on the fundamental principle of trust. In order to win customer's trust it is very important that you study customer psychology. Lack of secure site (https) or lack of a certification by an Internet trust organization can prevent customers from buying from your store. Online businesses must provide security against misuse of confidential information and clearly display privacy policies.

8. Special offers: Don't save best offers for last Customers are looking for special offers, discounts, or best deals. It is most likely that customer will review special offers and it will strike a chord on the first attempt. Remember the goal of e-Commerce website is not just better user experience, but also to increase sales and improve bottom-line results.

MARKETING ON THE WEB:

Web Marketing Strategies : E-Buisness: Distributing, buying, selling and marketing products and services over electronic systems.

E-business for commercial transactions Involves supply chain management, e-marketing, online marketing, EDI.

Uses electronic technology such as:

- Internet
- Extranet/Intranet
- Protocols

E-commerce vs. E-business

E-commerce is about doing business electronically

E-commerce conducting financial transactions electronically

E-business is conducting business on the Internet

E-business is the transformation of business processes through the Internet.

E-BUSINESS is the continous optimization of a Firm's Business activities through digital technology.

E-COMMERCE is the Subset of E-business focused on transactions.

E-marketing is one part of an organization's e-business activities.

E-Marketing is Bigger than the Web

1-7

- The Web is the portion of the internet that supports a graphical user interface for hypertext navigation with a browser.
- The Web is what most people think about when they think of the Internet.

The Web Is One Aspect of E-Marketing

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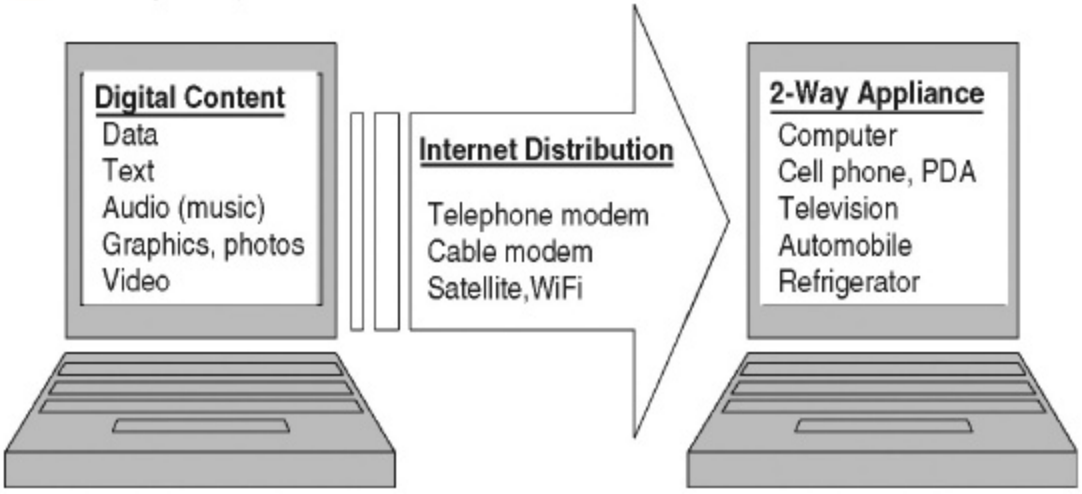
- Exhibit 1.1



E-Marketing's Past: Web 1.0

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- The Internet started in 1969 as the ARPANET, a network for academic and military use.
- Web pages and browsers appeared in 1993.
- The first generation of e-business was like a gold rush.
  - Between 2000 and 2002, more than 500 internet firms shut down in the U.S.

E-Marketing Today: Web 2.0

3

- Web 1.0 connected people to networks.
- Web 2.0 connected people with machines and each other.
- Web 2.0 is the second generation of internet technology and includes:
  - Blogs
  - Social networking
  - Photo, video, and bookmark sharing

Strategy

2-34

- Strategy is the means to achieve a goal.
- E-business strategy
  - Strategy that deploys enterprise resources to reach performance objectives, competitive advantages.
- E-marketing strategy
  - Strategy that capitalizes on information technology to reach marketing objectives.

Business Models

5

- A business model is a method for long-term survival and a value proposition for partners, customers, and revenue.
- E-business models include the use of information technology to achieve long-term goals.
- Firm selects one or more models as strategies to accomplish enterprise goals.

Overview of the E-Marketing Planning Process

- The e-marketing plan is a blueprint for e-marketing strategy formulation and implementation.
- The plan serves as a road map to guide the firm, allocate resources, and make decisions.

Seven-Step E-Marketing Plan

1. Situation analysis
2. E-Marketing strategic planning
3. Objectives
4. E-Marketing strategy
5. Implementation plan
6. Budget
7. Evaluation plan

Step1: Situation Analysis: Review the existing marketing plan & any other information that can be obtained about the company & it's brand.
Review the firm's e-business objectivies, strategies & performance metrics.
Step2: E-Marketing Strategic planning: Product strategic plannings are:

Segementation
Targeting
Differentation
Positioning

Market conduct analysis to determine strategies:
Market opportunities analysis
Demand analysis
Segment analysis
Supply analysis
Step3:Objective: An objective is an e-marketing plan may include the following aspects:
Task (what is to be accomplished)
Measurable quantity (How much)
Time frame (By When)
Step4: E-marketing Strategies: It provides 2 strategies such as Product & pricing strategies.
Step5:Implementation plan:

Step6: Budget: The Plan must identify the expected returns from Marketing investments including:
Cost/benefit analysis
Internal Rate Of Return (IRR) Calculation
Return of Marketing Investments.
Step7:Evaluation Plan: Marketing plan success depends on continuous evaluation. E-marketers must have tracking systems in place to measure results.

- **Web Marketing Strategies:** Four Ps of marketing
  - Product
    - Physical item or service that the company is selling
  - Price
    - Amount a customer pays for the product
  - Promotion
    - Any means of spreading the word about the product
  - Place
    - Need to have products or services available in different locations

- **How do you reach customers?** Identify groups of potential customers
- Select the appropriate media
- Build the right message (write to your reader)
  - Content (e.g., product presentation)
  - Context (e.g., trust)

Communicating with Different Market Segments: Market segmentation is the process of evaluating different portions of the market and identifying differences between them. Business owners and marketers segment to understand and satisfy the needs of different consumers, also called **target demographics**, preventing competitors from exploiting similar opportunities in the process. Mass marketing, conversely, treats the entire market as homogenous. The business offers the same marketing mix to everyone, scaling efforts and saving costs through a single mass production, distribution and communication strategy. Mass marketing was a much more common business practice before consumer data became more widely accessible.

Types of market segmentation There are four common filters for segmenting the buying landscape:

1. **Geographic** - The differences in where people live and work often play a huge role in what they buy. Understanding the region your target demographic lives in will help you understand how product, price, promotion and distribution should be crafted to meet their needs.
2. **Demographic** - Socio-economic factors also play a role in how people behave as consumers. Differences in gender, age, income, education level and race often influence buyer behavior.
3. **Psychographic** - People have different values and beliefs, which can often influence their purchasing decisions. Values are often influenced by - but not limited to - geography, lifestyle, age and religious beliefs.
4. **Behavior** - Not every consumer buys the same way. Some people research their options carefully for months, while others are impulse buyers who are comfortable making snap decisions. Some people prefer brick-and-mortar stores where they can touch the product before buying, and others prefer the convenience of shopping online. Knowing how well your marketing will match the target group's behavior will have a big impact on your success.

Quick Quiz

1.Advertisers' response to this decrease in effectiveness was to identify specific portions of their markets and target them with specific advertising messages. This practice, called _____.
Answer: market segmentation
2. The practice of targeting very small market segments is called _____.
Answer: micromarketing
3. In _____, marketers try to group customers by variables such as social class, personality, or their approach to life.
Answer: psychographic segmentation
4. Most companies use the term _____ to describe the combination of elements that they use to achieve their goals for selling and promoting their products and services.

Answer: marketing mix

Beyond Market Segmentation: Customer Behavior and Relationship Intensity

Segmentation Using Customer Behavior :In general, the creation of separate experiences for customers based on their behavior is called behavioral segmentation. When the behavioral segmentation is based on things that happen at a specific time or occasion, behavioral segmentation is sometimes called occasion segmentation. Marketing researchers are just beginning to study how and why people prefer different combinations of products, services, and Web site features and how these preferences are affected by their modes of interaction with the site. Market researchers are finding that people want Web sites that offer a range of interaction possibilities from which they can select to meet their needs. Remember that a particular person might visit a particular Web site at different times and might search for different interactions each time. Customizing visitor experiences to match the site usage behavior patterns of each visitor or type of visitor is called usage-based market segmentation. Researchers have

begun to identify common patterns of behavior and to categorize those behavior patterns. One set of categories that marketers use today includes browsers, buyers, and shoppers.

Customer Relationship Intensity and Life-Cycle Segmentation One goal of marketing is to create strong relationships between a company and its customers. The reason that one-to-one marketing and usage-based segmentation are so valuable is that they help to strengthen companies' relationships with their customers. Good customer experiences can help create an intense feeling of loyalty toward the company and its products or services. Researchers have identified several stages of loyalty as customer relationships develop over time.

Five-stage Model of Customer Loyalty:	• **Awareness:** Customers who recognize the name of the company or one of its products are in the awareness stage of customer loyalty. • **Exploration:** In this stage potential customers learn more about the company or its products. • **Familiarity:** Customers who have completed several transactions and are aware of the company's policies regarding returns, credits, and pricing flexibility are in this stage. • **Commitment:** After experiencing a considerable number of highly satisfactory encounters with a company, some customers develop a fierce loyalty or strong preference for the products or brands of that company. • **Separation:** Over time, the conditions that made the relationship valuable might change. The customer might be severely disappointed by changes in the level of service (either as provided by the company or as perceived by the customer) or product quality.

Advertising on the Web Most advertising on the Web uses banner ads. A banner ad is a small rectangular object on a Web page that displays a stationary or moving graphic and includes a hyperlink to the advertiser's Web site. Banner ads are versatile advertising vehicles their graphic images can help increase awareness, and users can click them to open the advertiser's Web site and learn more about the product. Thus, banner ads can serve both informative and persuasive functions.

Banner Ads:	• **Banner ads:** Companies have three different ways to arrange for other Web sites to display their banner ads. The first is to use a banner exchange network. The second way is to find Web sites that appeal to one of the company's market segments and then pay those sites to carry the ads. A third way is to use a banner-advertising network. • **Measuring banner ad cost and effectiveness:** When a company purchases mass media advertising, it pays a dollar amount for every thousand people in the estimated audience. This pricing metric is called cost per thousand and is often abbreviated CPM.

E-Mail Marketing A key element in any e-mail marketing strategy is to obtain customers' approvals before sending them any e-mail that includes a marketing or promotional message.

Permission Marketing : Many businesses are finding that they can maintain an effective dialog with their customers by using automated e-mail communications. Sending one e-mail message to a customer can cost less than one cent if the company already has the customer's e-mail address. Purchasing the email addresses of people who ask to receive specific kinds of e-mail messages adds between a few cents and a dollar to the cost of each message sent.

Combining Content and Advertising : One strategy for getting e-mail accepted by customers and prospects that many companies have found successful is to combine content with an advertising e-mail message. Articles and news stories that would interest specific market segments are good ways to increase acceptance of email.

Technology-Enabled Customer Relationship Management(CRM): The nature of the Web, with its two-way communication features and traceable connection technology, allows firms to gather much more information about customer behavior and preferences than they can gather using micromarketing approaches. Now, companies can measure a large number of things that are happening as customers and potential customers gather information and make purchasing decisions. The information that a Web site can gather about its visitors (which pages were viewed, how long each page was viewed, the sequence, and similar data) is called a clickstream. The idea of technology-enabled relationship management has become possible when promoting and selling on the Web.

Technology-enabled relationship management occurs when a firm obtains detailed information about a customer's behavior, preferences, needs, and buying patterns, and uses that information to set prices, negotiate terms, tailor promotions, add product features, and otherwise customize its entire relationship with that customer.

CRM as a Source of Value in the Marketspace: For years, businesses have viewed information as a part of the value chain's supporting activities, but they have not considered how information itself might be a source of value. In the marketspace, firms can use information to create new value for customers. Many electronic commerce Web sites today offer customers the convenience of an online order history, recommendations based on previous purchases, and show current information about products in which the customer might be interested.

Creating and Maintaining Brands on the Web: A known and respected brand name can present to potential customers a powerful statement of quality, value, and other desirable qualities in one recognizable element. Branded products are easier to advertise and promote, because each product carries the reputation of the brand name. Companies have developed and nurtured their branding programs in the physical marketplace for many years. Consumer brands such as Ivory soap, Walt Disney entertainment, Maytag appliances, and Ford automobiles have been developed over many years with the expenditure of tremendous amounts of money. However, the value of these and other trusted major brands far exceeds the cost of creating them.

Elements of Branding:	• **Product differentiation**: The first condition that must be met to create a product or service brand. • **Relevance:** The degree to which the product offers utility to a potential customer. • **Perceived value:** A key element in creating a brand that has value.

Search Engine Positioning and Domain Names Potential customers find Web sites in many different ways. Some site visitors are referred by a friend. Others are referred by an affiliate marketing partner of the site. Some see the site's URL in a print advertisement or on television. Others arrive after typing a URL that is similar to the company's name. But many site visitors are directed to the site by a search engine or directory Web site.

Search Engines and Web Directories A search engine is a Web site that helps people find things on the Web. Search engines **contain three major parts**.

The first part, called a spider, a crawler, or a robot (or simply bot), is a program that automatically searches the Web to find Web pages that might be interesting to people. When the spider finds Web pages that might interest search engine site visitors, it collects the URL of the page and information contained on the page. This information might include the page's title, key words included in the page's text, and information about other pages on that Web site. In addition to words that appear on the Web page, Web site designers can specify additional key words in the page that are hidden from the view of Web site visitors, but that are visible to spiders. These key words are enclosed in an HTML tag set called meta tags. The word "meta" is used for this tag set to indicate that the key words describe the content of a Web page and are not themselves part of the content. The spider returns this information to the **second part of the search engine to be stored**. The storage element of a search engine is called its index or database. The index checks to see if information about the Web page is already stored. If it is, it compares the stored information to the new information and determines whether to update the page information. The index is designed to allow fast searches of its very large amount of stored information. **The third part of the search engine is the search utility.** Visitors to the search engine site provide search terms, and the search utility takes those terms and finds entries for Web pages in its index that match those search terms. The search utility is a program that creates a Web page that is a list of links to URLs that the search engine has found in its index that match the site visitor's search terms. The visitor can then click the links to visit those sites.

Quick Quiz

Quiz:
1.The _____ of an advertising method is the percentage of recipients who respond to an ad or promotion.
Answer: conversion rate
2.The information that a Web site can gather about its visitors (which pages were viewed, how long each page was viewed, the sequence, and similar data) is called a(n) _____.
Answer: clickstream
3. In _____, one firm's Web site includes descriptions, reviews, ratings, or other information about a product that is linked to another firm's site that offers the item for sale.
Answer: affiliate marketing
4. _____ relies on existing customers to tell other people (the company's prospective customers) about the products or services they have enjoyed using.
Answer: Viral marketing

Key Terms

- Acquisition cost: The total amount of money that a site spends, on average, to draw one visitor to the site.
- Brand: Customers' perceptions of a product.
- Clickstream: The information that a Web site can gather about its visitors.
- Demographic segmentation: Uses information about age, gender, family size, income, education, religion, or ethnicity to group customers.
- Market segmentation: Advertisers identifying specific portions of their markets and target them with specific advertising messages.
- Spider: A program that automatically searches the Web to find Web pages that might be interesting to people.
- Trigger words: Prompt a visitor to stay and investigate the products or services offered on the site.

7 KEY E-COMMERCE INFRASTRUCTURE DECISION:

Every business requires an infrastructure to support its customers and operations. This includes facilities, equipment, and processes to support all the functional areas of your business. Choosing the correct infrastructure to match your business strategies enables your operations to run efficiently.

Here are seven important infrastructure decisions that ecommerce businesses face.

1.Marketing: Of all the infrastructure elements, marketing may be the most important. To succeed, your website must be found. Once visitors are on your site, you need to keep them there and compel them to buy from you. That's the job of your marketing team. Whether it's website design, social media, search marketing, merchandising, email, or other forms of advertising, it's all about marketing.

2. Facilities: A key competitive advantage that ecommerce businesses have over brick-and-mortar stores is the investment in their physical offices and warehouses. In many cases, you can host your business out of a home office and your basement or garage.

3. Customer Service: There are many choices today for delivering high-quality customer service. You can manage those activities in-house or outsource to a third party. Basic customer service for sales and post-sales activities can be handled using email.

4. Information Technology: Choosing the right ecommerce platform is one of the most important decisions you will make in your business.

5. Fulfillment: Another key decision is whether you will manage your own inventory or outsource those activities to a fulfillment house or through drop shipping arrangements with your suppliers.
Managing your own inventory will provide you with a high level of control, but you will tie up your cash in inventory, warehouse space, and your own fulfillment staff. In some industries — like the jewelry supply industry that my previous business was in — managing your own inventory was the most logical choice. We had no alternative for drop shipping, and most items were purchased in bulk and were very small.

6. Finance and Administration: Many ecommerce companies use outside services for vendor payments, payroll, and other basic accounting activities. They decide to focus on the sales, marketing, and customer service. This allows them to maintain a focus on growing their businesses, instead of paying an internal accountant — or doing that work yourself as the business owner.
On the administration side, you need a leadership team and provide direction to them. Good communication is important.

7. Human Resources: Many small-business owners avoid the human resources function. Recruiting, setting up compensation, maintaining compliance and other HR activities are specialized and time consuming. You may choose to bring the resources in-house to manage those activities, but also evaluate outsourcing them. There are many individuals and agencies well equipped to take on your HR activities.

MOD-2

Business to business strartegies: (Overview strategic methods for developing E-commerce purchasing, logistics & supply activities)

The terms `e-commerce' and `e-business' are often used interchangeably but what do these words really mean?

E-commerce refers to online transactions - buying and selling of goods and/or services over the Internet.

E-business covers online transactions, but also extends to all Internet based interactions with business partners, suppliers and customers such as: selling direct to consumers, manufacturers and suppliers; monitoring and exchanging information; auctioning surplus inventory; and collaborative product design. These online interactions are aimed at improving or transforming business processes and efficiency.

E-business strategy

• Strategy:

• How advanced is a company in its use of ICT to support different processes.

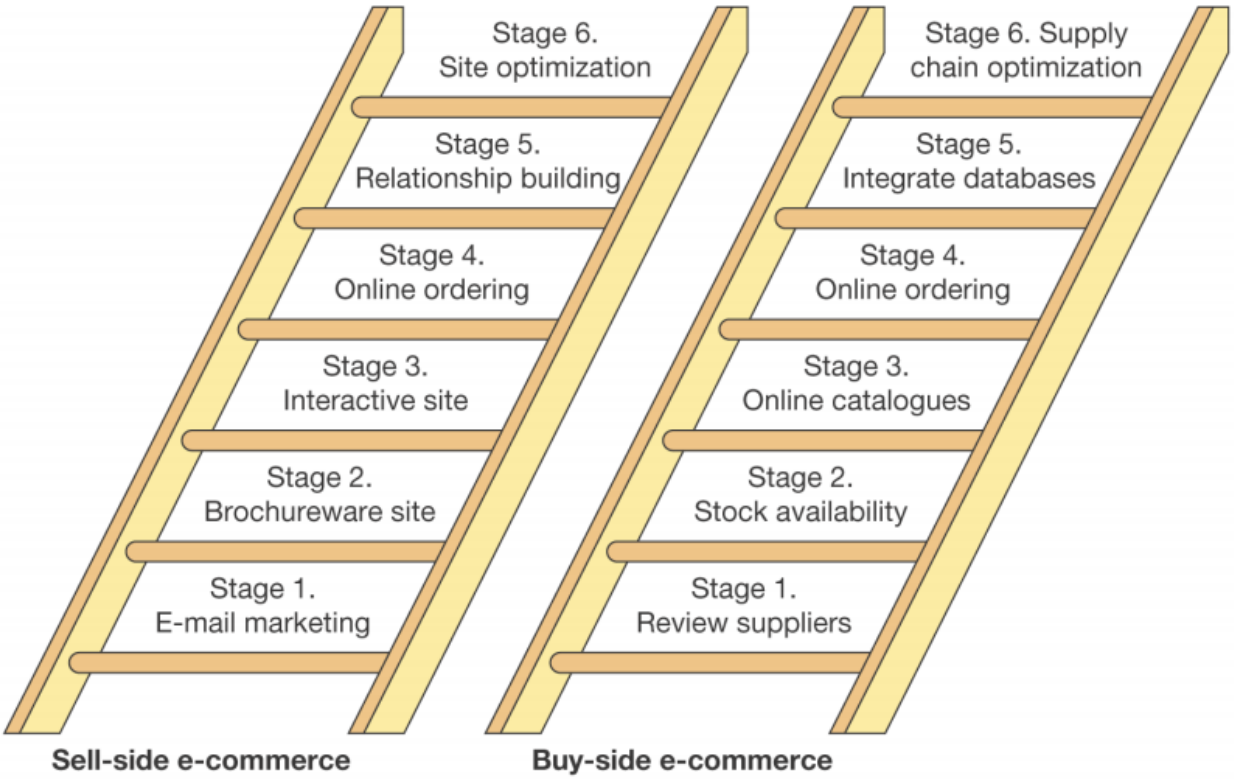
• Identification of stages in this development

• Analysis

• Objectives

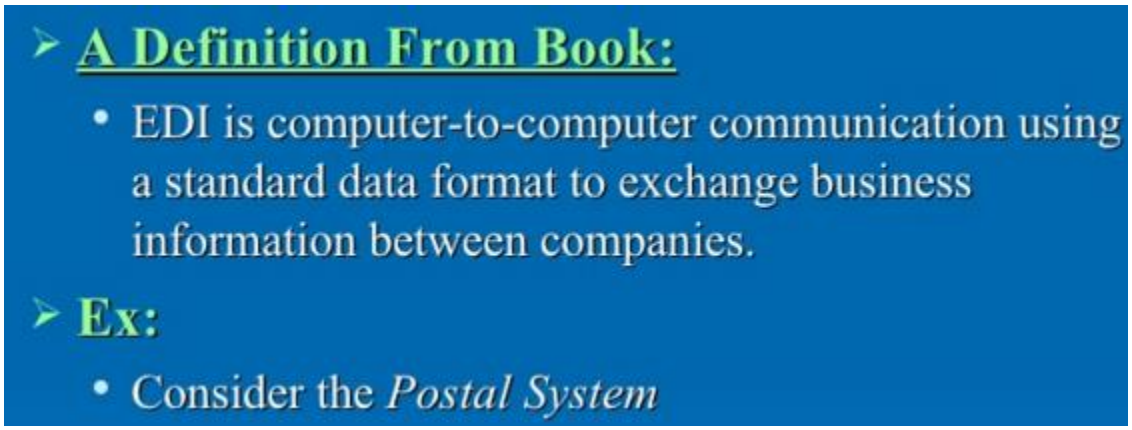
• Definition

• Implementation

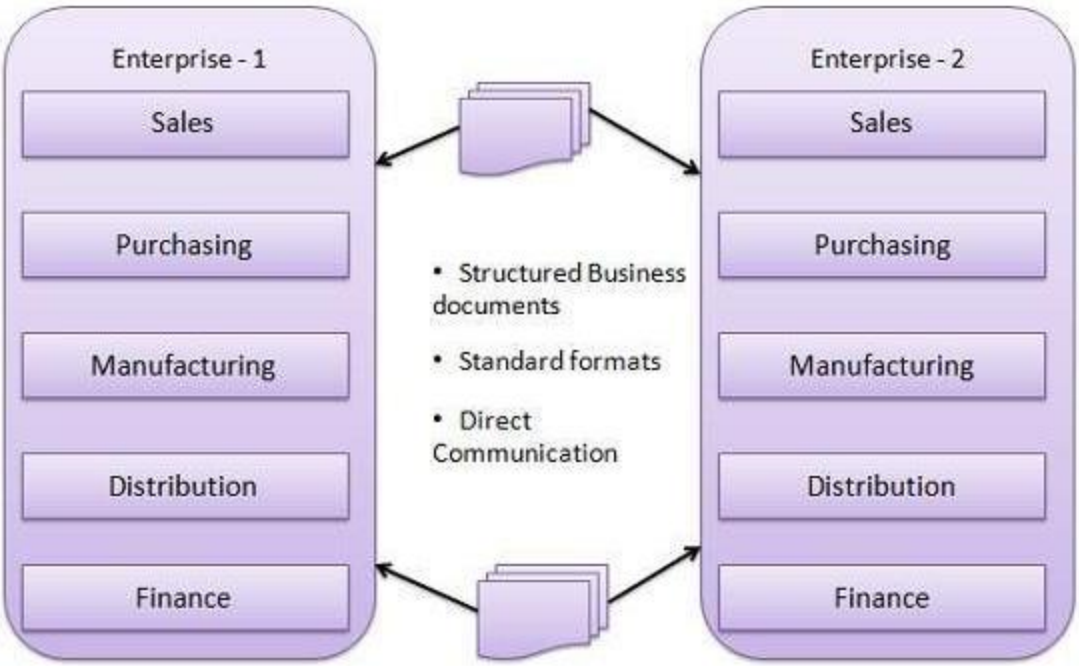


[A simple stage model for buy-side and sell-side e-commerce]

Electronic Data Interchange (EDI) :



- EDI stands for Electronic Data Exchange. EDI is an electronic way of transferring business documents in an organization internally between its various departments or externally with suppliers, customers or any subsidiaries etc. In EDI, paper documents are replaced with electronic documents like word documents, spreadsheets etc.



EDI Documents Following are the few important documents used in EDI:

- Invoices
- Purchase order
- Shipping Requests
- Acknowledgements
- Business Correspondence letters
- Financial information letters

What is EDI? Electronic Data Interchange (EDI) is the **computer-to-computer** exchange of **business documents** in a **standard electronic format** between business partners.

Why EDI?

• Reduction in transaction costs

• Foster closer relationships between trading partners

EDI & Electronic Commerce

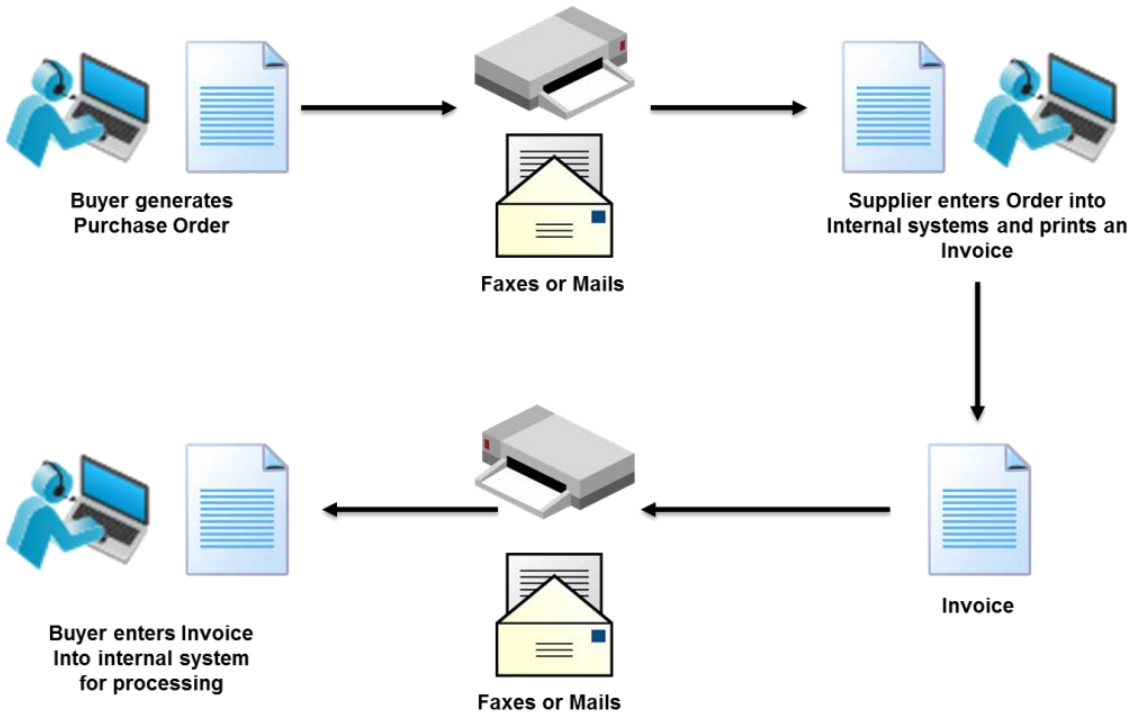
• Electronic commerce includes EDI & much more

• EDI forges boundary less relationships by improving interchange of information between trading partners, suppliers, & customers.

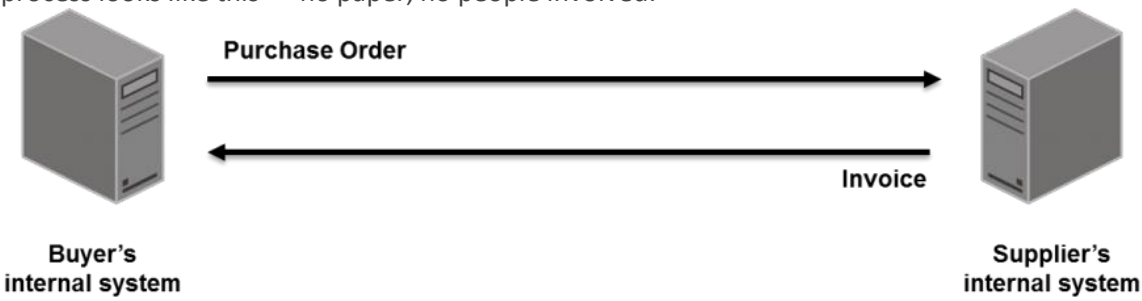
By moving from a paper-based exchange of business document to one that is electronic, businesses enjoy major benefits such as reduced cost, increased processing speed, reduced errors and improved relationships with business partners.

Each term in the definition is significant:

- **Computer-to-computer**– EDI replaces postal mail, fax and email. While email is also an electronic approach, the documents exchanged via email must still be handled by people rather than computers. Having people involved slows down the processing of the documents and also introduces errors. Instead, EDI documents can flow straight through to the appropriate application on the receiver's computer (e.g., the Order Management System) and processing can begin immediately. A typical manual process looks like this, with lots of paper and people involvement:



The EDI process looks like this — no paper, no people involved:



- **Business documents** – These are any of the documents that are typically exchanged between businesses. The most common documents exchanged via EDI are purchase orders, invoices and advance ship notices. But there are many, many others such as bill of lading, customs documents, inventory documents, shipping status documents and payment documents.

- **Standard format**– Because EDI documents must be processed by computers rather than humans, a standard format must be used so that the computer will be able to read and understand the documents. A standard format describes what each piece of information is and in what format (e.g., integer, decimal, mmddyy). Without a standard format, each company would send documents using its company-specific format and, much as an English-speaking person probably doesn't understand Japanese, the receiver's computer system doesn't understand the company-specific format of the sender's format:
    1. There are several EDI standards in use today, including ANSI, EDIFACT, TRADACOMS and ebXML. And, for each standard there are many different versions, e.g., ANSI 5010 or EDIFACT version D12, Release A. When two businesses decide to exchange EDI documents, they must agree on the specific EDI standard and version.
    2. Businesses typically use an EDI translator – either as in-house software or via an EDI service provider – to translate the EDI format so the data can be used by their internal applications and thus enable straight through processing of documents.
    - **Business partners** – The exchange of EDI documents is typically between two different companies, referred to as business partners or trading partners. For example, Company A may buy goods from Company B. Company A sends orders to Company B. Company A and Company B are business partners.

Steps in an EDI System

Following are the steps in an EDI System.

- A program generates the file which contains the processed document.
- The document is converted into an agreed standard format.
- The file containing the document is send electronically on network.
- The trading partner receives the file.
- An acknowledgement document is generated and sent to the originating organization.

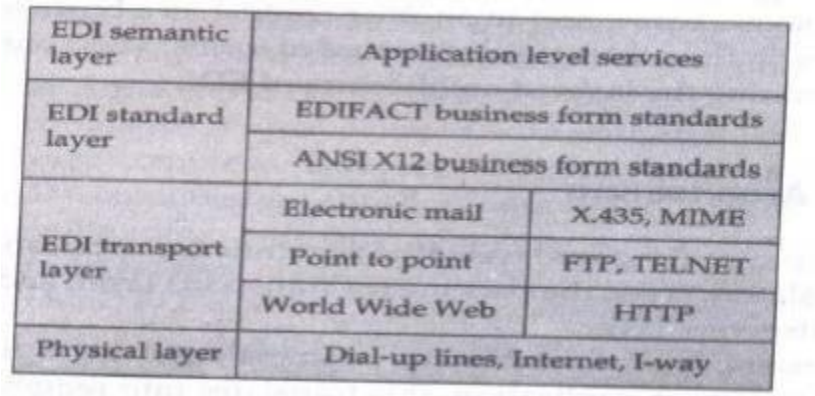
HOW EDI WORKS

- During EDI, information is sent from one participant's computer system and translated to a standard format with special translation software. It is then transmitted to another participant, translated back from the standard format into a format used by the receiver and entered into the receiver's computer system. Thus, EDI allows participants to transfer information between their respective computer systems, even if the systems utilize different, incompatible platforms.
- Before using EDI, companies usually enter into specific agreements with their trading partners (called trading partner agreements or TPAs). These contracts often spell out the kinds of information they will exchange and how they will exchange it. Because entering into and

terminating TPAs is expensive and time consuming, traditional EDI isn't always ideal for companies who change suppliers often, or for companies who frequently enter into temporary relationships with suppliers or other companies.

EDI layered architecture:

- Semantic (or application) layer
- Standards translation layer
- Packing (or transport) layer
- Physical network infrastructure layer



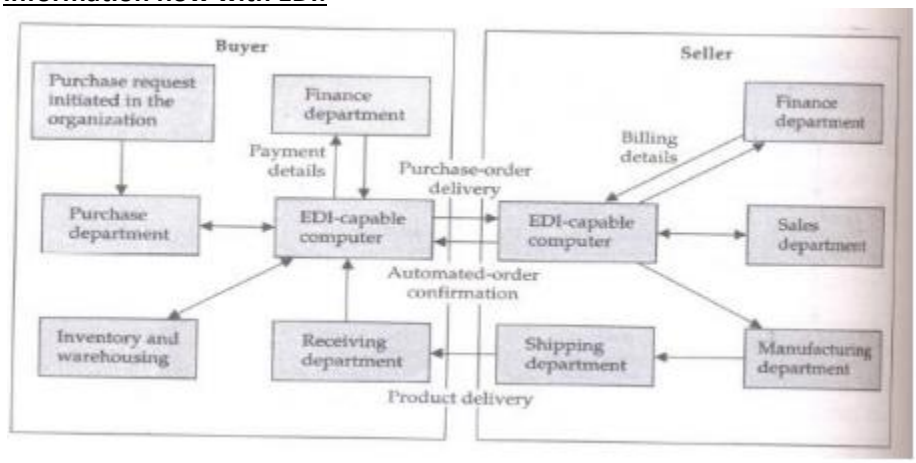
EDI semantic layer	Application level services	
EDI standard layer	EDIFACT business form standards	
	ANSI X12 business form standards	
EDI transport layer	Electronic mail	X.435, MIME
	Point to point	FTP, TELNET
	World Wide Web	HTTP
Physical layer	Dial-up lines, Internet, I-way	

1. **EDI semantic layer:**
   - Describes the business application
   - Procurement example
   – Requests for quotes
   – Price quotes
   – Purchase orders
   – Acknowledgments
   – Invoices
   - Specific to company & software used
2. **Standards translation:**

- Specifies business form structure so that information can be exchanged
  - Two competing standards
  – American National Standards Institute(ANSI)X12
  – EDIFACT developed by UN/ECE, Working Party for the Facilitation of International Trade Procedures.

3. **EDI transport layer**
   - How the business form is sent, e.g. post, UPS, fax
   - Increasingly, e-mail is the carrier
   - Differentiating EDI from e-mail
   – Emphasis on automation
   – EDI has certain legal status
4. **Physical network infrastructure layer**
   - Dial-up lines, Internet, value-added network, etc.

Information flow with EDI:



1. Buyer sends purchase order to seller computer
2. Seller sends purchase order confirmation to buyer
3. Seller sends booking request to transport company
4. Transport company sends booking confirmation to seller
5. Seller sends advance ship notice to buyer
6. Transport company sends status to seller
7. Buyer sends Receipt advice to seller
8. Seller sends invoice to buyer
9. Buyer sends payment to seller

Applications of EDI: It is used in Manufacturing, Shipping, Warehousing, Utilities, Pharmaceuticals, Constructions, Petroleum, Banking, Insurance, Healthcare & Textiles among others.

1. Role of EDI in international trade: Reduced transaction expenditures Quicker movement of imported & exported goods Improved customer service through “track & trace”‖ programs Faster customs clearance & reduced opportunities for corruption, a huge problem in trade

2. Interbank Electronic Funds Transfer (EFT)

• EFTS is credit transfers between banks where funds flow directly from the payer‘s bank to the payee‘s bank.
• The two biggest funds transfer services in the United States are the Federal Reserve‘s system, Fed wire, & the Clearing House Interbank Payments System (CHIPS) of the New York clearing house

3. Health care EDI for insurance EDI

• Providing good & affordable health care is a universal problem
• EDI is becoming a permanent fixture in both insurance & health care industries as medical provider, patients, & payers
• Electronic claim processing is quick & reduces the administrative costs of health care.
• Using EDI software, service providers prepare the forms & submit claims via communication lines to the value-added network service provider
• The company then edits sorts & distributes forms to the payer. If necessary, the insurance company can electronically route transactions to a third-party for price evaluation
• Claims submission also receives reports regarding claim status & request for additional Information

4. Manufacturing & retail procurement using EDI

• These are heavy users of EDI
• In manufacturing, EDI is used to support just-in-time.
• In retailing, EDI is used to support quick response

Advantages of an EDI System

Following are the advantages of an EDI System.

- **Reduction in data entry errors.** − Chances of errors are much less being use of computer in data entry.
- **Shorter processing life cycle** − As orders can be processed as soon as they are entered into the system. This reduced the processing time of the transfer documents.
- **Electronic form of data** − It is quite easy to transfer or share data being in electronic format.
- **Reduction in paperwork** − As lot of paper documents are replaced with electronic documents there is huge reduction in paperwork.
- **Cost Effective** − As time is saved and orders are processed very effectively, EDI proves to be higly cost effective.

Disadvantages of EDI:

- Since EDI is a Structured way of working, companies usually change operating procedures.
- Less transparent than paper based systems.
- Certain EDI systems are highly flexible, others are very simple to implement.
- The implementation of the infrastructure will cost a lot of time, money and man power (e.g. for training and integration).

Conclusion of Electronic Data Interchange (EDI)

• It provides a standardized system
• Coding trade transactions
• Communicated from one computer to another without the need for printed orders and invoices & delays & errors in paper handling
• It is used by organizations that a make a large no. of regular transactions Example: EDI is used in the large market chains for transactions with their suppliers

EDI is a concept to electronically interchange of trade documents. EDI can save a lot of money if an effective number of partners is identified. If this number is too small EDI can although be inefficient. The investment will be "money thrown down the drain".

Supply Chain Management Using internet Technology :

Supply Chain Management (SCM) is also called "extending", which means integrating the internal and external partners on the supply and process chains to get raw materials to the manufacturer and finished products to the consumer .

It includes following functions :

- Supplier management: The goal is to reduce the number of suppliers and get them to partners.
- Inventory management: The goal is to shorten the order-ship-bill cycle. When a majority of partners are electronically linked, information faxed or mailed.
- Distribution management: The goal is to move documents (accurate data) related to shipping .
- Channel management: The goal is to quickly disseminate information about changing operational conditions (technical, product, and pricing information) to trading partners .
- Payment management: The goal is to link company and the suppliers and distributors so that payments can be sent and received electronically.
- Financial management: The goal is to enable global companies to manage their money in various foreign exchange accounts.
- Sales force productivity: The goal is to improve the communication flow of information among the sales, customer & production functions.

In sum, the supply chain management process increasingly depends on electronic markets Work.

Components Of Supply Chain Management: The following are five basic components of SCM.

Plan: This is the strategic portion of SCM. You need a strategy for managing all the resources that go toward meeting customer demand for your product or service. A big piece of planning is developing a set of metrics to monitor the supply chain so that it is efficient, costs less and delivers high quality and value to customers.

Source: Choose the suppliers that will deliver the goods and services you need to create your product. Develop a set of pricing, delivery and payment processes with suppliers and create metrics for monitoring and improving the relationships. And put together processes for managing the inventory of goods and services you receive from suppliers, including receiving shipments, verifying them, transferring them to your manufacturing facilities and authorizing supplier payments.

Make: This is the manufacturing step. Schedule the activities necessary for production, testing, packaging and preparation for delivery. As the most metric-intensive portion of the supply chain, measure quality levels, production output and worker productivity.

Deliver: This is the part that many insiders refer to as logistics. Coordinate the receipt of orders from customers, develop a network of warehouses, pick carriers to get products to customers and set up an invoicing system to receive payments.

Return: The problem part of the supply chain. Create a network for receiving defective and excess products back from customers and supporting customers who have problems with delivered products.

E-Marketing:

- E-marketing is directly marketing a commercial message to a group of people using email. In its broadest sense, every email sent to a potential or current customer could be considered email marketing.
- It usually involves using email to send ads, request business, or solicit sales or donations, and is meant to build loyalty, trust, or brand awareness.
- Email marketing can be done to either sold lists or a current customer database. Broadly, the term is usually used to refer to sending email messages with the purpose of enhancing the relationship of a merchant with its current or previous customers, to encourage customer loyalty and repeat business, acquiring new customers or convincing current customers to purchase something immediately, and adding advertisements to email messages sent by other companies to their customers.

Advantages:

- An exact return on investment can be tracked and has proven to be high when done properly. Email marketing is often reported as second only to search marketing as the most effective online marketing tactic.
- Email marketing is significantly cheaper and faster than traditional mail, mainly because of high cost and time required in a traditional mail campaign for producing the artwork, printing, addressing and mailing. Advertisers can reach substantial numbers of email subscribers who have opted in (i.e., consented) to receive email communications on subjects of interest to them.
- Almost half of American Internet users check or send email on a typical day with email blasts that are delivered between 1 am and 5 am local time outperforming those sent at other times in open and click rates.
- Email is popular with digital marketers, rising an estimated 15% in 2009 to £292 m in the UK.
- If compared to standard email, direct email marketing produces higher response rate and higher average order value for e-commerce businesses.

Disadvantages:

- A report issued by the email services company Return Path, as of mid-2008 email deliverability is still an issue for legitimate marketers. According to the report, legitimate email servers averaged a delivery rate of 56%; twenty percent of the messages were rejected, and eight percent were filtered.
- Companies considering the use of an email marketing program must make sure that their program does not violate spam laws such as the United States' Controlling the Assault of Non-Solicited Pornography and Marketing Act (CAN-SPAM),the European Privacy and Electronic Communications Regulations 2003, or their Internet service provider's acceptable use policy.

Tele Marketing:

- Telemarketing is a method of direct marketing in which a salesperson solicits prospective customers to buy products or services, either over the phone or through a subsequent face to face or Web conferencing appointment scheduled during the call.
- Telemarketing can also include recorded sales pitches programmed to be played over the phone via automatic dialing.
- Telemarketing may be done from a company office, from a call center, or from home. It may involve a live operator voice broadcasting which is most frequently associated with political messages.
- An effective telemarketing process often involves two or more calls. The first call (or series of calls) determines the customer‘s needs. The final call (or series of calls) motivates the customer to make a purchase. Prospective customers are identified by various means, including past purchase history, previous requests for information, credit limit, competition entry forms, and application forms. Names may also be purchased from another company's consumer database or obtained from a telephone directory or another public list. The qualification process is intended to determine which customers are most likely to purchase the product or service.
- Charitable organizations, alumni associations, and political parties often use telemarketing to solicit donations. Marketing research companies use telemarketing techniques to survey the prospective or past customers of a client‘s business in order to assess market acceptance of or satisfaction with a particular product, service, brand, or company. Public opinion polls are conducted in a similar manner. Telemarketing techniques are also applied to other forms of electronic marketing using email or fax messages, in which case they are frequently considered spam by receivers.

Disadvantages:

- Telemarketing has been negatively associated with various scams and frauds, such as pyramid schemes, and with deceptively overpriced products and services
- Telemarketing is often criticized as an unethical business practice due to the perception of high-pressure sales techniques during unsolicited calls.
- Telemarketers marketing telephone companies may participate in telephone slamming, the practice of switching a customer's telephone service without their knowledge or authorization.
- Telemarketing calls are often considered an annoyance, especially when they occur during the dinner hour, early in the morning, or late in the evening.

FOUR C’S

1. Technological Convergences
2. Collaborative Computing
3. Content Management
4. Call Center

1.Technological convergence:

- Technological convergence is the tendency that as technology changes, different technological systems sometimes evolve toward performing similar tasks.
- Digital convergence refers to the convergence of four industries into one conglomerate, ITTCE (Information Technologies, Telecommunication, Consumer Electronics, and Entertainment).Previously separate technologies such as voice data and productivity applications, and video can now share resources and interact with each other synergistically.
- Telecommunications convergence, network convergence or simply convergence are broad terms used to describe emerging telecommunications technologies, and network architecture used to migrate multiple communications services into a single network.
- Convergence in this instance is defined as the interlinking of computing and other information technologies, media content, and communication networks that has arisen as the result of the evolution and popularization of the Internet as well as the activities, products and services that have emerged in the digital media space.
- Convergent services, such as VoIP, IPTV, Mobile TV, Smart TV, and others, tend to replace the older technologies and thus can disrupt markets. IP-based convergence is inevitable and will result in new service and new demand in the market.

Technology Implications:
Convergent solutions include both fixed-line and mobile technologies. Recent examples of new, convergent services include:
Using the Internet for voice telephony

Video on demand

Fixed-mobile convergence

Mobile-to-mobile convergence

Location-based services

Integrated products and bundles

Convergent technologies can integrate the fixed-line with mobile to deliver convergent solutions. Convergent technologies include:
IP Multimedia Subsystem

Session Initiation Protocol

IPTV

Voice over IP

Voice call continuity

Digital video broadcasting - handheld

2.Collaborative Computing/Product Devlopment

- CPD is a business strategy, work process and collection of software applications that facilitates different organizations to work together on the development of a product. It is also known as collaborative product definition management (cPDM).
- Collaborative Product Development helps individual users and companies manage, share and view your CAD projects without the cost and complexity of purchasing an entire PDM or PLM solution. CPD comes in the form of a Software as a service delivery model, which allows for rapid iterations and little or no downloads and installs.
- Exactly what technology comes under this title does vary depending on whom one asks; however, it usually consists of the **Product Lifecycle Management (PLM)** areas of: Product Data Management (PDM); Product visualization; team collaboration and conferencing tools; and supplier sourcing software. It is generally accepted as not including CAD geometry tools, but does include data translation technology.

Technologies and methods used:

Clearly general collaborative software such as email and chat (instant messaging) is used within the CPD process. One important technology is application and desktop sharing, allowing one person to view what another person is doing on a remote machine. For CAD and product visualization applications an 'appshare' product that supports OpenGL graphics is required. Another common application is Data sharing via Web based portals.

Specific to product data

With product data an important addition is the handling of high volumes of geometry and metadata. Exactly what techniques and technology is required depends on the level of collaboration being carried out and the commonality (or lack thereof) of the partner sites' systems.

Specific to PLM and CAx collaboration of Collaborative Product

Collaboration using **PLM and CAx** tools requires technology to support the needs of:
1. People: Personnel of different disciplines and skill levels;
2. Organizations: Organizations throughout an enterprise or extended enterprise with different rules, processes and objectives;
3. Data: Data from different sources in different formats.

Appropriate technologies are required to support collaboration across these boundaries.

1. **People:** Effective PLM collaboration will typically require the participation of people who do not have high level CAD skills. This requires improved user interfaces including tailorable user interfaces that can be tailored to the skill level and specialty of the user.

Improved visualization capabilities, especially those that provide a meaningful view of complex information such as the results of a fluid flow analysis will leverage the value of all participants in the collaboration process. Effective collaboration requires that a participant be freed from the burden of knowing the intent history typically imbedded within and constricting the use of parametric models.

2. **Organizations**

Community collaboration requires that companies, suppliers, and customers share information in a secure environment, ensure compliance with enterprise and regulatory rules and enforce the process management rules of the community as well as the individual organizations.

3. **Data**
   The most basic collaboration data need is the ability to operate in a MultiCAD environment. That is, however, only the beginning. Models from multiple CAD sources must be assembled into an active digital mockup allowing change and/or design in context.

3.Content Management System:

- A content management system (CMS) is a computer application that allows publishing, editing and modifying content, organizing, deleting as well as maintenance from a central interface. Such systems of content management provide procedures to manage workflow in a collaborative environment.
- CMSs are often used to run websites containing blogs, news, and shopping. Many corporate and marketing websites use CMSs. CMSs typically aim to avoid the need for hand coding, but may support it for specific elements or entire pages.

Main features of CMS:

- The function and use of content management systems is to store and organize files, and provide version-controlled access to their data. CMS features vary widely. Simple systems showcase a handful of features, while other releases, notably enterprise systems, offer more complex and powerful functions. Most CMS include Web-based publishing, format management, revision control (version control), indexing, search, and retrieval. The CMS increments the version number when new updates are added to an already-existing file. Some content management systems also support the separation of content and presentation.
- A CMS may serve as a central repository containing documents, movies, pictures, phone numbers, scientific data. CMSs can be used for storing, controlling, revising, semantically enriching and publishing documentation.

The content management system (CMS) has two elements:

- Content management application (CMA) is the front-end user interface that allows a user, even with limited expertise, to add, modify and remove content from a Web site without the intervention of a Webmaster.
- Content delivery application (CDA) compiles that information and updates the Web site.

3.Content marketing:

- Content marketing is any marketing that involves the creation and sharing of media and publishing content in order to acquire and retain customers.
- It is a strategic marketing approach focused on creating and distributing valuable, relevant, and consistent content to attract and retain a clearly-defined audience — and, ultimately, to drive profitable customer action.

- Basically, content marketing is the art of communicating with your customers and prospects without selling.
- It is non-interruption marketing. Instead of pitching your products or services, you are delivering information that makes your buyer more intelligent.

4.Call centre:

- A call centre is a centralised office used for receiving or transmitting a large volume of requests by telephone.
- An inbound call centre is operated by a company to administer incoming product support or information inquiries from consumers.
- Outbound call centers are operated for telemarketing, solicitation of charitable or political donations, debt collection and market research.
- A contact centre is a location for centralised handling of individual communications, including letters, faxes, live support software, social media, instant message, and e-mail.
- A call centre has an open workspace for call centre agents, with work stations that include a computer for each agent, a telephone set/headset connected to a telecom switch, and one or more supervisor stations. It can be independently operated or networked with additional centres, often linked to a corporate computer network, including mainframes, microcomputers and LANs.
- The contact centre is a central point from which all customer contacts are managed. Through contact centres, valuable information about company are routed to appropriate people, contacts to be tracked and data to be gathered. It is generally a part of company‘s customer relationship management.

Components of call centre: There are 6 key components which should be integrated into the call centre operation:

- Location, building and facilities
- Customer
- Technology
- Process
- People
- Finance and business management

Location, building and facilities Where a centre is located is critical in terms of the cost of the building but more importantly the ability to recruit and retain employees to work in the centre. The ease and cost to get to a centre is important for those employed in the centre but also in the integration with the Head Office functions that the centre needs to work with. The facilities

and working environment is more critical than for functional line departments because of the intensity with which the Agents have to sit at their desks and the need to manage resource patterns. Visiting a call centre and looking at how it might feel to work in it will be extremely telling as to how good the centres performance is, but also how the organisation view and treat their employees.

Customer Customers can be anyone, and the Agent needs to have the skills to be able to adapt their style and vocabulary to suit different customer types. The Agent talks to more customers in any one day that any other person in the organisation. If you want to know what is going on with customers, ask the Agents! With average call durations of less than 3 minutes, how do you form a relationship and build loyalty from a customer in that time. That is one of the biggest challenges that the Agents face, especially given many customers do not like the impersonal touch that call centres often provide.

Technology There are significant amounts of technology available and it is very easy to be bamboozled by it all! It very much depends on the size and nature of your business as to what you require. The basic equipment to handle calls is the Automated Call Distributor but these can range from basic to a Rolls Royce! Many centres do not fully utilise the technology that they have. In addition there is usually a disjoint between what the technology can do and what it is actually used for.

Process Every centre has a multitude of processes, but the biggest challenge that it faces is to understand the end to end process from the customer perspective. The customer journey is what happens from the point in time when a customer decides to contact you through to the completion of that request or transaction. How long does this journey take and what does it feel like taking the steps along the way. How long is spent waiting? Does the agent have the customer details to hand? Can the agent answer the query first time? Does the fulfilment when expected? One very easy but critical way of looking at the customer journey is to mystery shop the centre and to see what it really feels like to be the customer. Put yourselves in the shoes of your key customer demographic type and call your own centre today.

Finance and business management There will be more management information statistics in a call centre than in any other part of the organisation. The centre is measured from every different angle but unfortunately, this does not always give a complete picture! One of the most challenging roles is the planning, measuring and reviewing of performance because so many centres are under pressure from calls and other expectations, that being able to step back and take an objective view maybe difficult. Most centres are run to very tight budgets so factors such as turnover of staff will have a huge impact.

Supply Chain Management: It is the process of planning, implementing, and controlling the operations of the supply chain with the purpose to satisfy customer requirements as efficiently as possible. Supply chain management spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point-of-origin to point-of-consumption.

Supply chain management must address the following problems:
Distribution Network Configuration: Number and location of suppliers, production facilities, distribution centers, warehouses and customers.
Distribution Strategy: Centralized versus decentralized, direct shipment, cross docking, pull or push strategies, third party logistics.
Information: Integrate systems and processes through the supply chain to share valuable information, including demand signals, forecasts, inventory and transportation.
Inventory Management: Quantity and location of inventory including raw materials, workin-process and finished goods.

Features Of Supply Chain Management:

In electronic commerce, supply chain management has the following features.

- An ability to source raw material or finished goods from anywhere in the world
- A centralized, global business and management strategy with flawless local execution
- On-line, real-time distributed information processing to the desktop, providing total supply chain information visibility
- The ability to manage information not only within a company but across industries and enterprises
- The seamless integration of all supply chain processes and measurements, including thirdparty suppliers, information systems, cost accounting standards, and measurement systems
- The development and implementation of accounting models such as activity based costing that link cost to performance are used as tools for cost reduction
- A reconfiguration of the supply chain organization into high-performance teams going from the shop floor to senior management.

Components Of Supply Chain Management:

The following are five basic components of SCM.

1. Plan: This is the strategic portion of SCM. You need a strategy for managing all the resources that go toward meeting customer demand for your product or service. A big piece of planning is developing a set of metrics to monitor the supply chain so that it is efficient, costs less and delivers high quality and value to customers.

2. Source: Choose the suppliers that will deliver the goods and services you need to create your product. Develop a set of pricing, delivery and payment processes with suppliers and create metrics for monitoring and improving the relationships. And put together processes for managing the inventory of goods and services you receive from suppliers, including receiving shipments, verifying them, transferring them to your manufacturing facilities and authorizing supplier payments.

3. Make: This is the manufacturing step. Schedule the activities necessary for production, testing, packaging and preparation for delivery. As the most metric-intensive portion of the supply chain, measure quality levels, production output and worker productivity.

4. Deliver: This is the part that many insiders refer to as logistics. Coordinate the receipt of orders from customers, develop a network of warehouses, pick carriers to get products to customers and set up an invoicing system to receive payments.
5. Return: The problem part of the supply chain. Create a network for receiving defective and excess products back from customers and supporting customers who have problems with delivered products.

Measuring A Supply Chain's Performance: The performance of a supply chain is evaluated by how it reduces cost or increases value. SCM performance monitoring is important; in many industries, the supply chain represents roughly 75 percent of the operating budget expense. Three common measures of performance are used when evaluating SCM performance:

1. Efficiency focuses on minimizing cost by decreasing the inventory investment or value relative to the cost of goods sold. An efficient firm is therefore one with a higher inventory turnover or fewer weeks' worth of inventory on hand.
2. Responsiveness focuses on reduction in both inventory costs and missed sales that comes with a faster, more flexible supply chain. A responsive firm is proficient in an uncertain market environment, because it can quickly adjust production to meet demand.
3. Effectiveness of the supply chain relates to the degree to which the supply chain creates value for the customer. Effectiveness-focused supply chains are called ―value chains‖ because they focus more on creating customer value than reducing costs and improving productivity.

To examine the effect of the Internet and electronic commerce on the supply chain is to examine the impact the Internet has on the efficiency, responsiveness, effectiveness, and overall performance of the supply chain.

Advantages of Internet/E-Commerce Integrated Supply Chain:

The primary advantages of Internet utilization in supply chain management are speed, decreased cost, flexibility, and the potential to shorten the supply chain.
1. Speed: A competitive advantage accrues to those firms that can quickly respond to changing market conditions. Because the Internet allows near instantaneous transfer of information between various links in the supply chain, it is ideally suited to help firms keep pace with their environments. Many businesses have placed a priority upon real-time information regarding the status of orders and production from other members of the supply chain.
2. Cost decrease: Internet-based electronic procurement helps reduce costs by decreasing the use of paper and labor, reducing errors, providing better tracking of purchase orders and goods delivery, streamlining ordering processes, and cutting acquisition cycle times.
3. Flexibility: The Internet allows for custom interfaces between a company and its different clients, helping to cost-effectively establish mass customization. A manufacturer can easily create a custom template or Web site for a fellow supply chain member with pre-negotiated prices for various products listed on the site, making re-ordering only a mouse click away. The information regarding

this transaction can be sent via the Internet to the selling firm‘s production floor and the purchasing firm‘s purchasing and accounting departments. The accuracy and reliability of the information is greater than the traditional paper and pencil transaction, personnel time and expense is reduced, and the real-time dissemination of the relevant information to interested parties improves responsiveness. These advantages can benefit both firms involved in the transaction.

4. Shortening the supply chain: Dell computers has become a classic example of the power the Internet can have on a supply chain. Dell helped create one of the first fully Internet-enabled supply chains and revolutionized the personal-computer industry by selling directly to businesses and consumers, rather than through retailers and middlemen. In mid-1996, Dell began allowing consumers to configure and order computers online. By 1998, the company recorded roughly $1 billion in —pure‖ Internet orders. By reducing sales costs and attracting customers who spend more per transaction, Dell estimates that it yields 30 percent greater profit margins on Internet sales compared to telephone sales.

Disadvantages of Internet/E-Commerce Integrated Supply Chain:

Increased interdependence: Increased commoditization, increased competition, and shrinking profit margins are forcing companies to increase outsourcing and subcontracting to minimize cost. By focusing on its core competencies, a firm should be able to maximize its economies of scale and its competitiveness. However, such a strategy requires increased reliance and information sharing between members of the supply chain. Increased dependency on various members of the supply chain can have disastrous consequences if these supply chain members are unable to handle the functions assigned to them.

The costs of implementation: Implementation of a fully-integrated Internet-based supply chain is expensive. This expense includes hardware cost, software cost, reorganization cost, and training costs. While the Internet promises many advantages once it is fully integrated into a supply chain, a significant up front investment is needed for full deployment.

Keeping up with the change in expectations: Expectations have increased as Internet use has become part of daily life. When customers send orders electronically, they expect to get a quick confirmation and delivery or denial if the order can not be met. Increasingly, in this and other ways, customers are dictating terms and conditions to suppliers. The introduction of Internet-based supply chains make possible the change to a pull‖ manufacturing strategy replacing the traditional push‖ strategy that has been the standard in most industries.

Tele Marketing:

- Telemarketing is a method of direct marketing in which a salesperson solicits prospective customers to buy products or services, either over the phone or through a subsequent face to face or Web conferencing appointment scheduled during the call.

Telemarketing can also include recorded sales pitches programmed to be played over the phone via automatic dialing.

- Telemarketing may be done from a company office, from a call center, or from home. It may involve a live operator voice broadcasting which is most frequently associated with political messages.
- An effective telemarketing process often involves two or more calls. The first call (or series of calls) determines the customer's needs. The final call (or series of calls) motivates the customer to make a purchase. Prospective customers are identified by various means, including past purchase history, previous requests for information, credit limit, competition entry forms, and application forms. Names may also be purchased from another company's consumer database or obtained from a telephone directory or another public list. The qualification process is intended to determine which customers are most likely to purchase the product or service.
- Charitable organizations, alumni associations, and political parties often use telemarketing to solicit donations. Marketing research companies use telemarketing techniques to survey the prospective or past customers of a client's business in order to assess market acceptance of or satisfaction with a particular product, service, brand, or company. Public opinion polls are conducted in a similar manner.
- Telemarketing techniques are also applied to other forms of electronic marketing using email or fax messages, in which case they are frequently considered spam by receivers.

Disadvantages:

- Telemarketing has been negatively associated with various scams and frauds, such as pyramid schemes, and with deceptively overpriced products and services
- Telemarketing is often criticized as an unethical business practice due to the perception of high-pressure sales techniques during unsolicited calls.
- Telemarketers marketing telephone companies may participate in telephone slamming, the practice of switching a customer's telephone service without their knowledge or authorization.
- Telemarketing calls are often considered an annoyance, especially when they occur during the dinner hour, early in the morning, or late in the evening.

Security Threats to E-commerce:

E-Commerce security requirements can be studied by examining the overall process, beginning with the consumer and ending with the commerce server. Considering each logical link in the commerce chain, the assets that must be protected to ensure secure e-commerce include client computers, the messages travelling on the communication channel, and the web and commerce servers – including any hardware attached to the servers. While telecommunications are certainly one of the major assets to be protected, the telecommunications links are not the only concern in computer and e-commerce security. For instance, if the telecommunications links

were made secure but no security measures were implemented for either client computers or commerce and web-servers, then no communications security would exist at all.

Client threats : Until the introduction of executable web content, Web pages were mainly static. Coded in HTML, static pages could do little more than display content and provide links to related pages with additional information. However, the widespread use of active content has changed this perception.

Active content: Active content refers to programs that are embedded transparently in web pages and that cause action to occur. Active content can display moving graphics, download and play audio, or implement web-based spreadsheet programs. Active content is used in e-commerce to place items one wishes to purchase into a shopping cart and to compute the total invoice amount, including sales tax, handling, and shipping costs. The best known active content forms are Java applets, ActiveX controls, JavaScript, and VBScript.

Malicious codes: Computer viruses, worms and trojan horses are examples of malicious code. A trojan horse is a program which performs a useful function, but performs an unexpected action as well. Virus is a code segment which replicates by attaching copies to existing executables. A worm is a program which replicates itself and causes execution of the new copy. These can create havoc on the client side.

Server-side masquerading: Masquerading lures a victim into believing that the entity with which it is communicating is a different entity. For example, if a user tries to log into a computer across the internet but instead reaches another computer that claims to be the desired one, the user has been spoofed. This may be a passive attack (in which the user does not attempt to authenticate the recipient, but merely accesses it), but it is usually an active attack.

Communication channel threats: The internet serves as the electronic chain linking a consumer (client) to an e-commerce resource. Messages on the internet travel a random path from a source node to a destination node. The message passes through a number of intermediate computers on the network before reaching the final destination. It is impossible to guarantee that every computer on the internet through which messages pass is safe, secure, and non-hostile.

Confidentiality threats: Confidentiality is the prevention of unauthorized information disclosure. Breaching confidentiality on the internet is not difficult. Suppose one logs onto a website – say www.anybiz.com – that contains a form with text boxes for name, address, and email address. When one fills out those text boxes and clicks the submit button, the information is sent to the web-server for processing. One popular method of transmitting data to a web-server is to collect the text box responses and place them at the end of the target server‘s URL. The captured data and the HTTP request to send the data to the server is then sent. Now, suppose the user changes his mind, decides not to wait for a response from the anybiz.com server, and

jumps to another website instead – say www.somecompany.com. The server somecompany.com may choose to collect web demographics and log the URL from which the user just came (www.anybiz.com). By doing this, somecompany.com has breached confidentiality by recording the secret information the user has just entered.

Integrity threats: An integrity threat exists when an unauthorized party can alter a message stream of information. Unprotected banking transactions are subject to integrity violations. Cyber vandalism is an example of an integrity violation. Cyber vandalism is the electronic defacing of an existing website page. Masquerading or spoofing – pretending to be someone you are not or representing a website as an original when it really is a fake – is one means of creating havoc on websites. Using a security hole in a domain name server (DNS), perpetrators can substitute the address of their website in place of the real one to spoof website visitors. Integrity threats can alter vital financial, medical, or military information. It can have very serious consequences for businesses and people.

Availability threats: The purpose of availability threats, also known as delay or denial threats, is to disrupt normal computer processing or to deny processing entirely. For example, if the processing speed of a single ATM machine transaction slows from one or two seconds to 30 seconds, users will abandon ATM machines entirely. Similarly, slowing any internet service will drive customers to competitors' web or commerce sites.

Server threats: The server is the third link in the client-internet-server trio embodying the e-commerce path between the user and a commerce server. Servers have vulnerabilities that can be exploited by anyone determined to cause destruction or to illegally acquire information.

Web-server threats: Web-server software is designed to deliver web pages by responding to HTTP requests. While web-server software is not inherently high-risk, it has been designed with web service and convenience as the main design goal. The more complex the software is, the higher the probability that it contains coding errors (bugs) and security holes – security weaknesses that provide openings through which evildoers can enter.

Commerce server threats: The commerce server, along with the web-server, responds to requests from web browsers through the HTTP protocol and CGI scripts. Several pieces of software comprise the commerce server software suite, including an FTP server, a mail server, a remote login server, and operating systems on host machines. Each of this software can have security holes and bugs.

Database threats: E-commerce systems store user data and retrieve product information from databases connected to the web-server. Besides product information, databases connected to the web contain valuable and private information that could irreparably damage a company if it were disclosed or altered. Some databases store username/password pairs in a non-secure way.

If someone obtains user authentication information, then he or she can masquerade as a legitimate database user and reveal private and costly information.

Common gateway interface threats: A common gateway interface (CGI) implements the transfer of information from a web-server to another program, such as a database program. CGI and the programs to which they transfer data provide active content to web pages. Because CGIs are programs, they present a security threat if misused. Just like web-servers, CGI scripts can be set up to run with their privileges set to high – unconstrained. Defective or malicious CGIs with free access to system resources are capable of disabling the system, calling privileged (and dangerous) base system programs that delete files, or viewing confidential customer information, including usernames and passwords.

Password hacking: The simplest attack against a password-based system is to guess passwords. Guessing of passwords requires that access to the complement, the complementation functions, and the authentication functions be obtained. If none of these have changed by the time the password is guessed, then the attacker can use the password to access the system.

Security Requirements For E-Commerce:

Authentication: This is the ability to say that an electronic communication (whether via email or web) does genuinely come from who it supports to, Without face-to-face contact, passing oneself off as someone else is not difficult on the internet. In online commerce the best defence against being misled by an imposter is provided by unforgeable digital certificates from a trusted authority (such as VeriSign). Although anyone can generate digital certificates for themselves, a trusted authority demands real-world proof of identity and checks its validity before issuing a digital certificate. Only certificates from trusted authorities will be automatically recognized and trusted by the major web browser and email client software. Authentication can be provided in some situations by physical tokens (such as a drivers license), by a piece of information known only to the person involved (eg. a PIN), or by a physical property of a person (fingerprints or retina scans). Strong authentication requires at least two or more of these. A digital certificate provides strong authentication as it is a unique token and requires a password for its usage.

Privacy:

In online commerce, privacy is the ability to ensure that information is accessed and changed only by authorized parties. Typically this is achieved via encryption. Sensitive data (such as credit card details, health records, sales figures etc.) are encrypted before being transmitted across the open internet – via email or the web. Data which has been protected with strong 128-bit encryption may be intercepted by hackers, but cannot be decrypted by them within a short time. Again, digital certificates are used here to encrypt email or establish a secure HTTPS

connection with a web-server. For extra security, data can also be stored long-term in an encrypted format.

Authorization: Authorization allows a person or computer system to determine if someone has the authority to request or approve an action or information. In the physical world, authentication is usually achieved by forms requiring signatures, or locks where only authorized individuals hold the keys. Authorization is tied with *authentication*. If a system can securely verify that a request for information (such as a web page) or a service (such as a purchase requisition) has come from a known individual, the system can then check against its internal rules to see if that person has sufficient authority for the request to proceed. In the online world, authorization can be achieved by a manager sending a digitally signed email. Such an email, once checked and verified by the recipient, is a legally binding request for a service. Similarly, if a web-server has a restricted access area, the server can request a digital certificate from the user's browser to identify the user and then determine if they should be given access to the information according to the server's permission rules.

Integrity: Integrity of information means ensuring that a communication received has not been altered or tampered with. Traditionally, this problem has been dealt with by having tight control over access to paper documents and requiring authorized officers to initial all changes made – a system with obvious drawbacks and limitations. If someone is receiving sensitive information online, he not only wants to ensure that it is coming from who he expects it to (authentication), but also that it hasn't been intercepted by a hacker while in transit and its contents altered. The speed and distances involved in online communications requires a very different approach to this problem from traditional methods. One solution is afforded by using digital certificates to digitally ―sign‖ messages. A travelling employee can send production orders with integrity to the central office by using their digital certificate to sign their email. The signature includes a hash of the original message – a brief numerical representation of the message content. When the recipient opens the message, his email software will automatically create a new hash of the message and compare it against the one included in the digital signature. If even a single character has been altered in the message, the two hashes will differ and the software will alert the recipient that the email has been tampered with during transit.

E-Payment System:

Electronic payment systems are central to on-line business process as companies look for ways to serve customers faster and at lower cost. Emerging innovations in the payment for goods and services in electronic commerce promise to offer a wide range of new business opportunities. Electronic payment systems and e-commerce are highly linked given that on-line consumers must pay for products and services. Clearly, payment is an integral part of the mercantile process and prompt payment is crucial. If the claims and debits of the various participants (consumers, companies and banks) are not balanced because of payment delay, then the entire business chain is disrupted. Hence an important aspect of e-commerce is prompt and secure payment, clearing, and settlement of credit or debit claims.

Electronic payment systems are becoming central to on-line business transactions nowadays as companies look for various methods to serve customers faster and more cost effectively. Electronic commerce brings a wide range of new worldwide business opportunities. There is no doubt that electronic payment systems are becoming more and more common and will play an important role in

the business world. Electronic payment always involves a payer and a payee who exchange money for goods or services. At least one financial institution like a bank will act as the issuer (used by the payer) and the acquirer (used by the payee).

Types of Electronic Payment Systems: Electronic payment systems are proliferating in banking, retail, health care, on-line markets, and even government—in fact, anywhere money needs to change hands.

- Organizations are motivated by the need to deliver products and services more cost effectively and to provide a higher quality of service to customers.
- The emerging electronic payment technology labeled electronic funds transfer (EFT).
- EFT is defined as —any transfer of funds initiated through an electronic terminal telephonic instrument, or computer or magnetic tape so as to order, instruct, or authorize a financial institution.

EFT can be segmented into three broad categories:

1. Banking and financial payments:
    - Large-scale or wholesale payments (e.g., bank-to-bank transfer)
    - Small-scale or retail payments (e.g., automated teller machines
    - Home banking (e.g., bill payment)
2. Retailing payments:
    - Credit Cards (e.g., VISA or MasterCard)
    - Private label credit/debit cards (e.g., J.C. Penney Card)
    - Charge Cards (e.g., American Express)
3. On-line electronic commerce payments:
    a) Token-based payment systems:
        - Electronic cash (e.g., DigiCash)
        - Electronic checks (e.g., NetCheque)
        - Smart cards or debit cards (e.g., Mondex Electronic Currency Card)
    b) Credit card-based payments systems:
        - Encrypted Credit Cards (e.g., World Wide Web form-based encryption)
        - Third-party authorization numbers (e.g., First Virtual)

E-Cash:

- There are many ways that exist for implementing an e-cash system, all must incorporate a few common features.
- Electronic Cash is based on cryptographic systems called —digital signatures‖.
- This method involves a pair of numeric keys: one for locking (encoding) and the other for unlocking (decoding).

E-cash must have the following four properties.

Monetary value

Interoperability

Retrievability

Security

- Electronic cash is a general term that describes the attempts of several companies to create value storage and exchange system that operates online in much the same way that government-issued currency operates in the physical world.
- Concerns about electronic payment methods include: –
- Privacy
- Security
- Independence
- Portability

Electronic Cash Storage:

Two methods –

On-line

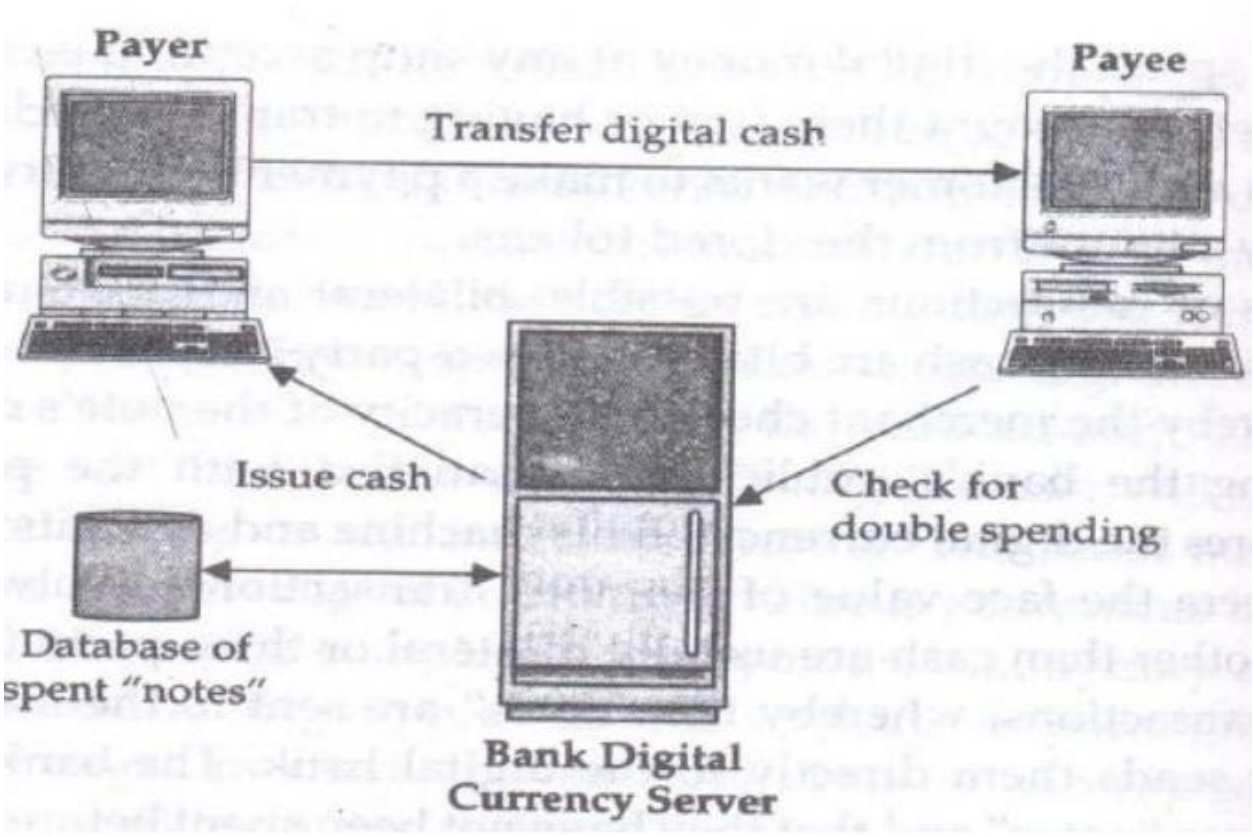
- Individual does not have possession personally of electronic cash
- Trusted third party, e.g. e-banking, bank holds customers' cash accounts

Off-line

- Customer holds cash on smart card or electronic wallet
- Fraud and double spending require tamper-proof encryption

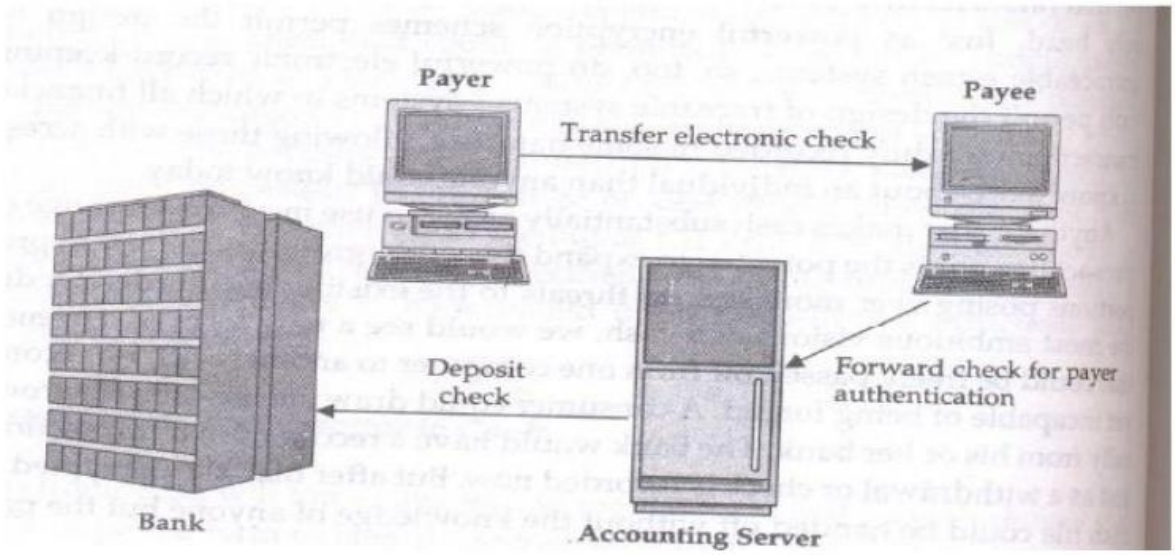
The purchase of e-cash from an on-line currency server (or bank) involves two steps:

- Establishment of an account
- Maintaining enough money in the account to bank the purchase.
    1. Once the tokens are purchased, the e-cash software on the customer's PC stores digital money undersigned by a bank.
    2. The users can spend the digital money at any shop accepting e-cash, without having to open an account there or having to transmit credit card numbers.
    3. As soon as the customer wants to make a payment, the software collects the necessary amount from the stored tokens.



Electronic Checks:

- It is another form of electronic tokens.
- Buyers must register with third-party account server before they are able to write electronic checks.
- The account server acts as a billing service.



Advantages of Electronic Checks:

1.They work in the same way as traditional checks.
2. These are suited for clearing micropayments.
3. They create float & availability of float is an important for commerce.
4. Financial risk is assumed by the accounting server & may result in easier acceptance.

Smart Cards & Electronic Payment Systems:

- Smart cards have been in existence since the early 1980s and hold promise for secure transactions using existing infrastructure.
- Smart cards are credit and debit cards and other card products enhanced with microprocessors capable of holding more information than the traditional magnetic stripe.
- The smart card technology is widely used in countries such as France, Germany, Japan, and Singapore to pay for public phone calls, transportation, and shopper loyalty programs.

Types of Smart Cards:

Relationship-Based Smart Credit Cards
Electronic Purses also known as debit cards

1. Relationship-Based Smart Credit Cards:
    - It is an enhancement of existing cards services &/ or the addition of new services that a financial institution delivers to its customers via a chip-based card or other device.
    - These services include access to multiple financial accounts, value-added marketing programs, or other information card holders may want to store on their card.
    - It includes access to multiple accounts, such as debit, credit, cash access, bill payment & multiple access options at multiple locations.
2. Electronic Purses:
   To replace cash and place a financial instrument are racing to introduce electronic purses, wallet-sized smart cards embedded with programmable microchips that store sums of money for people to use instead of cash for everything.
   The electronic purse works in the following manner:
    - After purse is loaded with money at an ATM, it can be used to pay for candy in a vending machine with a card reader.
    - It verifies card is authentic & it has enough money, the value is deducted from balance on the card & added to an e-cash & remaining balance is displayed by the vending machine.

Credit Card-Based Electronic Payment Systems:

Payment cards are all types of plastic cards that consumers use to make purchases: –
Credit cards
• Such as a Visa or a MasterCard, has a preset spending limit based on the user‘s credit limit.
Debit cards

• Removes the amount of the charge from the cardholder‘s account and transfers it to the seller‘s bank.

Charge cards

• Such as one from American Express, carries no preset spending limit.

Advantages:

– Payment cards provide fraud protection.

– They have worldwide acceptance.

– They are good for online transactions.

Disadvantages:

Payment card service companies charge merchants per-transaction fees and monthly processing fees.

Risks in Electronic Payment systems:

Customer's risks

– Stolen credentials or password

– Dishonest merchant

– Disputes over transaction

– Inappropriate use of transaction details

Merchant‘s risk

– Forged or copied instruments

– Disputed charges

– Insufficient funds in customer‘s account

– Unauthorized redistribution of purchased items

Electronic payments Issues:

- Secure transfer across internet
- High reliability: no single failure point
- Atomic transactions
- Anonymity of buyer
- Economic and computational efficiency: allow micropayments
- Flexibility: across different methods
- Scalability in number of servers and users

Security Requirements In Electronic Payment Systems:

Integrity and authorization

A payment system with integrity allows no money to be taken from a user without explicit authorization by that user. It may also disallow the receipt of payment without explicit consent, to prevent occurrences of things like unsolicited bribery. Authorization constitutes the most important relationship in a payment system. Payment can be authorized in three ways: via out-band authorization, passwords, and signature.

Out-band authorization

In this approach, the verifying party (typically a bank) notifies the authorizing party (the payer) of a transaction. The authorizing party is required to approve or deny the payment using a secure, out-band channel (such as via surface mail or the phone). This is the current approach for credit cards involving mail orders and telephone orders: Anyone who knows a user‘s credit card data can initiate transactions,

and the legitimate user must check the statement and actively complain about unauthorized transactions. If the user does not complain within a certain time (usually 90 days), the transaction is considered —approved‖ by default.

Password authorization

A transaction protected by a password requires that every message from the authorizing party include a cryptographic check value. The check value is computed using a secret known only to the authorizing and verifying parties. This secret can be a personal identification number, a password, or any form of shared secret. In addition, shared secrets that are short - like a six-digit PIN - are inherently susceptible to various kinds of attacks. They cannot by themselves provide a high degree of security. They should only be used to control access to a physical token like a smart card (or a wallet) that performs the actual authorization using secure cryptographic mechanisms, such as digital signatures.

Signature authorization

In this type of transaction, the verifying party requires a digital signature of the authorizing party. Digital signatures provide non repudiation of origin.

Confidentiality

Some parties involved may wish confidentiality of transactions. Confidentiality in this context means the restriction of the knowledge about various pieces of information related to a transaction: the identity of payer/payee, purchase content, amount, and so on. Typically, the confidentiality requirement dictates that this information be restricted only to the participants involved. Where anonymity or un-traceability are desired, the requirement may be to limit this knowledge to certain subsets of the participants only, as described later.

Availability and reliability

All parties require the ability to make or receive payments whenever necessary. Payment transactions must be atomic: They occur entirely or not at all, but they never hang in an unknown or inconsistent state. No payer would accept a loss of money (not a significant amount, in any case) due to a network or system crash. Availability and reliability presume that the underlying networking services and all software and hardware components are sufficiently dependable. Recovery from crash failures requires some sort of stable storage at all parties and specific resynchronization protocols. These fault tolerance issues are not discussed here, because most payment systems do not address them explicitly.

SELECTED QUESTIONS:

1.Which of the following describes e-commerce?

a. Doing business electronically b. Doing business c. Sale of goods d. All of the above

Answer: A

2. Which of the following is part of the four main types for e-commerce?

a. B2B b. B2C c. C2B d. All of the above

Answer: D

3.Which segment do eBay, Amazon.com belong?

a. B2Bs b. B2Cs c. C2Bs d. C2Cs

Answer: B

.4. Which type of e-commerce focuses on consumers dealing with each other?

a.B2B b. B2C c. C2B d. C2C

Answer: D

5.Which segment is eBay an example?

a. B2B b. C2B c. C2C d. None of the above

Answer: D

6.Which type deals with auction?

a. B2B b. B2C c. C2B d. C2C

Answer: D

7.In which website Global Easy Buy is facilitated? a. Ebay.com b. Amazon.com c. Yepme.com d. None of these

Answer: A

8.The best products to sell in B2C e-commerce are:

a. Small products b. Digital products c. Specialty products d. Fresh products

Answer: B

9.Which products are people most likely to be more uncomfortable buying on the Internet?

a. Books b. Furniture c. Movies d. All of the above

Answer: B

10. Which products are people most likely to be comfortable buying on the Internet? a. Books b. PCs c. CDs d. All of the above

Answer: D

11. Digital products are best suited for B2C e-commerce because they: a. Are commodity like products b. Can be mass-customized and personalized c. Can be delivered at the time of purchase d. All of the above

Answer: D

12. All of the following are techniques B2C e-commerce companies use to attract customers, except:

a. Registering with search engines b. Viral marketing c. Online ads d. Virtual marketing

Answer: D

13. Which is a function of E-commerce

a. marketing b. advertising c. warehousing d. all of the above

Answer: D