

## **E-COMMERCE - NOTES**

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### **UNIT-I:**

**E-Business and E-Commerce: Introduction, Potential Benefits, Limitations, Classifications, Impact of E-Commerce on Business models. E-Commerce Applications: Entertainment, E-Marketing, E-Advertising, Search Engines, E-Banking, Mobile Commerce, Online Trading, ELearning, E-Shopping.**

### **UNIT-II:**

**Architecture Framework of E-Commerce: Application Services, Brokerage and Data Management, Interface layers, secure messaging, Middleware services and network infrastructure. Security Protocols: Open systems interconnection (OSI), TCP/IP, FTP, HTTP, SMTP, S-HTTP, SSL, NNTP, Messaging Protocols: Basic Mail Protocol, Security Enhanced Mail Protocol. Web Security Issues, Encryption Techniques: Symmetric and Asymmetric.**

### **UNIT-III:**

**Consumer Oriented E-Commerce Applications, Mercantile Process Model: Consumers Perspective and Merchant's Perspective. Electronic Payment Systems: Advantages and risks, Types of Payment System (Credit Cards, E-Cash, Smart-Cards).**

### **UNIT-IV:**

**Electronic Data Interchange: Non EDI System, Partial EDI System, Fully Integrated EDI System, Prerequisites for EDI. Issues of EDI: Legal issues, Security issues, Privacy issues.**

### **UNIT-V:**

**E-Marketing Techniques: Search Engines, Directories, Registrations, Solicited targeted E-mails, Interactive sites, Banners, Advertising, Spam Mails, E-mail, Chain letters. Applications of 5P's (Product, Price, Place, Promotion, People), EAdvertising Techniques: Banners, Sponsorships, Portals, and Online Coupons.**

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# UNIT-1

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## **Meaning of business:-**

A business (also known as an enterprise or firm ) is an organization engaged in the trade of goods , services , or both to consumers .

## **Meaning of business:-**

A general term that refers to any type of business activity on the internet, including marketing, branding, and research.

**Branding:** - The process involved in creating a unique name and image for a product in the consumer's mind, mainly through advertising campaigns with a consistent theme.

**Commerce:** - The buying and selling of products and services between firms, usually in different status or countries.

**E-commerce:** - e-commerce means buying and selling of products or services over electronic systems such as the internet and other computer networks.

## **Difference between E-business and E-commerce:-**

In both cases , E stands for “Electronic networks “ and describes the applications of Electronic network technology – including internet and electronic data interchange (EDI) – to improve and change business process .

E-commerce covers outward - facing processes that touch customers , suppliers and external partners , including sales , marketing , order taking , delivery , customer service , purchasing of raw materials ---.

E-business includes E-commerce but also covers internal process such as production , inventory management , products development , finance , human resources , E-business strategy is more complex , productivity and cost savings .

Ex:-E-bay, Amazon.

Definition of E-commerce:-

Or

Write about E-commerce.

E-commerce means buying and selling of products or services over Electronic systems such as internet and other computer networks.

- ✓ This use of Electronic transmission medium (Tele communication) to Engage in the exchange, including buying and selling, of products and services either physically or digitally, from location to location.
- ✓ The key element of E-commerce is information processing.
- ✓ This information processing activity is in the form of business transactions.
- ✓ Some of the business transactions are :-

1. Transactions between company and the consumer over networks for the purpose of home shopping and home banking .
2. Transactions between trading partners .
3. Transactions for information distribution .

## 2. Explain activities of E-commerce?

- a) Increasing the speed of service delivery.
- b) Use of computer networks to search and retrieve information in support of human and corporate decision –making.
- c) Buying and selling of information, products and services via computer network.
- d) Faster customer response and improve services quality.
- e) Advertising on the internet.
- f) Online electronic commerce payments i.e., electronic funds transfer.

## 3. Give some potential benefits of E-commerce.

A. The most important features of E-commerce is

1. The global nature of the technology.
2. Low cost.
3. Opportunity to reach hundreds of millions of people.
4. Interactive nature.
5. Variety of possibilities.
6. Rapid growth of the supporting infrastructures.

According to these features, E-commerce benefits are classified into 3 types.

- Benefits to organization.
- Benefits to consumers.
- Benefits to society.

### **Benefits to organization:-**

Following are the benefits of Ecommerce to organizations

1. E-commerce expands the market place to national and international level.
2. E-commerce decreases the cost of creating, processing, distributing, storing, and retrieving paper based information.
3. Ability for creation highly specialized business.
4. E-commerce reduces the time between the outlay of capital and the receipt of products and services.
5. E-commerce initiates business processes reengineering projects.

### **Benefits to consumers**

The following are the benefits of E-commerce to consumer

1. E-commerce enables customer to shop or do other transactions 24hrs a day, all year round from almost any location.
2. E-commerce provides customers with more choices they can select from many vendors and from many products.
3. In some cases, especially with digitized products E-commerce allows quick delivery.
4. Customer can retrieve relevant and detailed information in seconds, rather than days or weeks .
5. E-Commerce facilitates competition, which results in substantial discounts

6. E-Commerce allows consumers to interact with other customers and exchange ideas as well as compare experiences.

### **BENEFITS TO SOCIETY:**

The following are the benefits of E-Commerce to society:

1. E-Commerce enables more individuals to work at home and to do less travelling for shopping resulting in less traffic on the roads and lower air pollution.
2. E-Commerce enables people in rural areas to enjoy products and services that are not available to them. This includes opportunities to learn professions and earn college degrees.
3. E-Commerce facilitates delivery of public services such as health care education and distribution of Government social services at a reduced cost and or improved quality.

### **CLASSIFICATIONS OF E-COMMERCE:**

#### **EXPLAIN CLASSIFICATION OF E-COMMERCE.**

Ans: A common classification of E-Commerce is by the nature of transactions. There are six types of E-Commerce:

1. **BUSINESS - TO - BUSINESS (B2B):** It includes the IOS transactions and electronic market transactions between organizations.
  - IOS Transactions means Inter Organizational Information Systems refers to flow of standard transactions information between business partners, such as placing orders, building or paying.
2. **BUSINESS TO CUSTOMERS (B2C):** These are retailing transactions with individual shoppers.
3. **CUSTOMER TO CUSTOMER :** In this transaction customer sells directly to customers example : selling residential properties, cars, etc.,
4. **NON BUSINESS E-COMMERCE:** An increased no. of non-business institutions such as academic institutions, not for profit institutions religious, organizations, social organizational activities.
5. **CUSTOMER TO BUSINESS (C2B):** This category includes individuals who sell products are services to organizations.
6. **.INTRA BUSINESS E-COMMERCE:** In this category includes all internal organizational activities, usually preformed on intranets, that involves exchange of goods, services are information.

#### **4. What are the limitations of E-Commerce**

The limitations of E-Commerce can be grouped into 1) Technical 2) Non-Technical Categories.

**Technical limitations of E-Commerce are**

1. There is a lack of system security, reliability, standards and some communication protocols.
2. There is insufficient telecommunication band width.
3. Soft ware development tools are changing rapidly.
4. It is difficulty to integrate the internet and soft ware with some existing application data basis.
5. Some electronic commerce soft ware might not be fit without some network are may be incompatible with some operating systems or other components.

**NON-TECHNICAL LIMITATIONS:**

1. **COST AND JUSTIFICATION:** - The cost of developing E-Commerce in house is very costly and made mistakes due to lack of experience may result in delays.
2. **SECURITY AND PRIVACY:** - these issues are especially important in the B2C area, especially security issues which are privacy measures are constantly improved. EC Industry has a very long and difficult task of convincing customers that online transactions are secure and they will keep.
3. **Lack of trust and user resistance:** - Customers do not trust on unknown faceless sellers, paperless transactions and electronic money.

**E-COMMERCE APPLICATIONS:**

EXPLAIN E-COMMERCE APPLICATIONS:

O R

Explain briefly applications of E-Commerce:

Ans: Globally E-Commerce is applied in the following fields.

1. E Marketing
2. E-Advertising
3. E-Banking
4. Mobile Commerce
5. E-Learning
6. E-Shopping
7. Online training
8. Search Engines
9. Entertainment

**1)E-MARKETING** : E-Marketing also known as Internet marketing, Online marketing, Web marketing. It is the marketing of products or services over the internet.

It is consider to be broad in scope because not refers to marketing on the internet but also done in Email and wireless media.

E-Marketing ties together the creative and technical aspects of the internet, including design development, advertising and sales.

Internet marketing is associated with several business models ie., B2C, B2B, C2C.

Internet marketing is inexpensive when examine the ratio of cost to the reach of the target.

**2)E-ADVERTISING:** It is also known as online advertising it is a form of promotion that uses internet and world wide web to deliver marketing messages to attracts customers. Example: Banner ads, Social network advertising, online classified advertising etc.,

The growth of these particular media attracts the attention of advertisers as a more productive source to bring in consumers.

An online advertisement also offers various forms of animation.

The term online advertisement comprises all sorts of banner advertisement, email advertising, in game advertising and key soon.

### **3) E-BANKING OR INTERNET BANKING:**

Means any user with a personal computer and browser can get connected to his banks, website to perform any of the banking functions. In internet banking system the bank has a centralized data base i.e., web-enabled.

Best example for E-Banking is ATM.

An ATM is an electronic fund transfer terminal capable of handling cash deposits, transfer between ALCS, Balance enquiries, cash withdrawals, and pay bills.

#### **SERVICES THROUGH E-BANKING:**

- Bill payment service.
- Fund Transfer
- Investing through internet Banking
- Shopping

Customers should never share personal information's like pin nos., passwords, etc., with any one.

Through internet banking, you can check your transactions at any time of the day, and as many times as you want.

**4) MOBILE-COMMERCE:** Mobile Commerce also known as M-Commerce, is the ability to conduct, commerce as a mobile device, such as mobile phone.

#### **SERVICES ARE:**

1. Mobile ticketing
2. Mobile Vouchers, Coupons and
3. Mobile contract purchase and delivery mainly consumes of the sale of ring tones, wallpapers and games of mobile phones.
4. Local base services
  - Local discount offers
  - Local weather
5. Information services

News

Sports, Scores

6. **MOBILE BANKING:** Banks and other financial institutions used mobile commerce to allow their customers to assess account information and make transactions, such as purchasing, withdrawals etc.,

7. **MOBILE BROWSING:** Using a mobile browser- A www browser on mobile device customers can shop online without having to be at their personal computer.

**5) E-LEARNING:** E-Learning comprises all forms of electronically supported learning and teaching.

E-Learning is essentially the computer and network-enabled transfer of skills and knowledge.

E-Learning applications and processes include web-based learning, computer-based learning.

Content is delivered via. The internet, intranet/extranet, audio, or video tape, satellite TV, and ED-ROM.

Computer-Based Learning, sometimes abbreviated to CBL, refers to the use of computers as a key component of the education environment.

E-Learning is naturally suited to distance and flexible learning, but can also be used conjunction with face-to-face teaching.

E-Learning can also refer to the educational website such as those offering learning scenarios worst and interactive exercises for children.

Communication technologies are used in E-Learning.

A learning management system (LMS) is software used for delivering, tracking, and managing training /education.

## **6) ONLINE SHOPPING:-**

Online shopping is the process where by consumer directly buy goods or services from a sell in real time, without an intermediary services over the internet .it is a form of E-commerce

- An online shop, e-shop, e-store, internet shop web shop, web store, online store, or virtual shop evokes the physical analogy of buying products or services in a shopping center.
- The process is called business-to-consumer (B2C) online shopping. When a business buys from another business it is called business-to-business (B2B) online shopping.
- In order to shop online, one must be able to have access to a computer, a bank account and debit card.
- Online shopping widened the target audience to men and women of the middle class.
- Online shoppers commonly use credit card to make payments , however some systems enable users to create accounts and pay by alternative means ,such as
  1. Billing to mobile phones and landline.
  2. Cheque.
  3. Debit cards.
  4. Gift cards
  5. Postal money order.
- Online stores are usually available 24 hours a day, and many consumers have internet access both at work and at home.
- Online stores must describe products for sale with text, phones, and multimedia files .



- One advantage of shopping online is being able to quickly seek out deals for items or services with many different vendors.
- Another major advantage for retailers is the ability to rapidly switch suppliers and vendors without disrupting users shopping experience.

### **7) SEARCH ENGINE:-**

A web search engine is designed to search for information on the WWW and FTP servers.

- The search results are generally presented in list of result and are often called hits.
- The information may consist of web pages, images, information, and other types of files.
- Some search engines also mine data available in database or open directories.
- Search engines work by storing information about many web pages, which they retrieve from the HTML it self.
- When a user enters a query into a search engine (typically by using keywords), the engine examines its index and provides a listing of best matching according to its criteria.
- Most search engines support the use of Boolean operator AND, OR, and NOT.
- Some search engines, such as GOOGLE, store all or part of the source page as well as information about the web pages.

### **8) ONLINE TRADING:-**

An online trading community provides participants with a structured method for trading bantering (exchanging goods with goods) or selling goods and services.

- These communities often have forums and chat rooms, designed to facilitate communication between the members.
- A formal trading community consists of a website or network of websites that facilitates and track made transactions.
- While trading any used items online, be sure to include the condition and quality of the product so as the receiver can determine its overall value.
- A trading circle is a form of online trading design to facilitate viewing of television series and episode media.

### **9) ENTERTAINMENT:-**

The conventional media that have been used for entertainment are

1. Books/magazines.
2. Radio.
3. Television/films.
4. Video games.

The internet as an entertainment media is not a elastic by itself, but rather a unique interactions of all of the above media.

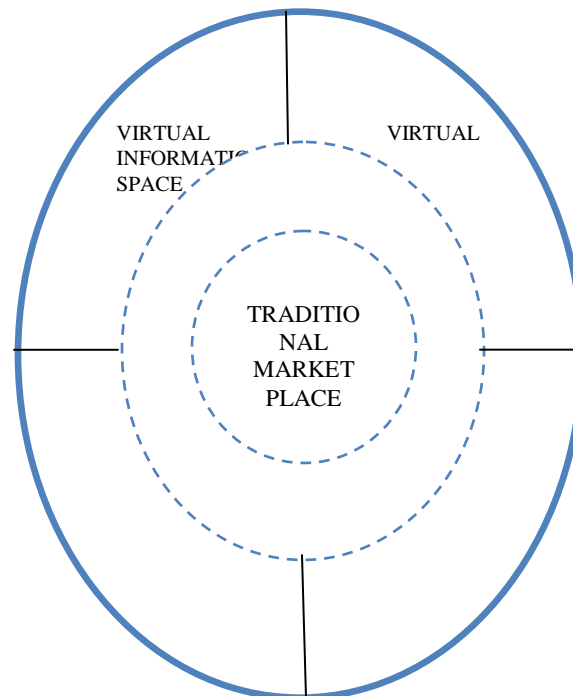
- Computer based systems have been used as an entertainment medium in the form of video games , CD , ROMs , etc..
- Online books /newspapers, online radio, online television, online firms, and online games are common place in internet where we can entertain.
- Online social networking websites are one of the biggest sources of E-entertainment for today's tech-savvy (who have knowledge interest in) generation.



## **IMPACT OF COMPUTER TECHNOLOGY:-**

### **THE ICDT MODEL:-**

A model developed by ALBERT ANGETHRN called the information, communication, distribution; transaction (ICDT) model is used as a basis for discussing the internet strategy of business.



Angrhrn's model is based on four virtual spaces

#### **1. Virtual information space :-**

- a) This space is where a firm displays information about their organization, products, or services.
- b) This space is the easiest space for a business to enter and it is first step to enter into a market place.

For E-commerce major concerns are:

- i. The information that is displayed is accurate a current.
- ii. Customer can easily find the services and can reach the info easily.
- iii. The site is accessible without long wait.

#### **2. Virtual distribution space :-**

- i. This space is used to deliver the product or services requested or purchased by the consumer.

For E-commerce, major concerns are

- ii. Delivery of products and services only the legitimate, approved customers.
- iii. Reliable delivery of products and services

#### **3. Virtual transaction space :-**

- This space is used to initiate and execute business transactions, such as sales orders.
- The major concern contributing to these reluctances is data security.
- Reliability of vendor.
- Reputability of trading partner.

- Privacy concern by customers.

#### 4. Virtual communication space :-

- This space is used to enable relation-ship-building , negotiation ,and exchange of ideas such as chat rooms , forums and communities .

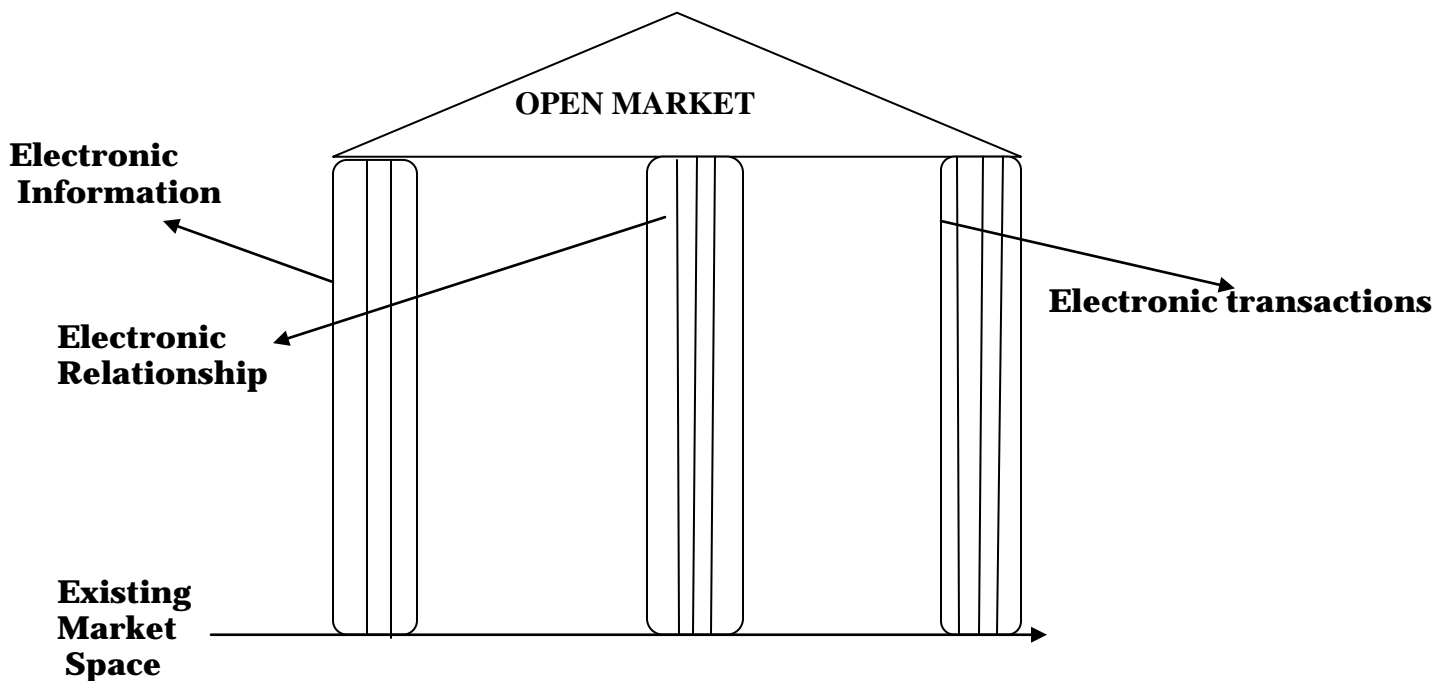
#### Three pillars of E-commerce:-

The three electronic pillars of E-commerce which support open market processes :

- 1) Electronic information.
  - 2) Electronic relationship.
  - 3) Electronic transactions.
- 1) Electronic information is similar to virtual information space . The WWW is viewed as a “global responsibility “, of documents and multimedia data , constructing an electronic information pillar is easy most word processing software packages will easily convert the documents into a web-readable format ,in the website , the web page does not freeze or links do not head the visitor to a dead end .
  - 2) Electronic relationships is the central pillar and this is similar to virtual communication placing information on products and services offer on a web site does not mean that potential customer or guests will visit that web site again , once they are visited .
  - 3) The electronic transactions pillar is similar to virtual transactions space and also encompasses virtual distribution space. Many business have built an electronic inf pillar and some have but or are building an electronic community pillar and fewer have constructed electronic transactions pillar.

Two problems in constructing the pillar are:-

- 1) Engaging a meaningful sufficient, negotiable data.
- 2) Keeping data transactions data secure.



### **Short Question & Answers**

- 1) Define E-Business.
- 2) Define E-commerce
- 3) What are the potential benefits of E-commerce?
- 4) What are the applications of E-commerce?
- 5) Explain types of E-commerce.
- 6) Explain limitations of E-commerce.
- 7) Explain Define E-marketing, E-banking.
- 8) Explain search engines & mobile commerce.

### **Long Questions**

- 1) Explain benefits of E-commerce to organizations, consumers , society .
  - 2) Explain impact of E-commerce on business pedal.
  - 3) Explain ICDI model, three pillar of E-commerce.
  - 4) Explain terms
    - E-Advertising.
    - E-learning.
    - E-shopping.
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## **UNIT-3**

### **CONSUMER ORIENTED APPLICATIONS**

#### **MECANTILE PROCESS MODEL: -**

Mercantile process is an interaction model between consumer and Merchants for online commerce.

- This is necessary to buy and sell goods, a buyer, a seller, and other parties should follow some standard business processes.
- The establishment of a common merchant process (or set off processes) is must to increase the convenience for customers.
- A well established standard process using processing credit cards purchases contributed more for the E-Commerce.

There are three types of mercantile models.

- Mercantile models from the consumer's perspective
- Mercantile models from the merchant's perspective

#### **MERCANTILE MODELS FROM THE CONSUMER'S PERSPECTIVE:-**

The online consumer expects quality, convenience, value, low price and control.

To meet these expectations, the business process model from consumer's perspective grouped seven activities into 3 phases.

Seven activities are

1)Product / service search 2)Product selection 3)Negotiations of terms	1)Pre-purchase determination
4) Placement of order 5)Authorization of payment 6)Receipt for payment	2)Purchases consumption
7)Customer service and support	3)Post purchase interaction

**PRE-PURCHASE DETERMINATION:-**

It includes search and discovery for a set of products in the large information space capable of meeting customer requirement and product selection from the smaller set of products based on attribute (characteristics) comparison.

Consumers have to watch for a new or existing information regarding variables that are important for the purchase decision process.

**Customers are of 3 types.**

- 1) Impulsive buyers:- Who purchase products quickly.
- 2) Patient buyers:- Who purchase products after making comparison.
- 3) Analytical buyer:- Who do substantial research before making the decision to purchase products or services.

In the context of E-Commerce, information search can be classified into 2 categories.

- 1) Organizational search
- 2) Consumer search

**1. ORGANISATIONAL SEARCH:-**

- It is an activity designed to balance the cost of acquiring information with the benefits of improved final decisions.
- As time to time changes information regarding product may be relatively less valuable, so firm or organization respond to high-pauid information change by constraining search process

**2. CONSUMER SEARCH:-**

Consumer search are categorized into 2 types.

- Utilitarian means task related and relational, implying that a product is purchased in efficient manner.
- Hedonic value means for fun sake and playfulness, does not complete the task.

In facilitating better consumer satisfaction and organizational search, intermediaries called information brokers or brokerages. Information brokerages are needed for 3 reasons.

- Comparison shopping
- Reduced search costs
- Integration

**PURCHASE CONSUMATION:-**

- After identifying the products to be purchased, the buyer and seller must interact to carryout mercantile transaction.

- A mercantile transaction is defined as the exchange of information between buyer and seller followed by the payment.
- Depending on the payment model mutually agreed on, they may interact by E-Cash, or transferring authorization for credit billing authorization (Visa, Master Cards)
- Mercantile process using digital cash or E-Cash.
- Mercantile process using credit cards.
- Basic mercantile process model for any transaction online business.

#### Basic Mercantile process model for any transaction online business.

- 1) Buyer contact vender to purchase product, through WWW, Email, Telephone etc.
- 2) Vender states price
- 3) Buyer and vender may or may not engage in negotiation.
- 4) If satisfy, a buyer authorized payment to the vendor with an encrypted transaction for the agreed price.
- 5) Vendor contacts his or her billing service to verify the encrypted authorization for authentication.
- 6) Billing service decrypts authorization and check buyer's account balance and put hold on the amount of transfer
- 7) Billing service gives the vendor the 'green light' to deliver products and sends a standardize message giving details of transactions for merchants records.
- 8) On notification of adequate funds to cover financial transactions, vendor delivers the goods to buyers.
- 9) On receiving the goods the buyers signs and delivers receipt. Vendor tells billing service to complete the transactions.
- 10) All the end of billing cycle, buyer receive a transactions.

#### **MERCANTILE PROCESS USING DIGITAL CASH OR E-CASH:-**

E-Cash in similar to paper currency and has more benefits and easily transmitted electronically.

The following are the mercantile protocol based on the use of e-cash.

1. Buyer obtains anonymous (**secret**) e-cash from issuing bank.
2. Buyer contacts seller to purchase product.
3. Seller states the price.
4. Buyer sends e-cash to seller.
5. Seller contacts his bank or billing Service to verify the validity of the e-cash.
6. Bank gives o.k. signal to seller.
7. Seller delivers the product to buyer.

8. Seller then tell bank to mark the e-cash as

### **MERCANTILE TRANSACTIONS USING CREDIT CARDS:**

Two major components comprise credit card transactions in the mercantile process: Electronic Authorization and Settlement credit authorization processes at point-of-sale terminal. The credit card number is checked against the database and the transaction is either approved or denied, within few seconds.

Step-by-step a/c of a retail transaction follows:

Step 1: A customer presents a credit card for payment at a retails location.

Step 2: The point-of-sale s/w directs the transaction of to the Local Network access point.

Step 3: The system verifies the source of the transactions and routes to the appropriate authorization source.

Step 4: At retail location collects all complement transaction information into a 'batch'.

Step 5: The system gathers all completed transactions and processes the data in preparation for settlement.

### **Post purchase interaction:**

This includes customer service and support to address customer complaints, product returns and product defects.

: - Inventory Issues.

: - Database Access.

### **MERCANTILE MODELS FROM THE MERCHANTS PERSPECTIVE**

The Order to delivery cycle from the Merchant's perspective has been managed with an standardization & cost.

To fully realize and maintain a competitive advantage in the on-line environment, a company must build a robust vision of "order-to-delivery" cycle. This lads to a another cycle "Order Management Cycle" (OMC) .

OMC includes eight distinct activities.

: - Order planning & Order generation.

: - Cost estimation & Pricing.

: - Order Receipt & Entry.

: - Order selection & prioritization.

: - Order scheduling.



- : - Order fulfillment & Delivery.
- : - Order Billing & A/C payment management.
- : - Order Service & Support.

### **Order Planning & Order Generation:**

- The Business process begins with an actual order of placed by the customers.
- Order planning leads to the order generation order generated in sending personalized e-mail to customer (cold calls), Create WWW page.

### **Cost estimation & pricing:**

- Pricing is the bridge between customers' needs and company capabilities.
- Pricing at the individual order level depends on an understanding the value to the customers that is generated by each orders.
- Evaluating the cost of filling each order.

### **Order Receipt & Entry:**

After acceptable price, the customers enter the order receipt and entry phase of OMC. These orders are taken by customer service representatives, who are in constant contract with customers.

### **Order Selection & Prioritization:**

Customer service representatives are responsible for choosing which orders to accept and which to decline.

\* Not all customer orders are created equal.

\*The desirable orders are those that fit the company's capabilities and gives good profit.

\*Companies can make gains by the way they handle order prioritization- i.e decide which orders to execute faster.

### **Order scheduling:**

During the order scheduling phase the prioritization orders get slotted into an actual production or operation sequence.

This task is will become difficult because of the different departments having conflating goals.

### **Order fulfillment and Delivery.**

During this phase the actual product or service is delivered.

\*Order fulfillment involves multiple function & Locations.

\*In some business, fulfillment includes third party vendors.

### **Order Billing and Account Payment:**

After the order has been fulfilled and delivers billing is typically handled by the finance department. This department gets the bill out effectively efficiently and close collect very quickly.

### **Customer Service & Support:**

Customer service involves installation of a product, repair maintenance.

This service gives customer satisfaction company profitable year.

### **Electronic Payment Systems:**

Definition: Electronic payment is a financial exchange that takes place online between buyers and sellers. The content of this exchange is usually as encrypted credit card numbers, electronic cheques or cash. The various factors that have had the financial intuitions to make use of electronic payments are:

1. Decreased technology cost. Interest is becoming free almost everywhere in the world.
2. Reduced operational and proceeding cost.
3. Increasing online commerce.

### **Advantages:-**

1. Privacy.
2. Integrity.
3. Compatibility.
4. Good transaction efficiency.
5. Acceptability.
6. Convenience.
7. Mobility.
8. Low financial risk.
9. Anonymity.

1) The greatest advantage of e-payments is the convenience. I.e. customer can pay on one from any locations 24 hours day, 7 days a week.

2) E-payments have reduced the amount of time spent on bill management or payment by about 60%.

3) Compared to the cost of postage, check writing has any online payment can save the money.

4) E-payments are secure.

### **Risks in Electronic payment systems:-**

There are three major risks in the operation of the payment system, they are

- 1) Fraud or mistake.
- 2) Privacy issues.
- 3) Credit Risk.

1) Fraud or Mistake:

All electronic payment systems need some ability to keep automatic records. Once information has been captured electronically, it is easy and inexpensive to maintain. The need for record keeping for purpose of risk management like fraud or any sort of mistake.

## 2) Privacy Issues:

The electronic payment system must ensure and maintain privacy. The privacy customers should be protected as much as possible privacy must be maintained against unauthorized persons. For any type of transaction trusted third-parties will be needed for all tenacity and good faith.

## 3) Managing Credit Risk:

Credit or systematic risk is a major concern in net settlement systems because a bank's failure to settle its net position could lead to a chain reaction of bank failures.

### **TYPES OF PAYMENT SYSTEM**

Electronic payment systems are mainly used in banking, retail, health –care, online markets, etc., Electronic payment system also called as Electronic Funds Transfer (EFT) It is defined as “ any transfer of funds initiate through an electronic terminal telephonic instrument or computer or authorize a financial institution to debit or credit an account”

EFT (Electronic Funds Transfer) can be categorized in to three types.

- 1) Banking & Financial payment.
- 2) Retailing payments.( Credit Cards & Debit Cards)
- 3) Online electronic payments.  
E-cash, Electronic cheques, Smart Cards, Credit cards.

### **Electronic Cash ( E-cash)**

E-cash is a new concept in on –line payment system because it combines computerized convenience with security and privacy. E-cash presents some interesting characteristics that should make it an attractive alternative for payment over the internet.

### **Properties of E-cash:**

There are four properties of E-cash

- : - Monetary Value
- : - Interpretability
- : - Irretrievability and security

E-cash must have a monetary value; it must be backed by cash, bank-authorized credit or a bank certified cashier cheque. When e-cash created by one bank is accepted by other others.

E-cash must be Interpretable i.e. this can be cleared in multiple banks, because multiple banks are required with an international clearing house that handles the exchangeability issues because all customers are not going to be using the same bank or even be in the same country.

E-cash must be storable and retrievable from any place telephone or personal communications device and with- draw from and deposit in to banking A/C. E-cash should not be easy to copy, this includes preventing or detecting duplication.

### **Risk Involves in E-Cash are:**

- 1) Time for electronic money is valid.
- 2) How much can be stored on and transferred by electronic money.
- 3) No. of transactions made during given period or time.

To make purchasing using E-cash:

- 1) Establishment of an account
- 2) Maintaining enough money in the a/c to make the purchase.

### **Working of E-cash:**

E-cash is based on cryptographic systems called “Digital Signatures”. This method involves a pair of numeric keys (Very large no’s)

- One for locking (encoding)
- Another for unlocking (decoding)
- Encoding key is kept private and the decoding key is made public.

These digital signatures are very secured way for e-cash.

Electronic cash fulfills two main functions:

- 1) As a medium of exchange.
- 2) As a store of value.

Digital money is a perfect medium of exchange e-cash would be allowed to realize it’s potential for bypassing the transaction costs of the foreign exchange marked.

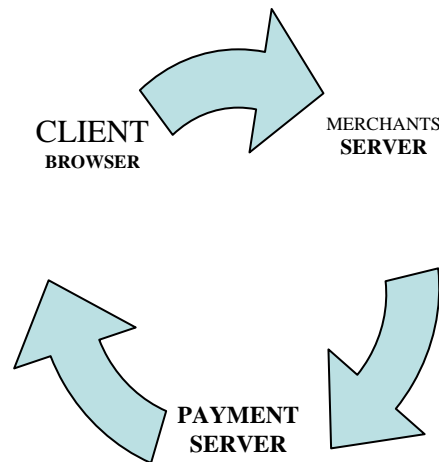
### **Operational Risks:**

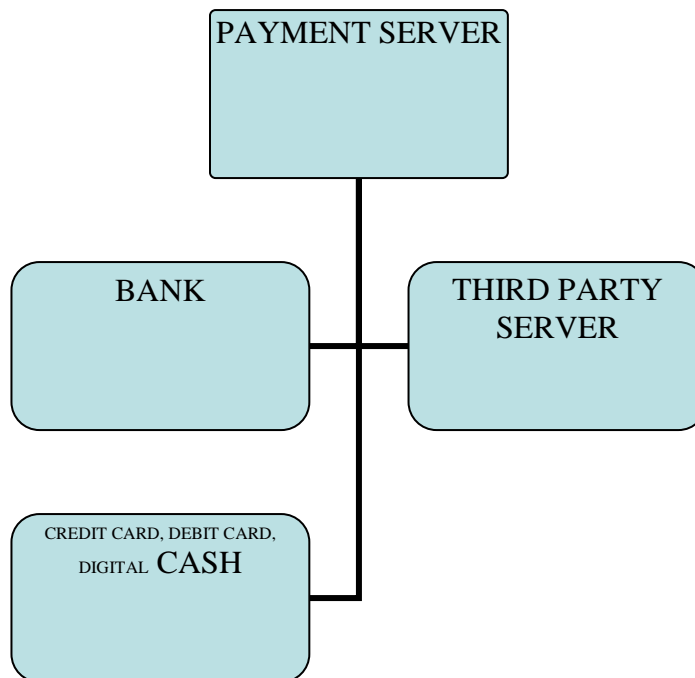
- 1) The time over which given electronic money is valid.
- 2) How much can be stored on and transferred by electronic money.
- 3) The n.o of such transactions that can be made during a given period or time.

### **Legal Issues:**

Electronic cash will force bankers and regulators to make touch choices that will shape the form of lawful commercial activity related to electronic commerce.

1. The consumers acquire an OTP account numbers by filling our registration form. This will give the OTP a customer information profile.
2. To purchase in on-line the consumer requests the form the merchant by quoting OTP account number.
3. The merchant contacts with OTP payment server with the customer's account n.o
4. The OTP payment server verifies the customer's account number for the vendor and check for stuffiest funds.
5. The OTP payment server sends an electronic message to the buyer. The buyer responds to this message in one of three ways. Yes I agree to pay; No; I will not pay;
6. If the OTP payment servers get a yes from the customer, the merchant is informed and the customer is allowed to download the material immediately.
7. The OTP will not debit the buyer's account until if receives conformation of purchase completion.






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### **Short Questions:**

- 1) Mercantile process.
- 2) What is Electronic Payment system?
- 3) Explain EFT (Electronic funds transfer)
- 4) E-cash.
- 5) E-cheque
- 6) Smart –cards
- 7) Electronic Pulses
- 8) Credit Card

### **Long Questions:**

- 1) Explain consumer – oriental applications.
- 2) Explain types of mercantile process models.
- 3) Explain mercantile models from the consumer's perspective.
- 4) Explain mercantile models from the merchant's perspective.
- 5) Explain E-cash & E-cheques.
- 6) Explain risks in electronic payment systems.
- 7) Explain in      about credit card systems.
- 8) Explain digital token based electronic payment systems (E-cash, E-cheques).

## **UNIT-4**

### **EDI-ELECTRONIC DATA INTERCHANGE**

#### **INTRODUCTION**

EDI refers to the exchange of electronic business documents I.e. purchasing orders, invoices, etc. between applications. The exchange involves no paper, no human intervention and takes place in a matter of seconds. EDI documents are formatted using published standards. EDI requires a network connection between the two companies exchanging business documents. EDI has provided great value to trading partners especially those in certain “EDI – ENABLED” industries such as retail, automotive, and petroleum. The advent of the internet has created a common information and communications platform upon which business can be conducted. Internet provides the communications. Capabilities of EDI over a Value-Added network at a much lower price.

#### **BUSINESS SYSTEMS ARE OF 3 TYPES:-**

1. NON-EDI SYSTEMS
2. PARTIALLY EDI SYSTEMS
3. FULLY INTEGRATED SYSTEMS

#### **NON-EDI SYSTEMS:-**

EDI today is most widely used in large business and by smaller companies trading with larger businesses.

The entire non- EDI process requires the use of multiple clerks by both the customer and vendor to complete the transaction. The typical clerks involved in the buying cycle are Inventory control, purchasing, receiving, accounts payable, etc.. The typical clerks involved in the selling cycle are sales order processing, credit, warehouse, shipping, accounts receivable and cash receipts.

#### **EXAMPLE FOR NON-EDI SYSTEMS**

SELLING	BUYING
PREPARE SALES OEDER	PURCHASE REQUISITION
SALES ORDER COPY SENT TO WAREHOUSE OR PLACED ON BACK ORDER.	SEARCH VENDOR FILES OR SELECT A VENDOR
AFTER GOODS ARE SHIPPED, INVOICE IS PREPARED.	PREPARE PURCHASE ORDER
MAIL INVOICE TO CUSTOMER	MAIL PURCHASE ORDER TO VENDOR
	RECEIVE INVOICE & VERIFY ACCURACY
	PREPARE CHECK AND MAIL CHECK.

From the above example, as many as eleven clerks are involved in the process from start to finish.



## VALUE – ADDED NETWORKS(VANS)

The EDI features are implemented in the organization through third party network services, generally called Value-Added-Networks.(VAN).The services provided by most VANS include

1. EDI translation s/w
2. Security assurances of data
3. Reliability of services due to multiple
4. Telecommunication links
5. EDI systems development assistance
6. Employee training sessions.

### **ROLE OF VAN**

1. To execute only authorized transactions with valid trading partners.
2. To enable the VAN to distinguish authorized transactions and valid trading partners.

Companies view EDI messaging as a function to be outsourced to a specialist.VANS provide this outsourcing function and serve as a messaging station for trading partners. Messaging can be transmitted from one party's VAN to the other party's VAN.



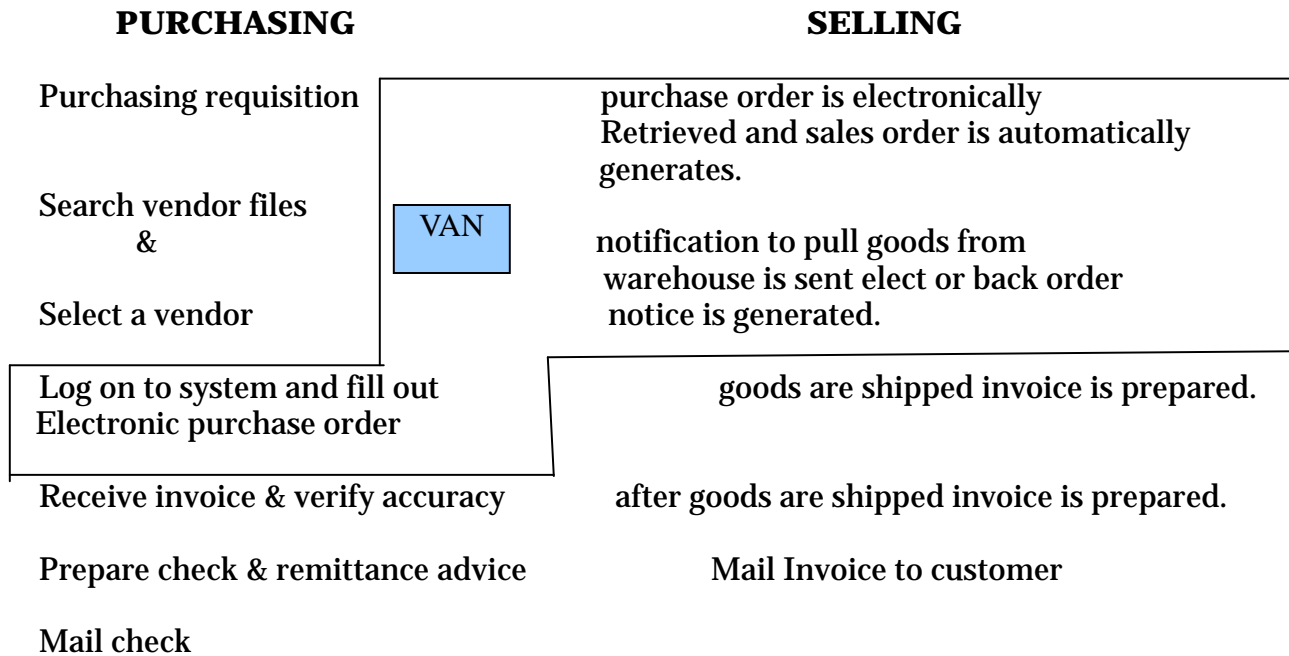
When author trading partner send a request for information to VAN .VAN transmit the data immediate back to the requesting partner with out needing to contact to the vendor.

If VAN does not have the requested data, it request the vendor for the data. After getting the data from the vendor, it sends back to the trading partners.

## **PARTIALLY INTEGRATED EDI SYSTEMS**

In partially Integrated system, the process begins the same as in a non – EDI system.

### Example for Partially Integrated EDI Systems



Some steps are done manually like searching for vendor & selecting a vendor.

After selecting, rest of the steps I.e. purchase order, sales order etc. through VAN. Then again preparing check, mailing check, under purchasing and shipping good, invoice mailing to customer are done manually.

### **Advantages:-**

1. The time from approving a purchase order to receipt of the purchase order and preparation of the sales order by the vendor is typically reduced by as much as 3-7 days.
2. The no. of clerks to perform the entire cycle are reduced.
3. The possibility of clerical errors is also reduced as in the amount of paperwork generated by duplicate copies.

## **FULLY INTEGRATED EDI SYSTEMS**

Fully integrated EDI systems encompass electronic data sharing through out all aspects of the purchasing and payment cycles.

1. The processing of the actual payment and remittance advice is called Financial EDI.
2. Fully integrated EDI, including financial EDI, provides firms with the greatest benefits in terms of speed and accuracy.
3. Payment system also did in Electronic transfers funds.

1.Scans inventory files to determine purchase requirements	VAN (steps:3,4,5,6,7,9,10,12,13 are done through van)	6.electronically retrieves purchase order and sales order is automatically generated.
2. Scans vendor files to determine appropriate vendor.		7.Notifies ware house to pull goods
3. contact vendor systems to check inventory availability and prices.		8.records shipping date and quantities.
4. select vendor		9.sends electronic invoice to customer
5. place order(purchase order)		13.receives electronic notification of funds transferred and remittance advice.
10.receives electronic invoice		
11. verifies amount charged and goods received.		
12.Electronically transfers funds and remittance advice		

### **PRE-REQUISITES OF EDI**

Planning for EDI implementation is an important factor for success.

The step required for EDI is:-

1. Identify organizational needs for EDI
2. Weigh the cost and benefits of EDI
3. Identify EDI business partners
4. Obtain top management approval
5. Form an EDI project team
6. Education & training
7. Decide on EDI standards
8. Decide on the connection options
9. Implementation planning.

#### **1. Identify organizational needs for EDI:-**

\* First, study the company's existing work flow and how it can be improved using EDI.

\* This study should attempt to cover the whole range of data and information flow through the entire company and not be limited to know EDI applications.

1.           2. Weigh the cost and benefits of EDI:-

- After identifying the areas where EDI implemented, weigh the benefits of EDI against the costs of setting up the system.
- The cost of EDI implementation goes beyond start up costs of acquiring the EDI s/w and h/w components and training.
- Ongoing costs such as VAN charges, maintenance and support costs need also to be taken into account.

## **2. Identify EDI business partners :-**

- In this phase, identify the business partners with whom to implement EDI.
- Upon identification of business partners, discuss with them about the possibility of establishing an EDI link.

## **4. Obtain top management Approval**

EDI implementation is a strategic business issue. Obtaining top management approval of the EDI implementation ensures that the EDI implementation is an overall company objective. Top management will also have the authority to approve the necessary resources required for the implementation.

## **5. Form a EDI project team :-**

- EDI implementation involves those personnel who are experts in their business areas.
- An EDI project team needs to be formed to ensure that the requirements of all parties are addressed.
- EDI project team can be headed either by an in-house expert (with IT & EDI experience) or by external consultants.
- The project team will coordinate overall project activities, plan the implementation

## **6. Education & Training :-**

- Training & education programmed can also be used as a power tool to demonstrate senior management support of EDI.
- EDI training programmed nearer to the date of implementation could cover specific areas of user operation & how to use the system.

## **7. Decide on EDI standards:-**

- It is necessary for organizations to adapt a common set of standards for communications.
- The set of standards to be adopted in EDI implementation needed to be agreed by you and the businesses partners.

## **8. Decide on the connection options:-**

- Decide building a own proprietary network or selecting a third party VAN.

- Identify the appropriate VAN.

### **9. Implementation planning :-**

- After VANS identified, and the EDI applications prioritized implementation planning comes next.
- At this stage, decision will be taken to implement and which approach should be taken for full implementation.

## **EDI: LEGAL, SECURITY AND PRIVACY ISSUES**

In EDI, Trading is done between countries and corporations.

- In EDI, legal issues and computer security are important.
- Companies that deal with EDI should take the services of a lawyer during the design of EDI applications, so that evidentiary/admissibility safeguards are implemented.

There are 3 types of communications when considered for EDI issues:

- 1) Instantaneous: - If the parties are face to face or use an instantaneous communication medium such as telephone.
- 2) Delayed with postal service: - The mailbox rule provides that an acceptance communicated via postal service mail is effectively communicated when dispatched or physically deposited.
- 3) Delayed with non postal service: - EX: - Couriers, telegram

- Messaging systems combine features of delayed and instantaneous
- Messaging delay is a function of the specific applications, message routing, networks traversed, system configuration and other technical factors.

One way of legal & security issue is Digital signatures.

The technical uses of digital signatures are :-

1. Messages are time- stamped or digitally notarized to establish dates and times at which a recipient hard access or even read a particular message.
2. These signatures are to replace handwritten signatures, as it is same legal status as handwritten signatures.
3. Digital signatures should have greater legal authority than handwritten signatures.

**Important questions**

1. EXPLAIN VAN.
2. EXPLAIN TYPES OF EDI.
3. EXPLAIN PREREQUISITES OF EDI.  
OR  
EXPLAIN EDI IMPLEMENTATION
4. EXPLAIN SECURITY, LEGAL, AND PRIVACY ISSUES IN EDI.

**SHORT ANSWERS**

1. DEFINE EDI
  2. WRITE A NOTE ON NON-EDI SYSTEMS
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## UNIT-5

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### **Internet Marketing Techniques:**

Internet marketing techniques are of 2 types:

- 1) Passive Techniques.
- 2) Aggressive Techniques.

**1) Passive Techniques:** Passive techniques are considered to be those methods that require the user to 'pull' the information from the website.

**2) Aggressive Techniques:** Aggressive techniques are considered to be those techniques in which the website "pushes" the information on to the customer regardless of whether the consumers is interested or not.

Some of the marketing techniques:

- Solicited, targeted e-mail.
- Interactive sites.
- Banner advertising.
- Off-line advertising.
- Unsolicited targeted e-mail.
- Spam Mail.
- E-mail, chain letters.

### **Solicited, Targeted E-mail:**

E-mail marketing has become a popular medium because of its relatively low-cost and the ability to send HTML messages containing full color pictures of products, as well as links to order from pages. The transmit hal of an e-mail message to a solicited, targeted list is a method used to visitors to a website that requires acts by both the website and the visitor. This mechanism allows a business to maintain regular contract with customers and drive traffic to websites or other products.

Because the user requests the information this type of internet marketing technique is considered to be "pulled" by the consumer with the help of the website.

This Technique is comes under passive Techniques.

### **Interactive Sites:**

Some sites may exhibit initiative to attract initial and subsequent visitors to there attract initial and subsequent visitors to their site by providing general information in an interactive fashion.



**Banner Advertising:**

Online Banner advertising, off-line advertising one comes under aggressive advertising techniques. Online banner advertising a service sold. Internet marketing firms. Can be very effective. A major advantage is that the banner's effectiveness, in terms of a visitors to site is easily monitored.

**Off- Line Advertising:**

The method used to promote website is off-line advertising, such as television, radio and print. These advertising mechanisms are also relatively more costly than previously mentioned methods.

**Unsolicited, Targeted E-mail:**

The method of on-line advertising that unsolicited, targeted email advertising to past visitor or customers. This type of advertising is aggressive in that the visitor or customer does not specifically request additional sales or promotion items. When conducted properly, these methods can be effective.

**Spam mail:**

Even more aggressive factices to attract customers is the sending of unsolicited e-mail advertisements to individuals or business that have never visited the site. The e-mail address may be purchased or traded with another business.

The on –line eqvalent of junk-mail- that is sent out repeatedly is referred to as spam mail.

Spam is referred to as “Postage due marketing “ because the thousands of messages sent reside on the recipients host computers until they are deleted, and the storage of such messages cost business money.

**E-mail chain letters:**

Another low-cost, aggressive advertisement technique used on the internet is e-mail chair letters. E-mail chair letters typically require that a user visit site and register.

**Marketing ( Web – Based marketing):**

The www provides an exciting and powerful new distribution channel for marketers. Web –based electronic commerce is providing marketers with an exciting new marketing channel.

Marketing is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods and services to create exchanges that satisfy individual and organizational goals.

The www presents a new venue for marketers to use and with it comes new guidelines.

Web based marketing consider two issues.

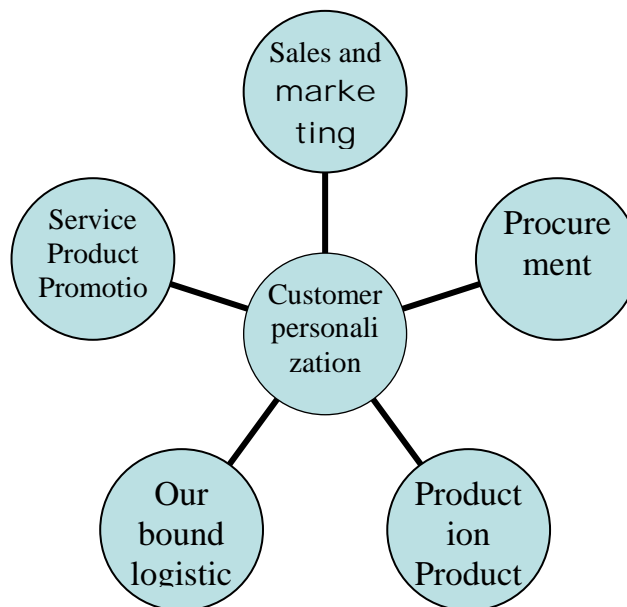
- 1) Determine whether web-based marketing is (1) Evolutionary- altering an existing firm's business model.  
(2) Revolutionary- forming a new organization to realize the opportunity of marketing on the web.
- 2) Consider how the various web-based marketing techniques can supplement current marketing initiatives.

### **The Five "P"s Applied To Internet Marketing:**

A customer oriented value chain that places the customer as the center of attention, with information follows passing from a business to its customer for all facts of its operations except for own procurement where the firm inter faces with its suppliers.

The five "P" s of marketing are:

- 1) Product
- 2) Pricing
- 3) Place & Distribution
- 4) Promotion
- 5) Personalization



**Figure: The relationship of the five Ps and the consumer- oriented value chain.**

**Product:**

Product is a good or service that a business offers to its customers without a perfect product to offer, a business cannot survive. The produce component in the marketing is related to the production section of the consumers –oriented value chain.

**Pricing:**

The pricing of a “good” refers to the processes involved in determining the amount to charge for a specific physical good or service pricing models are typically used to determine a firms price.

Because of the development of search engines customers are easily able to compare prices of many goods offered for sale on the internet. On-line quotation are a popular method for selling items on the internet an interesting method of pricing goods on the internet is through offers made by consumers.

**Place (Distribution):**

Place is frequently referred to as out bound logistics or Distribution.  
The Distribution task entails moving the product from the producer to the customer.

The product may travel directly from the products to the customer or it may be channeled intermediaries such as whole sales or retailers.

E-commerce involving the sale of physical goods can be very useful in exchanging information between business and delivery companies.

The physical internet itself us also a delivery channel for digital products like software data or multimedia fill.

**Promotion:**

The sales and marketing function under the traditional marketing category called promotion. The successful promotion of a product requires that at a minimum a positive message be received by potential customers. This message can be communicated many ways.

- 1) Paid advertising channels.
- 2) New stories and press releases.
- 3) Word of mouth.
- 4) Consumers personal experiences.
- 5) Packaging.

Another aspect of promotion is the sharing of information with customers.

**Personalization:**

The internet is leading marketers to a fundamental paradigm shift from mass marketing to personalized marketing. Data bases and telecommunications technology make it very easy and cost – efficient to mass marketing personalized services.

Personalization on the internet refers to the ability of customers to receive personalized information (ex: sales advertisements or coupons) or visit a website.

**ONLINE ADVERTISING MECHANISMS**

Attracting visitors to websites is a key component to a successful web-based commerce site. The most common sources of revenue come from allowing advertisers to pay for banners on their sites is to be listed as site sponsors.

**Different Techniques in online Advertising are:**

- 1) Banners.
- 2) Sponsorships.
- 3) Portals.
- 4) Online Coupons.

**Banners:**

According to internet advertising bureau (IAB), the most popular form of on-line advertising is banner advertising.

Banner advertising is used to attract visitors to a site.

Banner advertising containing text and graphic that are placed on the screens of search engines, web browser software and websites to attract the attention of www users.

Banner advertising is of two types

- Click through advertisement.
- Not click- thorough advertisement.

Click through advertisement contain hypertext links to the site about which the banner is advertising.

Non Click through advertisements which does not contain hypertext links to the site.

Banner advertising is typically measured and priced according to two features.

- ⇒ CPM- Cost per thousand impressions.
- ⇒ CTR- Click through rate.

CPM- an impression refers to each time a page is viewed that is displaying the banner.

CTR- the click through rate is considered to be more important by many advertisers since it measures the no. of users "delivered" to a site.

Firms are also interested in tracking whether visitors they make a purchase from the site. So software tracking devices are available for tracking such items.

**Sponsorships:**

Sponsorship is another popular on-line advertising method. Sponsorships are similar to banner in that a business gets to display a message typically just a logo, on a site a click-through may be allowed.

Sponsorships typically allow the firms banner to stay on a site for a longer period of time or for a certain no. of days.

Sponsorships are a good mechanism for generating brand recognition's.

**Portals:**

A portal is referred to a site that serves the “post of entry” on to the web. Portals are designed to give web users the information they need as they first enter the www.

Customized pages are an option, as well a customized news items and stock quotes. Portals types sell advertising space on their sites.

**Online coupons:**

Online coupons are printed for use in stores or requested and sent via portal mail for use in stores when the visitor expenses the produce in which they are interested the store mails the coupons to them.

On-line coupons are also distributed from sites that specialize in distributing such coupons for businesses that subscribe to their services.

**Another way of on-line Advertising mechanisms:**

- Directories
- Search engines

**Directories:**

Directory services on the www provide an index that lists and provides links websites. The sites may be listed in one of many ways: Alphabetically or by subject, category, or region. Websites can be registered at no charge to a no of directory services such as info seek internet mall, the yellow pages and yahoo.

Registering with multiple directories is important in order to cast as wide a net as possible and because users are traversing the net using many different directories.

**Search Engines:**

Using search engines is a more popular met of finding sites than the use of directories.

Web search engines take user different strings and Boolean expressions and return a list of closely matched websites in the order of the closeness of match.

Search engines periodically “crawl” through the internet looking for new pages and update their existing databases.

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### **Important Questions**

#### **Short:**

- 1) Explain (1) search engines (2) directories.
- 2) Explain banners.
- 3) Explain sponsorships portals online coupons.
- 4) Explain web based marketing.

#### **Long:**

- 1) Explain e-marketing techniques.
  - 2) Explain 5p's of internet marketing,
  - 3) Explain e-advertising techniques.
-