Class : **S.Y.B.B.A. – ITM (SEMESTER – III)**

Subject : **E-Commerce**

Unit : **E-Marketplace, SCM, E-Payments & CRM**

Faculty Name : **Kalpesh N. Patel**

❖ Electronic Marketplaces:

Markets play a central role in the economy, facilitating the exchange of information, goods, services, and payments.

Markets have three main functions:

1. Matching Buyers and sellers that includes determination of products offerings, searching price and product information, organizing bids and bartering, matching seller offerings with buyer preferences, enabling price comparison
2. Facilitating the exchange of information, goods, services, and payments associated with market transactions
3. Providing institutional infrastructure such as legal (contract law, dispute resolutions, intellectual property protection, Export and Import Law) and Regulatory (rules and regulations, monitoring)

E-Marketplace/Marketspace facilitates sellers and buyers to exchange goods and services electronically.

❖ Marketspace Components:

Customers:

Web surfers world wide are the potential buyers of the goods and services offered or advertised on the Internet. They can search for detailed information, compare bid, and sometimes negotiate. Organizations are the major consumers, accounting for over 85 percent of EC activities.

Sellers:

Millions of the Storefronts on the Web advertise and offer a huge variety of items. Sellers can sell direct from their Website or from e-marketplaces.

Products:

One of the major differences between marketplace and marketspace is the digitization of products and services in marketspace. Both the types of market can sell physical products but the market space also sell digital products, which are the goods that can be transformed to

digital format and delivered on the Internet. In digitization most of the costs are fixed and the variable cost is very small. Thus, the profit will increase rapidly as volume increases, once the fixed costs are paid for.

Infrastructure:

It includes hardware, software, networks, Messaging and information infrastructure, business services infrastructure like smart cards, security, etc.

Front End:

Customers interact with marketspace via front end. It includes seller's portal, electronic catalogs, a shopping cart, a search engine and a payment gateway.

Back End:

Activities related to order aggregation and fulfillment, inventory management, purchasing from suppliers, accounting and Finance, payment processing, packaging, and delivery are done as Back end of business.

Intermediaries:

An Intermediary is a third party that operates between sellers and buyers. Online intermediaries create and manage the online markets. They help match buyers and sellers, provide some infrastructure services, and help customers and/or sellers to set up and complete transactions.

Other Business partners:

In addition to intermediaries, there are several types of partners such as shippers that collaborate on the internet, mostly along the supply chain.

Support services:

Support services range from certification and trust services, which ensure security, to knowledge providers.

❖ **Types of Electronic Markets:**

In **B2C**, the major e-marketplaces are **storefronts** and **Internet malls**. Whereas, in **B2B** three types of e-markets: **public, private and consortia**.

Electronic Storefronts:

An Electronic/Web storefront refers to a single company's website where products and services are sold. It is an electronic store which may belong to a manufacturer, to a retailer, to individuals selling from home, or another type of business.

A storefront includes features like electronic catalogs, a search engine, an electronic cart, e-auction, payment gateway, shipment court, and customer services.

E-catalogs: It consists of product database, directory and search capabilities. For customers, e-catalogs is source of information on products and services. Catalogs can be static or dynamic. In static catalogs, information is presented in text and static pictures. In dynamic catalogs, information is presented in motion pictures or animation and sound. Catalogs can be standard or customized. In standard catalogs, merchants offer the same catalog to any customer. In customized catalogs, content, pricing and display are tailored to the characteristics of specific customers.

Search Engine: It helps the consumer to find products in catalog.

Electronic cart: It holds the items until checkout.

E-auction: An auction is a market mechanism by which a seller places an offer to sell product and buyers make bids sequentially and competitively until a final price is reached. Auctions can be done online or offline. Traditional online auction last only a few minutes, for each item sold. Sellers may not get highest possible price, bidders may not get what they really want or they pay too much for the item. As bidders are usually physically required to be present at auctions, many potential bidders are excluded. It may also be difficult to move goods to an auction site. The place may be rented. The auction needs to be advertised and an auctioneer and other employees need to be paid.

Host websites serve as brokers, offering services for sellers to post their goods for sale and allowing buyers to bid on those items. Major online auctions such as eBay offer consumer products, electronic parts, artwork, are being auctioned.

Payment gateway: It makes payment arrangements. E-payment methods include electronic payment cards (credit, debit), E-cash, Smart cards, EFT, etc.

Shipping court: It makes shipping arrangements

Customer services: It includes product information and register for warranties.

Electronic Malls:

An e-mall is an online shopping location where many stores are located. For example, Hawaii.com, is an e-mall that aggregates Hawaiian products and stores. It contains a directory of product categories and stores in each category. When consumer indicates the category they are interested in, they are transferred to appropriate independent storefront to conduct their shopping. E.g. choicemall.com

Types of Stores/Malls:

1. General stores/malls: Large marketspaces that sell all types of product. Examples, amazon.com and choicemall.com and major public portals like yahoo.com, etc.
2. Specialized stores/malls: Stores that sell only one or few types of products, such as books, flowers, cars, pet toys. E.g. at 1800flowers.com we can buy flowers and related gifts, or at buy.com we can purchase only computers and consumer electronic products.
3. Regional v/s global stores: some stores, such as e-grocers or sellers of heavy furniture, serve customers that live nearby. However, some local stores will sell customers in other countries if customer will pay shipping, insurance, and other costs.
4. Pure online organizations v/s click-and-mortar stores: Pure online stores do not have physical counterpart. E.g. Amazon.com and Buy.com. When physical stores also sell online they are called click-and-mortar stores. e.g. Walmart.com and 1800flowers.com.

- **Three types of e-marketplaces in B2B:**

Private E-Marketplace: Private E-marketplace is owned by a single company. There are two types of such markets exist: sell-side and buy-side. In a sell-side e-marketplace, a company will sell either standard or customized products to qualified companies. In buy-side e-marketplace, a company conducts purchasing from invited suppliers. Private marketplaces are open to only to selected members and are not publicly regulated.

Public E-Marketplace: B2B markets that are owned by a third party and include markets with sellers and buyers. These markets are also known as *exchanges*. They are open to public and regulated by the government or exchange's owners. E.g. stock exchange.

Consortia: A small group of major buyers may create an e-marketplace to deal with suppliers or a group of sellers may also create an e-marketplace to deal with buyers. Such e-marketplaces are called consortia. They can be completely private, where only invited suppliers can participate, or they can be open to more suppliers, resembling a public e-marketplace.

❖ E – Supply Chains :

E-Supply Chains

A company's success is clearly dependent on finding and retaining customers. The success may be far more dependent on what is behind the Web page than on what is on the Webpage. The company's internal operations and relationships with the suppliers and other business partners are critical than customer facing applications. These non-customer facing applications are related to company's supply chain.

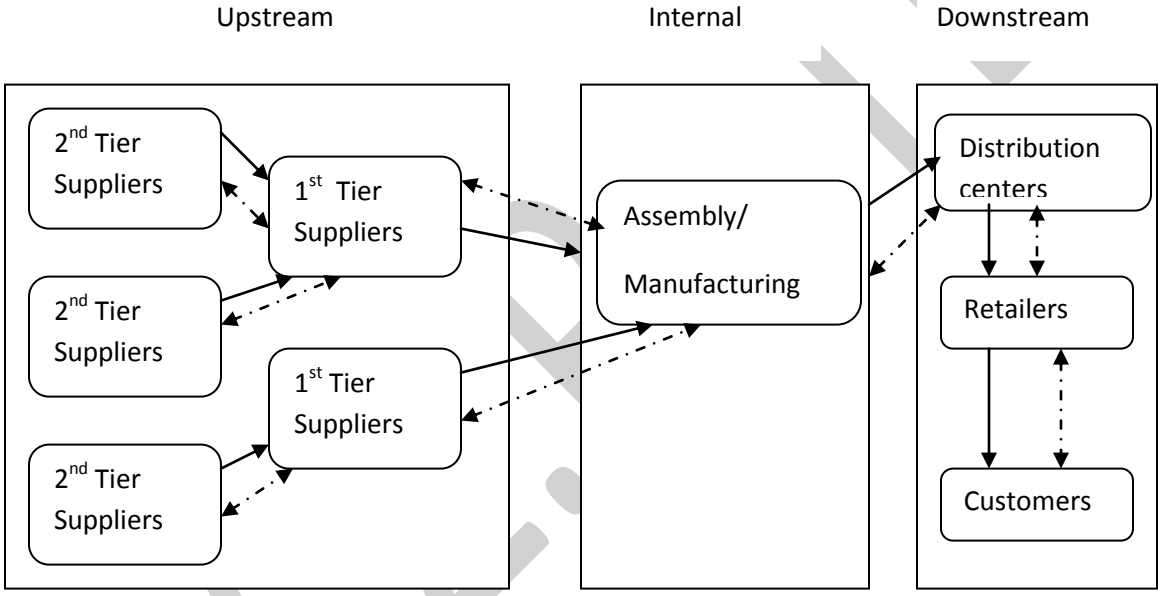
A Supply chain is the flow of materials, information, money and services from the raw material suppliers through factories and warehouses to the end customers. A supply chain also includes

the organizations and processes that create and deliver products, information, and services to the end customers. The term supply chain comes from the concept of how the partnering organizations are linked together.

Because supply chains may be long and complex and may involve many different business partners, we frequently see problems in the operation of supply chains. These problems may result in delays, customer dissatisfaction, in lost sales, and in high expenses from fixing the problems once they occur. World class companies attribute much of their success to effective SCM, which is largely supported by IT and e-commerce technologies.

When a supply chain is managed electronically, usually with Web technologies, it is referred to as E-supply chain.

Supply Chain Parts:



Upstream Supply Chain

It includes activities of a manufacturing company with its suppliers. The supplier relationship can be extended to the left in several tiers, all the way to the origin of the material (e.g. mining ores, growing crops). The major activity is Procurement.

Internal Supply Chain

It includes all the in-house processes used in transforming inputs received from the suppliers in to organization's outputs. It extends from the time the inputs enter an organization to the time that the products go to distribution outside of the organization. In this part, the major concerns are production management, manufacturing, and inventory control

Downstream Supply Chain

It includes all the activities involved in delivering the products to the final customers. Here the attention is directed at distribution, warehousing, transportation and after sale service.

❖ E-Supply Chain Management (E-SCM)

E-supply chain management (E-SCM) is the collaborative use of technology to enhance B2B processes and improve speed, responsiveness, and customer satisfaction. E-SCM is not about the technology change alone, it also involves changes in management policies, organizational culture, performance metrics, business processes, and organizational structure across the supply chain.

The success of an e-supply chain depends on the following:

1. The ability of all supply chain partners to view partner collaboration as strategic asset. It is the tight integration and trust among the trading partners that generates speed, responsiveness, and lower cost.
2. Information visibility along the entire supply chain. Information about inventories at various segments of the chain, demand for products, delivery times, and any other relevant information must be visible to all members of the supply chain at any given time. Therefore, information must be managed properly-strict polices, discipline, and daily monitoring.
3. Speed, Cost, quality and customer service. These are the metrics by which supply chains are measured. Consequently, companies must clearly define the measurements for each of these four metrics together with target levels to be achieved.
4. Integrating the supply chain more tightly. An e-supply chain will benefit from tighter integration, both within a company and across an extended enterprise made up of suppliers, trading partners, logistics providers, and the distribution channel.

❖ Activities and Infrastructure of E-SCM:

E-Supply chain consists of following six processes:

1. Supply chain Replenishment:

Supply chain replenishment encompasses production and distribution processes. The key to replenishment model is healthy B2B relationship between all the business partners in chain. B2B relies on cooperation of partners while managing replenishment model relies on sharing information. Trust between partners is large opponent to opening up supply chains. The replenishment model requires that partners in chain have access to the back end systems of other partners. Many companies are not willing to provide all necessary information. Also information has to be available in real-time. A customer is not going to wait for a week for a retail organization to determine if a product is in stock or if it can be shipped from the manufacturer.

2. E-Procurement:

E-Procurement is the use of Web based technology to support the procurement processes, including requisitioning, contracting, ordering, and payment. E-Procurement supports the purchase of direct and indirect materials and employs several web-based functions such as online catalogs, contracts, purchase orders, and shipping notices. E-Procurement improves the process of supply chain in various ways: visibility of available parts and its attributes

enables in quick decision making, online purchase orders expedite ordering process and advanced shipping notifications and acknowledgements streamline delivery.

3. Collaborative planning:

In collaborative planning, business partners-manufacturers, suppliers, distribution partners, and other partners- all have real-time access to point-of-sale order information. Partners develop single shared forecast of demand and a plan of supply to support this demand and update it regularly, based on the information shared over the Internet. All the parties work to a schedule aligned to a common view, and all have access to order and forecast performance that is globally visible through electronic links. Schedule, order, or product changes trigger immediate adjustments to all parties' schedules. Collaborative planning is designed to synchronize production plans and product flows, optimize resource utilization, and reduce inventories.

4. Collaborative design and product development:

Collaborative product development involves the use of product design and development techniques across multiple companies to improve product. During product development, engineering and design drawings can be shared over a secure network. Other techniques include sharing specifications, test results, design changes, and using online prototyping to obtain customer feedback. Development costs can be reduced by tightly integrating and streamlining communication channels.

EC Case-General Motors Collaborating Online

Designing car is a complex and lengthy process. GM builds prototypes that cost about 1 million dollars each and test. Even as late as 1990s, GM crashed as many as 70 prototype versions of each new model. The information regarding a new design has to be shared among approximately 20,000 designers and engineers in hundreds of divisions and departments at 14 GM labs, some of which are located in different countries. Also, GM must communicate and collaborate with the design engineers of more than 1000 suppliers. All of this communication and collaboration slowed the design process and increased its cost. It took over 4 years to get a new model to the market, and a new car often looked 'stale' on arrival because public tastes had changed during the course of development.

Then GM introduced new EC system called Unigraphics that allows 3D design documents to be shared online by both designers and engineers. This system was supported by collaborative and web conferencing tools like Microsoft's NetMeeting.

To understand how GM collaborates with its supplier. We consider a new seat frame to be made by Johnson Control. GM electronically sends the specifications for the seat to the vendor's product data system. Johnson control's system eMatrix is integrated with Unigraphics. This collaboration allows joint searching, designing, tooling and testing of the seat frame in real time, expediting the process and cutting costs by more than 10 percent. Web based review process enables GM to electronically crash some of the cars during the design phases rather than doing it physically after each design.

It now takes 18 months to bring new car in to the market. 60 cars are crashed electronically and only 10 cars are crashed physically.

5. E-Logistics:

Logistics is the process of planning, implementing, and controlling the efficient and effective flow and storage of goods, services, and related information from the point of origin to the point of consumption for the purpose of conforming to the customer requirements.

E-logistics is the use of the Web based technologies to support warehouse and transportation processes. E-logistics is defined to be the mechanism of automating logistics processes and providing an integrated, end-to-end fulfillment and supply chain management services to the players of logistics processes. Those logistics processes that are automated by e-logistics provide supply chain visibility and can be part of existing e-Commerce systems in an enterprise.

The typical e-logistics processes include Request For Quotes (RFQ), Shipping, and Tracking.

The business process manager invokes the RFQ process to get the basic services such as getting the quotes in an e-logistics process. Whenever the response is obtained, the purchase order (PO) is updated. Shipping process is also invoked by the business process manager and upon completion updates the PO. Once goods are shipped, the tracking number is given to the customer and that tracking number is mapped to the PO number in an e-commerce system. Customers can track their shipment with the help of that number.

EC companies many a times do not logistics infrastructure and are forced to use external logistics services. They are often called third-party logistics suppliers.

6. Use of B2B exchanges and supply webs:

B2B exchanges play a critical role in e-SCM. B2B exchanges play important role in Supply webs.

Supply webs that are formed as vertical exchanges by integrating the supply chain systems of various buyers and sellers create virtual trading communities.

B2B refers to electronic trade or partnering between organizations. The volumes of B2B transaction is estimated to be counted about 90% of ecommerce transaction, while B2C takes about 10% of ecommerce activity. Many B2B exchanges offer functionality for managing procurement of row materials and coordinating with suppliers. Public B2B exchanges often have more suppliers participating in. Companies have more options to select the suppliers that fit in their business needs, and they also have more power in negotiating the prices and terms of services. The cost of participating in a public exchange is significantly lower than implementing your owner SCM systems.

These processes use a variety of infrastructure and tools as follows:

Extranets: To support interorganizational communication and collaboration

Intranets: These are the corporate internal networks for communication and collaboration

Corporate Portals: These provide a gateway for external and internal collaboration, communication, and information search.

Workflow systems: These are the systems that manage the flow of information in organizations

Groupware: Groupware refers to software products that support groups of people who share a common task or goals and collaborate. Groupware features include email or

messaging system, file sharing, video conferencing, network to connect people, bulletin board or discussion groups, etc.

❖ **Typical Problems along the Supply Chain:**

Supply chain involves many internal and external partners located at different places. Both materials and information must flow among several entities, and these transfers can be slow and error prone.

A major problem is incorrect demand forecasting. A demand forecast is influenced by a number of factors, including consumer behaviour, economic conditions, competition, prices, weather conditions, technological developments, etc. Companies can improve their demand forecasting by using IT-supported forecasts, which are done in collaboration with business partners.

Another problem is lack of logistics infrastructure. Various uncertainties exist in delivery times, which depend on many factors, ranging from vehicle failures to road conditions. Pure EC companies which do not have logistics infrastructure are forced to use External logistics services. This can be expensive, plus it requires more coordination and dependence on outsiders. Hence large virtual retailers are developing physical warehouses and logistics system. Other virtual retailers are creating strategic alliances with logistics companies.

Quality problems with materials and parts can also contribute to deficiencies in the supply chain.

Bullwhip effect is another problem worth noting. It refers to erratic shifts in orders up and down supply chains. Actual sales are stable and predictable, but distributers' orders have swings. This was because of poor demand forecasting. This resulted in unnecessary inventories in various places along the supply chain, fluctuations in orders and the flow of inaccurate information. This bullwhip effect can be avoided if companies take steps to share information along the supply chain.

❖ **Need of Information sharing along the supply chain**

A supply chain includes the flow of information to and from all participating entities. Many of the supply chain problems occur due to poor flow of information, inaccurate information, untimely information, and so on. Information must be managed properly in each supply chain segment. Information systems are the links that enable communication and collaboration along the supply chain.

❖ **EC Solutions along the supply chain:**

1. Order Taking

   Order taking can be done on the Internet, EDI, Extranet, and it may be fully automated. In B2B, orders are generated and transmitted automatically to suppliers when inventory levels fall below certain levels. In B2C, a Web-based ordering using electronic form expedites the process, makes it more accurate and reduces processing costs.
2. Order Fulfilment

Order fulfilment can become instant if products can be digitized.

3. Electronic Payments
   Electronic payments can expedite both the order fulfilment cycle and the payment delivery period.
4. Inventories can be minimized
   This can be done by introducing make-to-order production process. By allowing business partners to electronically track and monitor orders and production activities, inventory management can be improved and inventory levels and the expense of inventory management can be minimized.
5. Collaborative Commerce
   Collaborative commerce among the members of the supply chain can be done in many areas ranging from product design to demand forecasting. This results in shorter cycle times, minimal delays and work interruptions and, lower inventories and less administrative cost.

❖ Electronic Payment Systems:

❖ ELECTRONIC CREDIT CARD SYSTEM ON THE INTERNET:

Credit cards are the most popular payment method for cyberspace consumer shopping today.

The Players:

1. Cardholder: a consumer or a corporate purchaser who uses credit cards to pay merchants.

2. Merchant: the entity that accepts credit cards and offers goods or services in exchange for payments.

3. Card issuer: a financial institution (usually a bank) that establishes accounts for cardholders and issues credit cards.

4. Acquirer: a financial institution (usually a bank) that establishes an account for merchants and acquires the vouchers of authorized sales slips.

5. Card brand: bank card associations of issuers and acquirers (like Visa and MasterCard), which are created

1. To protect and advertise the card brand
2. Establish and enforce rules for use and acceptance of their bank cards, and
3. Provide networks to connect the involved financial institutions.

The brand authorizes the credit-based transaction and guarantees the payment to merchants. Sometimes, the issuing bank performs the business of the brand.

Process of using Credit Cards

A typical process of using credit cards: Figure 8.7.

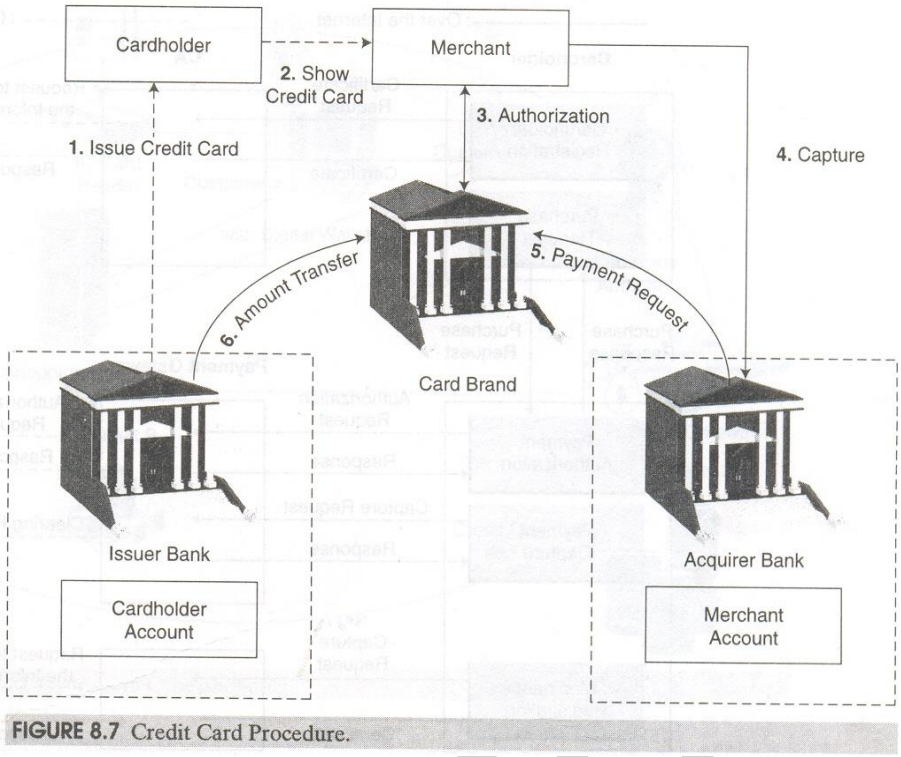


FIGURE 8.7 Credit Card Procedure.

The procedure varies depending upon the agreement among the brand, issuer, and acquirer.

The major steps in the process are:

1. Issue a credit card to a potential cardholder
   - A potential cardholder requests an issuing bank for the issuance of a card brand (like Visa or MasterCard), in which the cardholder may have an account.
   - The issuing bank approves (or denies) the application.
   - If approved, a plastic card is physically delivered to the customer's address by mail.
   - The card is activated as soon as the cardholder calls the bank for initiation and
   - signs the back of the card.

2. The cardholder shows the card to a merchant whenever he or she needs to pay for a product or service.

3. The merchant then asks for approval from the brand company, and the transaction is paid by credit. The merchant keeps a sales slip.

4. The merchant sells the slip to the acquiring bank and pays a fee for the service. This is called a capturing process.

5. The acquiring bank requests the brand to clear for the credit amount and gets paid. Then the brand asks for clearance to the issuer bank.

6. The amount is transferred from issuer to brand. The same amount is deducted from the cardholder's account in the issuing bank.

In the conventional credit card system, the process just described is only partially automated.

Disqualified card information is transmitted to the merchants on printed paper and requests for authorization are sometimes made by telephone (in many countries).

Moreover, merchants have to mail the paper sales slips to the acquirer bank for capturing.

Entire process must be fully automated on the Internet in a secure manner.

❖ DEBIT CARD:

A debit card is also known as a check card. It is a card that authorizes the EFT.

While credit card is a way to pay later, a debit card is a way to pay now. When you use a debit card, the amount is immediately deducted from your checking or savings account.

Debit card allows you to spend only what is in your bank account.

Debit cards are accepted at many locations including grocery stores, retail stores, gasoline stations and restaurants. A debit card is an alternative to carrying a checkbook or cash.

Many ATM cards have the features of a debit card. Advantages of using debit cards are:

1. Obtaining a debit card is much easier than obtaining a credit card.
2. Using a debit card instead of writing checks saves you from showing personal identification.
3. Using a debit card frees you from carrying cash, traveler's checks, or a checkbook.
4. Merchants accept debit cards more readily than checks, especially in other countries.

From the customer's point of view, there is no clear advantage of debit cards over credit cards.

Debit card purchases can have less protection than credit card purchases for items that are never delivered or are defective.

Returning goods or canceling services purchased with a debit card is treated as if the purchase were made with cash or check.

When a customer uses a debit card, no fee is charged to the merchant. So there is a strong incentive for merchants to offer discounts to encourage paying by debit card instead of credit

card.

For the payments of B2B EC, the credit card is too expensive an option for sellers, so the debit card can be a popular alternative over checks.

A debit card can be used at the e-store just like a credit card.

The certificate for a credit card may be shared for a debit card on the Internet.

Again, the safest place to store the certificate for a debit card is an IC card.

❖ SMART CARDS:

Concept of e-cash has been in use in the non-Internet environment under the name of smart card since the 1970s.

Plastic cards with magnetic stripes on them have been used to store information such as personal identification numbers. Cards were also used to store a value of money, which decreased with use.

Applications include telephone, transportation, and library.

Current generation of smart cards includes IC chips with programmable functions. The value of money can then be depleted and recharged.

Today, customers must keep separate e-cash cards. one for each application, and can recharge the card only at designated locations. such as a bank office or a kiosk.

In the future, recharges will be done through your PC whether it is on the Internet or your bank's network.

Most widely known general purpose smart cards are Mondex and Visa Cash.

❖ ELECTRONIC CHECK SYSTEMS (E-CHECK):

Paper checks are the most popular payment method for remote payees in several countries, including the United States. Problem is the high processing costs of paper checks. An average paper check transaction costs $0.79, which is twice the cost of an ACH service.

It seems necessary to develop a more economical electronic check (e-check) processing system. Cost of current check issuance is born by banks, there is no strong incentive for the payers to use e-checks.

E-check system is expected to become a major payment medium, especially for the B2B EC environment, in which payment amounts are large.

Since an e-check system is fairly similar to EFT.

There are several issues related to the implementation of e-checks. For example, the default risk in the checking system is an issue.

Checks are the fastest growing form of noncash payment.

Digital checking payment systems have many advantages:

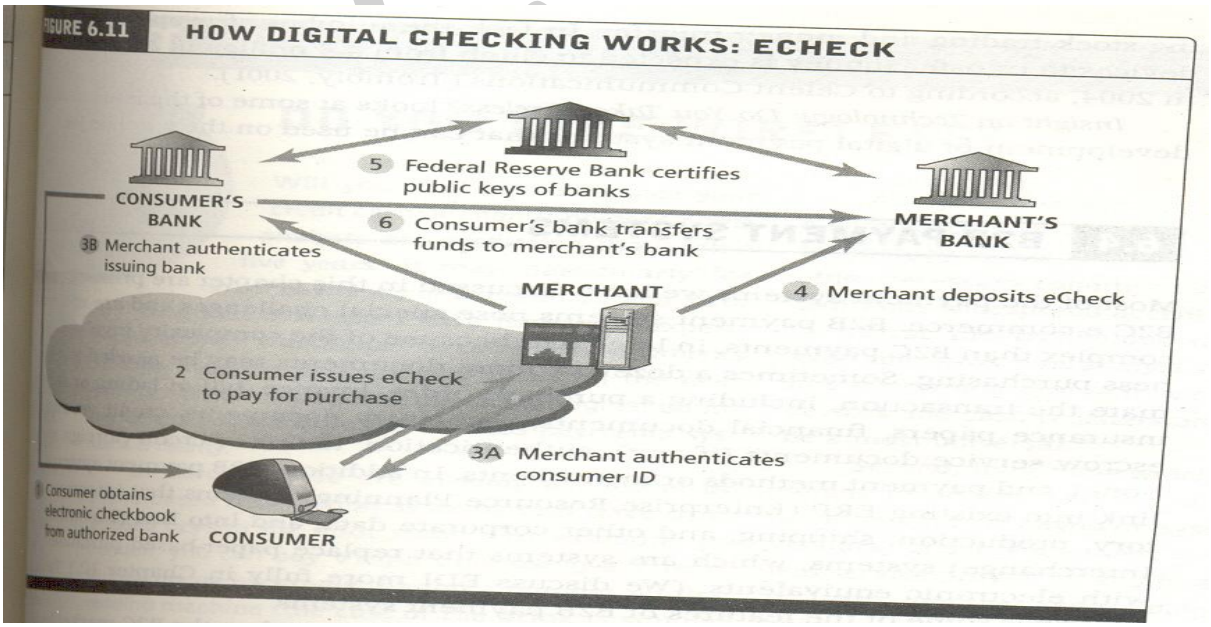
1. They do not require consumers to reveal account information to other individual when setting an auction.
2. They do not require consumers to continually sending financial information over the Web.
3. They are less expensive merchants. and
4. They are much faster than paper-based traditional checking.

E-Check is a much more sophisticated system.

A consortium of banks, government agencies, and technology companies began in 1996 to develop a plan for electronic checking that would use public key encryption and would not require a third party (such as Achex) to move funds.

The goal was to replace paper checks and to extend electronic funds transfers that already exist among large institutions to all businesses and even consumers.

How E-Check works: Figure 6.11



1. E-Check requires users to obtain a hardware based electronic checkbook from a traditional bank.

Electronic checkbook contains the consumer's digital signature in the form of a private key. Electronic checkbook also contains the issuing bank's public key.

2. Using software provided with the checkbook, the consumer fills out an electronic check form and sends it to a merchant over the Internet.

3A & 3B. Communication is encrypted and contains the consumer's digital signature, public key, and issuing bank's digital signature.

Upon receipt, the merchant authenticates digital signatures of both the sender and the issuing bank using their respective public keys.

4. Merchant deposits the check at its bank.

5. A higher level certificate authority such as the Reserve Bank, certifies the issuing bank's public key.

E-Checks are currently being tested by the U.S. Department of Treasury's Financial Management Service (FMS). FMS issues 857 million payments annually through electronic funds transfers and 363 million through paper checks.

E-checks are interesting because the electronic checkbook is a physical device. A physical device is chosen because it was thought to be more secured than creating accounts on internet. The device is portable and difficult to reverse engineer.

It is intended to fit into the existing infrastructure of the checking system developed by Reserve and the commercial banks, E-Check itself requires significant investment new infrastructure.

❖ CRM :

❖ Customer Relationship Management (CRM):

CRM recognizes that customers are the core of a business and that company's success depends on effectively managing its relationship with them. One of the major symptoms of the digital revolution is that the bargaining power of the customers is stronger than ever. Customers are called "kings" and "queens", and the organizations must make their customers happy in order to keep them. EC is not just buying and selling. Supporting CRM is a major function of EC.

Definition:

CRM is the business strategy to select and manage customers to optimize long-term value. CRM requires a customer-centric business philosophy and culture to support effective marketing, sales and service processes.

❖ Types of CRM:

1. Operational CRM:

Operational CRM is used for typical business functions involving customer services, order management, invoice/billing, or sales and marketing automation.

2. Analytical CRM:

Analytical CRM involves the capture, storage, extraction, processing, interpretation, and reporting of customer to a user.

3. Collaborative CRM:

Collaborative CRM deals with all the necessary communication, coordination, and collaboration between vendors and customers.

❖ eCRM:

Managing customer relationships is a business activity that has been practiced by corporations for generations. Computers are not required in order to manage one's customers well. However, CRM has been enhanced by various types of information technologies. Term eCRM was coined when customers started using web browsers, Internet and other electronic touch points like call centers.

The use of Intranet and internet has made customer services, as well as services to partners, much more effective and efficient than it was before internet. Through Internet technologies data gathered about customers can be easily fed in to sales, marketing and customer service application and analysis. eCRM has become a requirement for survival, not just competitive edge.

❖ SCOPE of CRM:

There are three levels of CRM:

1. Foundation of service:
   This includes minimum necessary services like site responsiveness, site effectiveness and order fulfillment

2. Customer-centered services
   These services include order tracing, configuration and customization and security/trust.

3. Value-added services
   These are the extra services like online auctions, online training, etc.

❖ Extent of Service:

Customer service should be provided throughout the entire product life cycle. The value chain for CRM is composed of four parts:

1. Customer Acquisition (Prepurchase support):
   Strategy to reflects and reinforces company's brand and provides information to potential customers to buy.

2. Customer support during purchase:
   Strategy provides a shopping environment that the customer sees as efficient, informative and productive

3. Customer fulfillment(purchase dispatch):
   This involves timely delivery, including keeping the customer informed about the fulfillment process, especially if there are any delays.

4. Customer continuance support (post purchase):
   Information and support help maintain customer relationship between purchases.

❖ Benefits of CRM:

The major benefit of CRM is the provision of superior customer care through the use of the Internet and IT technologies. CRM makes customers happy about the choices of products and services, fast problem resolution and response to information. Companies try to gain competitive advantage over their competitors by providing better CRM.

❖ Limitations of CRM:

1. Integrating CRM into the Enterprise
   CRM primarily lies between customer and enterprise. The communication between two is done via internet, regular telephone, mail, etc. However, to answer queries it is necessary to access files and databases. Companies may have to check data relevant to customer order with their manufacturing plants, transportation vendors, suppliers or other business partners. Hence, CRM needs to interface with the business processes and its information systems. ERP and CRM should be integrated. Such integration ensures that organizations can perform business intelligence across systems.

2. Justifying Customer Service and CRM programs
   Two major problems arise when companies try to justify expenditures for customer service and CRM programs. The first problem is the fact that most benefits of CRM are intangible, and second is that substantial benefits can usually be reaped only from loyal customers. In a study published in Harvard Business Review titled, "Zero Defections: Quality comes to Services", researchers demonstrated that the high cost of acquiring customers renders many customer relationship programs unprofitable during their early years. Only in later years, when the cost of retaining loyal customers falls and the volume of their purchases rises, do CRMs generate big returns. Therefore, companies are very careful about determining how much customer service to provide.

❖ CRM Implementation Issues:

To build an EC strategy that is centered on the customer businesses must take following actions:

- Deliver personalized products
- Target the right customers
- Help customers do their jobs
- Let customers help themselves
- Streamline business processes that impact the customers
- "Own" the customer's total experience by providing every possible customer contact
- Provide 360 degree view of customer relationship

Following five factors are required to implement CRM program effectively.

1. Customer-Centric strategy:

Customer-Centric strategy must be established at corporate level. This strategy must be based on and consistent with the overall corporate strategy and must be communicated across the whole organizations

2. Commitments from people:

The more commitments from the people across the corporation to the transformation of business strategy, the more likely the CRM implementation will succeed. Employees should be willing to learn the necessary technological skills.

3. Improved and Redesigned processes:

It is inherently difficult to identify the processes that need to be involved and frequently redesigned when implementing CRM.

4. Software Technology:

CRM software can record business transactions, create databases, provide decision making support and marketing campaign management tool. Companies should select appropriate CRM packages to meet specific corporate CRM needs as well as to enable integration with ERP. Major CRM vendors are Oracle, PeopleSoft, SAP, IBM, etc. Smaller players are BroadVision, Onyx, MicroStrategy, etc. Major CRM consultants are KPMG consultants and Patricia Seybold groups.

5. Infrastructure:

Effective CRM implementation involves suitable corporate infrastructure. This includes network setup, storage, data backup, computing platforms, and Web servers.

❖ **Classifications of CRM applications:**

1. Customer-facing applications
2. Customer-touching applications
3. Customer-centric intelligence applications
4. Online networking and other applications

1. Customer Facing Applications:

1. Customer Interaction Centers (CIC) / Call centers:

It is a comprehensive customer service entity in which EC vendors take care of customer service issues communicated through various contact channels. Providing well-trained customer service representatives who have access to data such as customer history, purchases, and previous contacts is one way to improve customer service.

CIC works like this:

1. The customer makes a contact via one or more channels.
2. The system collects information and integrates it with database, then determines a service response.
3. The customer is routed to self-service or a human agent
4. The service is provided to the customers

Example:

Integrated call center of Bell Advanced communication in Canada, whose subscribers can submit customer service queries over the Web. From the website, customer can fill out an e-mail form with drop-down menus that help pinpoint the customer's problem. The e-mail then is picked up by the call center, which then either answers the question immediately or tries to have human response within 1 hour.

2. Autoresponder:

The most popular online customer service tool is e-mail, which is used to disseminate information and to conduct correspondence.

Companies are over flooded with emails and answering them manually would be expensive and time-consuming. Customers want quick answers usually within 24 hours. Autoresponders are automated email reply systems which provide answers to commonly asked questions. Autoresponders, also called "infobots" and "email on demand", are text files that are returned via email, automatically on demand.

For example, the eGain system looks for certain phrases or keywords such as "complaint" or "product" and searches in to knowledge base to generate a matched response. For messages that require human attention, the query is assigned an ID number and passed along to customer agent for a reply.

3. Sales Force Automation:

Sales people constitute the major contact point with the customers. The more automation they have available, the better service they can provide to the customers. Sales force automation (SFA) applications support the selling efforts of a company's sales force, managing leads, prospects, and customers through the sales pipeline.

Example:

Ms. Priya each day drives out to her customers in a van stocked with the products. For each sale she has to note the customer, the number and the types of the products sold, and any special discounts made. This record keeping used to be done manually, and many errors were made, leading to customer complaints and lost sales.

Using SAP it was possible to implement a system using low-cost but powerful handheld wireless devices. With this Wireless device now priya and her coworkers have information on their finger tips, including updates on new products and special promotions. Sales representatives can place orders without delay and get immediate feedback on product availability and delivery times. The system at head quarters can prompt to make possible checks. The system can check if she is giving right discounts to right customers.

4. Field Service Automation:

Field Service employees are on the move, and they interact directly with the customers. Providing service employees with automation can increase customer service. Field service automation applications support the customer service efforts of field service representatives and

service managers. These applications manage customer service requests, service orders, service contracts, service schedules, and service calls.

Example: Ashish is a field representative who needs to know immediately when a customer's system is faltering, what is malfunctioning, and what type of service contract is in effect for billing purposes.

Using SAP's Mobile Service, Ashish can access all data he requires, including the name and address of the next customer he should visit, equipment specifications, parts inventory data, etc. Once he has completed his job, he can report back on the time and materials he used, and these data can be employed for timely billing and service quality analysis. Also the company can keep track of his progress and monitor any major fluctuations in activities. Thus both Ashish and his supervisors can remain better informed and better able to serve the customer.

2. Customer-touching Applications:

Here customers use computer programs rather than interacting with people.

1. Personalized Web pages

Many companies provide customers with the tools to create their own individual web pages (like MyYahoo). Companies can efficiently deliver customized information such as product information and warranty information when customer logs on to the personalized page.

Web pages can be used to record customer purchases and preferences. This information can be used to facilitate customer service also market additional products by matching valuable information about product performance and consumer behavior.

EC Application Case:

American Airlines website provided ability to generate personalized web pages for each of about 1 million customers. AA site was developed by Broadvision using One-to-one application. One of the core components needed to generate personalized web pages is intelligent agents, which dynamically match customer profiles to the database contents. The output of matching process creates a customized web page which contains information on consumer's home airport to preferred destinations. Personalizing web pages offered potential to increase customer loyalty and cement relationships with customers.

2. E-commerce Applications:

E-commerce applications let customers shop for the products through the virtual-shopping-cart and purchase the products in their shopping carts through virtual-check-out. Customers may also perform self-service support tasks such as order status or history inquiry. This provides convenience to many customers and also saves time and money, thus increasing their satisfaction.

3. Campaign Management:

These applications can automate marketing campaign activities such as online ad planning and analysis. The activities involved in web advertising range from tracking viewers to rotating ads. These activities require specific methodology and software known as ad management. Ad management software lets the advertiser send specific ads on schedule and target ads to certain population segments. For example, an advertiser can send an ad to all male residents of baroda between the age of 26-39 whose income level is above Rs. 300000. Campaign management is an important aspect of ad management. It is the management of entire marketing and advertising campaign. Campaign management can be integrated with CRM, which consists of marketing automation or they can be stand-alone campaign management products.

4. Web Self Service

Web self service strategy provides tools for users to execute activities previously done by corporate customer service personnel. Self service applications can be used with customers, employees, suppliers, and any other business partners.

Example: FedEx's tracking system

Previously, if a customer wanted information about whereabouts of a package, they had to call a representative, give the information about their shipment, and wait for an answer. Today, customers go fedex.com, insert their bill number and view the status of their package shipment.

Many other examples include checking arrival time of an airplane or finding balance of checking account. Initially, self-service was done in voice-based customer response systems known as voice activated response (VAR). Today, these systems are integrated and complementary to web based systems.

The benefits of Web Self Service for customers are quick response time, consistent, accurate data, and possibility of getting more details, and less frustration and more satisfaction. The benefits for organizations are lower expenses of providing service, ability to scale service without adding more staff, strengthening business partnerships, and improved quality service.

Self service Tools:

1. Self Tracking
2. Self configuration and Customization

Self Tracking

Self tracking refers to the systems, where customers can find status of an order or service in real time. Some auto manufacturers allow customers to track the progress of the production of a customized car. Some employers, universities, and public agencies will let job applicants track the status of their job application.

Self configuration and customization

Many build-to-order vendors provide customers with the tools to self-configure their product or service. In order to have an effective build-to-order system, companies and their suppliers must first understand what customers want. This can be done by finding the customer's requirements and then linking the configured order directly to production, so that production decisions are based on real customer demand.

3. Customer-Centric Applications:

Customer-Centric applications support customer data collection, processing and analysis.

Data Reporting:

Data Reporting presents raw or processed CRM-related information, which Managers and Analysts can view and analyze. Reports provide a range of tabular and graphical presentation formats. Analysts can interact with the report presentation, changing its visual format, "drilling up" into summary information, or "drilling down" in to additional details.

Data Warehouse

Medium and large corporations organize and store data in central repository called data warehouse so that it will be easy to analyze later on, when needed. Data warehouses can be effective CRM Tools if they contain information like

-customer information used by all operational CRM applications and by possible analytic applications

-information about the company's products and services and the channels through which it offers them

-information about company's marketing, sales and service initiatives and customers' responses to them

-information about customer requests and company's responses

-information about customer transaction

Data Analysis and Mining

Analytic applications process a warehouse's data, whereas reports merely present that information. Analytic applications are tools that can be used to analyze the performance, efficiency and effectiveness of an operation's CRM applications. Their output should enable a company to improve the operational applications that deliver customer experience in order to achieve the CRM objectives of customer acquisition and retention. For example, analytic applications may be designed to provide insight in to customer behavior, requests and

transactions, as well as in to customer responses to corporation's marketing, sales and service initiatives. Analytic applications also create statistical models of customer behavior, values of customer relationships over time, and forecasts of customer acquisition, retention, and desertion.

Data mining is sifting through an immense amount of data to discover previously unknown patterns. The data are consolidated in a data warehouse and datamarts.

4. Online networking and other applications

Bulletin Board

A bulletin board (pin board or notice board in British English) is a place where people can leave public messages, for example, to advertise things to buy or sell, announce events, or provide information. Bulletin boards are often made of a material such as cork to facilitate addition and removal of messages or it can be placed on the computer so people can leave and erase messages for other people to read and see.

Internet forums are becoming a global replacement for traditional bulletins. Online bulletin boards are sometimes referred to as message boards. The terms bulletin board, message boards and even internet forums are interchangeable, although often one bulletin board or message board can contain a number of internet forums or discussion groups.

Internet Forum

Internet forum is an online discussion site. Internet forums allow people to post messages and comment on other messages. Forums perform a function similar to that of dial-up bulletin board systems and Usenet networks that were first created starting in the late 1970s. Early web-based forums date back as far as 1996. A sense of virtual community often develops around forums that have regular users. Technology, computer games and/or video games, sports, music, fashion, religion, and politics are popular areas for forum themes, but there are forums for a huge number of topics. Forum software packages are widely available on the Internet and are written in a variety of programming languages, such as PHP, Perl, Java and ASP. The configuration and records of posts can be stored in text files or in a database. Each package offers different features, from the most basic, providing text-only postings, to more advanced packages, offering multimedia support. Many packages can be integrated easily into an existing website to allow visitors to post comments on articles.

Usenet group

Usenet is a worldwide distributed internet discussion system. One notable difference between a BBS or web forum and Usenet is the absence of a central server and dedicated administrator. Usenet is distributed among a large, constantly changing collection of servers that store and forward messages to one another. This is similar to the complex transportation plan of a city. There are multiple ways to get to any point in the city. If one of those ways is blocked for some

reason, there is always another avenue available to get there. In this manner, the User Network or Usenet allows newsgroup postings to reach their many destinations robustly. Individual users may read messages from and post messages to a local server operated by their Internet service provider, university or employer. The servers then exchange the messages among one another, making the messages available to readers beyond the original server.

E-mail Newsletters

E-mail marketing is a form of direct marketing which uses electronic mail as a means of communicating commercial or fundraising messages to an audience. However, the term is usually used to refer to:

- sending e-mails with the purpose of enhancing the relationship of a merchant with its current or previous customers and to encourage customer loyalty and repeat business,
- sending e-mails with the purpose of acquiring new customers or convincing current customers to purchase something immediately,
- adding advertisements to e-mails sent by other companies to their customers

Because of bulk of e-mail advertising, initially customers may be distrustful to e-mail marketing. Therefore, newsletter article, special offers, tips, quotes and other pieces of information e-mailed to people must be presented in professional and attractive manner. As customers find that they can trust the information provided, they will supply more personal information that can be added to the company's customer database.

Discussion lists:

Discussion lists automatically forward an email to all people who subscribe to the list so that they can react to it. Discussion lists can be distributed post-by-post (each recipient gets each email from the other members individually) or digested (all emails are compiled and sent out according to a schedule, e.g. once per day)

THE INTERNET contains literally thousands of special interest discussion groups, each individually managed by an Internet server known as a list. Any member of a list may take part in a conversation or begin a new topic. Listservers can also distribute electronic journals (e-journals) and newsletters, which are simply online magazines that are edited and distributed as a list. In general, most lists and e-journals can be joined by posting an email to the listserver address and writing the following in the first line of the actual posting:

subscribe [name of list] [your first name] [your last name]

The three main reasons to use these lists is for company to learn more about customers in particular industry, to market company's products and services, and to gather and share information with community of individuals with similar interests.

NOTE: The basic objective of this material is to supplement teaching and discussion in the classroom in the subject. Students are required to go for extra reading in the subject through Library work.