CHAPTER - 1
THE FOUNDATION OF E & M

1. CONCEPTUAL ANALYSIS OF E- COMMERCE

As we enter the third millennium, we are experiencing one of the most important charges to our daily lives- the move to an Internet-based society. The U.S Department of Commerce reported that in January 2002 more than 55 percent of all Americans (141 million) surfed the Internet. More interesting is the fact the over 90 percent of people 5 to 17 years old surf the Internet on a regular basis. It is clear that this percentage will continue to increase. Similar trends exist in most other countries. This percentage will continue to increase. Similar trends exist in most other countries. As results, much has changed at home, school, work and aims the government and even in our leisure activities. Some changes are already here and are spreading around the globe. Others are just beginning. One of the most significant changes in how we conduct business, especially in how we manage market places and trading the senior author of all his bills online, trades stock and event tickets online, printer and memory sticks online, buys books online and much more.

Electronic commerce describes the manner in which transactions take place over networks, mostly the Internet; it is the process of electronically buying and selling goods, services and information. Certain EC applications, such as buying and selling goods, services and information. Certain EC application, such as using and selling stocks on the Internet, are growing very rapidly. But electronic commerce is not just about buying and selling; it is also about electronically communicating, collaborating and discovering
information. It is about e-learning, e-government, and much more. Electronic commerce will impact a significant portion of the world, affecting businesses, profession and, of course, people.

The purpose of this study to describe the essentials of EC-how it is being conducted and managed as well as assessing its major opportunities, limitations, issues and risks. As electronic commerce is an interdisciplinary topic, it should be of interest to managers and profession people in any functional area of the business world. People in government, education, halts services and other areas will benefit from learning about EC.

Today, EC is going through a period of consolidation in which enthusiasm for new technologies and ideas in now being accompanied by careful attention to strategy, implementation and profitability. Most of all, people recognize that e-business has two parts; it is not just about technology, it is also about business.

**E-Commerce:** the process to buy, to sell, or to interchange products, services and the information through the networks of computers.

**Commerce:** commerce is the transactions of goods, assets & cash between the business organizations.

**Communication:** the delivery of merchandise, services, the information or the payment of the announcement electronically: the capacity to buy and to sell products, services, and process of the business of the information electronically: finishing process of the business electronically that is to say, to replace physical process by informative services: the tool to improve the quality of the services of client, and to increase the speed
of the delivery of the service happens to learn flank cuts: it allows to the training and educations in line of collaboration: Intra. aids and intra-community of organization of the collaboration: it provides a place of meeting them members to learn and to collaborate.

**E-business:** the purchase and the sale of merchandise, services and clients also who serve, collaboration with the business partners, and transactions electronic that lead with an organization.

**Types of E-Commerce:**

- Business-to-consumer B2C: transactions between the individual organizations of the business and buyers.
- Consumer-to-business C2B: transaction in which the individuals sell products and services to the business.
- Consumer-to-consumer C2C

2. **OBJECTIVE OF STUDY**

   It is necessary to create a sense of relationship and reinforce brand loyalty with customers who seldom contact the company directly. The impact of the web on business is far reaching. It is more than transferring current business models, changing the corporate culture, reinvesting business processes, and establishing reliable customer service. Global competition, laws, and customer preferences are among the issues being affected by E-commerce.

   The objective of study is quickly and effectively to turn around a payment problem and "Customer Relationship". The study also aims at gathering the E-product information so that the potential
impact of problems and concerns on other customers can be assessed and correction and improvements can be made. The study would be unique in terms of coverage, approach and treatment of the key life cycle phase of E-payment. It will provide the knowledge as to how to plan, design and evaluate E-Customer Relations and E-Payment and what technology is needed for doing business on the web.

3. WHAT IS M-COMMERCE

Mobile Commerce is the ability to conduct commerce, using a mobile device e.g. a mobile phone (cell phone), a PDA, a smart phone and other emerging mobile equipment such as desktop mobile devices.

“M-Commerce is any transaction, implying the transference of the property or the rights to use merchandise and services, that are initiated and/or ended up using the movable access to the networks by computer with the help of an electronics. Commerce is the purchase and the sale of merchandise and services through the devices handheld without threads for example cellular telephone and personal digital assistants. Known like next-generation and e-commerce, m-commerce allows users to have access to the Internet without needing to find a place to cover plug. The technology that emerged behind m-Commerce, which one is based on the protocol of use without threads, has made greater steps distant spot in Europe, where the equipped movable devices of micro-browsers are much more common Fabric-ready that in the United States.

In order to operate the potential of market of m-Commerce the fixed manufacturers by hand such as Nokia, Ericsson, Motorola and Qualcomm is working with the carriers such as radio of AT&T and
Sprint to develop the WAP-allowed elegant telephones, the answer of the industry to the Swiss knife of the army and ways to reach them. Using Bluetooth the technology, the elegant telephones offers fax, the e-mail, and the capacities all of the telephone in one, paving the way so that m-Commerce is accepted by a more and more mobile manual labor. Then the devices without threads of the excess of the delivery of the content more quickly get to be, more surely and scalable, is ample speculation that m-Commerce will exceed the line and e-Commerce of the wire as the method of option for the digital transactions of the commerce.

**The industries affected by m-Commerce include:**

- **Financial services,** which includes mobile banking as well as services of the brokerage, inside what quotations of the action can be exhibited and to negotiate to lead equal device handheld.

- **Telecommunications,** inside what service changes, the revisions of the payment of the account and of handheld counts can all lead being of he himself device.

- **Service/a retail,** like they give to the consumers the capacity to place and to pay orders in march.

- **Informative services,** which include the delivery of the financial news, of the figures of the sports and of the traffic update to a single movable device IBM and other companies are experimenting with software of the recognition of speech as way to assure the security for the transactions m-Commerce.
Products and services available
Mobile vouchers, coupons and loyalty cards

The technology that marks moving body can also use for the distribution of voucher, coupons and cards of loyalty. The bond, the coupon, or the card of loyalty is represented by a virtual symbol that is sent to the movable telephone. Presentation of a mobile telephone with one of this symbol in point of sale, he allows that the client receives the same advantages that another client who has the card of loyalty or the other coupon/voucher. The coupons can be sent to use of the client the location based services when it is in certain physical proximity.

Mobile ticketing
Tickets can be sent to mobile phones using a variety of technologies. Users are then able to use their tickets immediately by presenting their phones at the venue. Mobile ticketing for airports, ballparks and train stations, for example, will not only streamline unexpected metropolitan traffic surges, but also help users remotely secure parking spots (even while in their vehicles) and greatly facilitate mass surveillance at transport hubs.

Location-based services
Unlike a home PC, the location of the mobile phone user is an important piece of information used during mobile commerce transactions. Knowing the location of the user allows for location based services such as:

- local maps
- local offers
- local weather
people tracking and monitoring

Content purchase and delivery
Currently, mobile content purchase and delivery mainly consists of the sale of ring-tones, wallpapers and games for mobile phones. The convergence of mobile phones, mp3 players and video players into a single device will result in an increase in the purchase and delivery of full-length music tracks and video. Download speeds, if increased to 4G levels, will make it possible to buy a movie on a mobile device in a couple of seconds, while on the go.

Information services
A wide variety of information services can be delivered to mobile phone users in much the same way as it is delivered to PCs. These services include:

- news services
- stock data
- sports results
- financial records
- traffic data and information

Particularly, more customized traffic information, based on users' travel patterns, will be multicast on a differentiated basis, instead of broadcasting the same news and data to all Users. This type of multicasting will be suited for more bandwidth-intensive mobile equipment.

Mobile banking
Banks and other financial institutions are exploring the use of mobile commerce to allow their customers to not only access
account information, but also make transactions, e.g. purchasing stocks, remitting money, via mobile phones and other mobile equipment. This service is often referred to as Mobile Banking or M-Banking.

**Mobile brokerage**
Stock market services offered via mobile devices have also become more popular and are known as Mobile Brokerage. They allow the subscriber to react to market developments in a timely fashion and irrespective of their physical location.

**Auctions**
Over the past three years mobile reverse auction solutions have grown in popularity. Unlike traditional auctions, the reverse auction bills the consumer's phone each time they place a bid. Many mobile PSMS commerce solutions rely on a one-time purchase or one-time subscription; however, reverse auctions are high return applications as they allow the consumer to transact over a long period of time.

**Mobile purchase**
Mobile purchase allows customers to shop online at any time in any location. Customers can browse and order products while using a cheap, secure payment method. Instead of using paper catalogues, retailers can send customers a list of products that the customer would be interested in, directly to their mobile device or consumers can visit a mobile version of a retailers e-commerce site. Additionally, retailers will also be able to track customers at all times and notify them of discounts at local stores that the customer would be interested in.
Mobile marketing and advertising
Mobile marketing is an emerging concept, but the speed with which it's growing its roots is remarkable. Mobile marketing is highly responsive sort of marketing campaign, especially from brands’ experience point of view. And almost all brands are getting higher campaign response rates Corporations are now using m-commerce to expand everything from services to marketing and advertisement. Although there are currently very few regulations on the use and abuses of mobile commerce, this will change in the next few years. With the increased use of m-commerce comes increased security. Cell phone companies are now spending more money to protect their customers and their information from online intrusions and hackers.

Payment methods
The main payment methods used to enable mobile commerce are:

- premium-rate calling numbers,
- charging to the mobile telephone user's bill or
- Deducting from their calling credit.
- Registration of a credit card that is linked to a SIM card.
- Billing a customer's credit card through a secure user interface.

M-commerce in India
Reliance Infocomm and Bharti Tele-Ventures are the early movers in the market, which offer m-commerce services such as bill payment and ticket purchases. Reliance’s mobile payment facility offers services such as paying monthly bills, book railway and airline tickets and book movie tickets.
Airtel, ICICI Bank and VISA have tied up to introduce mChq so that Airtel customers and ICICI Bank Visa cardholders can clear their purchases through their mobile phones. Airtel also provides a facility through which a prepaid customer can recharge his prepaid card electronically to any denomination. Out of their pre-paid users, 70% of total, about 60% recharge through the electronic process.

**M-Commerce Applications**

The general m-commerce applications are categorized as transaction management, digital content delivery and telemetry services. The applications can be further subdivided into passive and active m-commerce applications. Active application relates with the applications in which the user has to take the initiative on his wireless device. In contrast, the passive applications themselves get activated towards accomplishing the assigned jobs or facilitate the users to carry forward.

**Active Applications**

M-commerce transactions point to online shopping Web sites tailored to mobile phones and PDAs which are being equipped with the capabilities of browsing, selection, purchase, payment and delivery. These sites also include all the necessary shopping features, such as online catalogs, shopping carts and back office functions as currently available for desktop computers. Leading online booksellers already started the commercial activities for wireless devices. Another important m-commerce transaction is to initiate and pay for purchases and services in real time. The highest volume of m-commerce transactions using wireless devices in the days to come is bound to occur on the side of micro-transactions. When individuals reach for their e-cash-equipped mobile phones or PDAs instead of
coins to settle micro transactions, such as subway fees, widespread use of digital cash will become a reality.

The second important one is regarding digital content delivery. Wireless devices can retrieve status information, such as weather, transit schedules, flash news, sports scores, ticket availability and market prices, instantly from the providers of information and directory services. Digital products, such as MP3 music, software, high-resolution images and full-motion advertising messages, can be easily downloaded to and used in wireless devices when the 3G transmission technology becomes usable. The proposed arrival of better display screen and higher bandwidth will surely trigger the development of innovative video applications. This will help wireless users to access, retrieve, store and display high-resolution video content for a time of entertainment, product demonstration and e-learning.

The last major application of m-commerce is telemetry services, which include the monitoring of space flights, meteorological data transmission, video-conference, the Global Positioning System (Global Positioning System), wildlife tracking, camera control robotics, and oceanography. Thus in the near future, wireless phones and appliances can be used by people to contact and communicate with various devices from their homes, offices or anywhere at any time. For example, delivery drivers will ping intelligent dispensing machines or users can transmit messages to activate remote recording devices or service systems.

**Passive Applications**

This type of applications seems manifold and exciting. Instead of using dedicated cash cards for automatic collection of toll charges,
digital cash can be used by integrating cash cards with mobile devices. Mobile users can easily pay and record payment of toll, mass-transit, fast-food and other transactions.

Nowadays mobile users can send and receive short text messages upto 160 characters that show up on the user's display screen. As digital convergence becomes more common place, all kinds of mail, such as e-mail, fax documents and digitized voice mail, can be received passively. Thus it is felt that in near future there will be many novel services for mobile users for a fixed fee. Further on, users may be tempted for some services free of cost for viewing audio or video advertisement delivered to their wireless devices. Any kind of security breach, illegal intrusion, unusual event or unacceptable condition will trigger automatic notification to users irrespective of location. Airline companies are testing this technology to alert frequent air passengers regarding seat availability and up gradation, to notify the changes made in the timings etc. through wireless devices.

Passive m-commerce telemetry is the foundation of still another form of interactive marketing. Stores will be able to market their products and services by constantly transmitting promotional and inducing messages and doing out something towards getting the attention of both passers-by and remote mobile users.

4. E commerce & M-Commerce technologies:

Technologies for E-Commerce: The technologies for and e-commerce include of all the components required for the businesses that they transact in electronic dominion. The several components or subsystems that compose the wonderful system of e-commerce include the servant of the systems of the Digitals payment, the
entrance of the payment, the folder and systems of the fire-resistant security like the detection of the intrusion. The systems of the Digital payment include the instruments of the payment like -check and the credit cards. E Wallet is used to maintain diverse instruments of the payment. The servant of the payment and the entrances of the payment help to make the payment end-to-end in the electronic dominion. Public the dominant infrastructure is the required necessary infrastructure for the effective operation of e-commerce in uses of the real life.

i) Introduction: With a deeper penetration and one more an extension of the Internet, the uses are becoming more and more available. And e-commerce is one such technology that allows, that has ample utility of the extension tact of almost each body in society. Aid to the buyers and the salesmen, individuals and jets of the business, the sale to by minor and of the bulk. In fact, electronic commerce have very attractive characteristics like anywhere, in caulquier moment doing purchases banking activities (24 hours x 365 days) and no holidays, inventory zero, any intermediaries, and so on. Aid to clients a compare several products in range and the class, studies its characteristics/operation and make a decision informed on the merchandise before buying. On the other hand, the salesmen/the producers also obtain the advantage of clients pointed without making active commercialization.

ii) CMC's Payment Server: Business on the Internet, especially in making and receiving payments, is a serious matter for millions of buyers and sellers worldwide. Receiving payments is critical to the health of a business and the growing
importance of the Internet means that businesses need effective ways to deal with Internet payments.

Any electronic commerce transaction involves the participation of the buyer, issuer who provides the payment instrument used in it, the merchant who accepts payment, and the acquirer, who processes the merchant's transaction. As the new payment methods are evolving quite rapidly, it is becoming highly difficult for the merchant to add support for new payment methods.

In response to the needs of the electronic commerce community, the CMC Payment Server has been designed which provides payment functions for Internet merchants. It helps merchants accept multiple payment methods, customize specific payment methods with varied Financial Institutions, and adapt to rapidly changing business requirements and technology by easily adding more payment type options as they emerge. It separates payment management (the framework) from specific Payment types so that each can evolve independently.

The CMC Payment Server supports nearly unlimited variety of payment mechanisms, protocols and electronic commerce operations for secure online transactions.

**iii) System of invoicing in line**

With ever increasing spread of Internet, Bill presentment and payment is becoming a new type of service area for periodic billers like Telephone Companies, Electricity etc.
Internet based bill presentment and payment system converts billing centers from cost centers to revenue centers and for customers the system is a personalized service.

CMC’s Internet based bill presentment and payment system provides direct personalized communication channel between Billers and Payers. Opens a new revenue channel by cross-selling advertisements. Drastic reduction of costs that is associated with paper based billing system. For customers or payers, receiving bills to payment of bills at one window through a Personal Computer.

**iv) On-Line Billing System**

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**Internet:**

1. Customer gets an Electronic Cheque Book from his/her bank.
2. Customer sends registration request for online billing through biller’s World Wide Website.

3. Biller verifies credentials of the application and grants a subscription force online billing and sends user-id and password through e-mail or immediately when credentials are submitted. This enables the customer to view and pay bills.

4. Customer logs into his/her online billing account of the biller’s website, verifies the bill details and pays with an electronic cheque. The electronic cheque or e-cheque is sent to the Biller.

5. Biller system receives e-cheque and sends an acknowledgement for the received e-cheque.


7. Bank validates the received e-cheques and sends them to the Customer’s bank for clearance. Honored or dishonored information is sent to the Biller.

8. Biller’s billing system updates the customer billing data based on cheque clearance status and sends appropriate information to the customer through electronic mail.

The steps 1-3 above are done for registration, which is a one-time activity for a given customer, whereas steps 4-8 are used for viewing/paying bills, which is an on-going activity.
v) CMC’s E-WALLET

With the growth of business on Internet, new electronic payment methods are evolving. As the new payment methods are evolving quite rapidly, it is becoming highly difficult for the end user to manage his payment instruments. Internet wallets help the user in managing his payment instruments. In response to the needs of the electronic commerce community, the CMC Electronic Wallet (CEW) has been developed to support nearly unlimited variety of payment mechanisms, protocols and electronic commerce operations for secure online transactions. Once a user decides to make an online purchase, CEW guides the user through the transaction by helping him choose a payment method and hide the complexity of how the payment is executed.

vi) CMC’s PAYMENT GATEWAY

CMC Payment Gateway is a secure payment gateway application that enables acquirers to accept credit card payments from Merchant storefronts on the Internet. On one side, it connects the Payment Servers and, on the other side it interacts with legacy payment processing systems of banks. The Payment Server integrates the merchant’s Internet storefront. The Payment Gateway extends existing credit card payment processing systems to accommodate the Internet needs.

Payment Gateway supports all aspects of credit card transactions, including high-volume authorization, payment capture, authorization reversal and credit transactions. It receives payment authorization and payment capture requests from Payment Servers or merchant servers, translates them into the protocol format used by
an acquirer’s host system, routes these requests to the acquirer and then relays responses received from the acquirer back to the respective Payment Server or merchant server.

CMC’s Payment Gateway provides robust and flexible integration capabilities to link Internet based merchandising with credit card financial networks. The credit card transactions include Authorization, Capture, Credit and the respective reversals.

Built around an open architecture, CMC’s Payment Gateway can support multiple types of payment instruments and transactions through the use of plug-in modules.

Vii) CMC’s E-CHEQUE SYSTEM

A Cheque is a signed paper document that orders the signer’s bank to pay an amount of money to a person specified in the cheque or bearer from the signer’s account on or after a specified date. Cheques have the advantage that payers (drawer) and payees can be individuals, small businesses, brokerages, corporations, governments or almost any other type of organization.

The electronic cheque, or e-cheque, is based on the idea that electronic documents can be substituted for paper and public key cryptographic signatures can be substituted for handwritten signatures. Therefore, the e-cheque can replace paper cheques without the need to create a new payment instrument, along with the commercial practice changes that a new payment instrument would imply. Instead, the e-cheque is designed to fit into current cheque practices and systems with minimum impact on payers, payees, banks and the financial system. The payer writes an e-cheque by structuring an electronic document with the information legally
required to be in a cheque and cryptographically signs it. The payee receives the e-cheque, verifies the payer's signature, writes out a deposit and signs the deposit. The payee's bank verifies the payer's and payee's signatures, credits the payee's account and forwards the cheque for clearing and settlement. This credit will not be a clear credit, it will be a float or temporary credit, to be confirmed only after it has been cleared by the paying bank, in the settlement process. The payer's bank verifies the payer's signature and debits the payer's account. The advantage of e-cheque is that cryptographic signatures on every e-cheque can be verified at all points, while in paper cheques handwritten signatures are rarely verified.

The electronic cheque is designed to perform the payment and other financial functions of paper cheques, by using cryptographic signatures and secure messaging over the Internet. The electronic cheque system is designed with message integrity, authentication and non-repudiation properties sufficient to prevent fraud against the banks and their customers. It is compatible with either interactive web transactions or with electronic mail. Since the electronic cheque does not depend on real-time interactions or on third party authorizations, electronic cheques are better able to survive outages of network links and computing nodes.

viii) PUBLIC DOMINANT INFRASTRUCTURE OF CMC

Public key cryptography is ideally suited to the needs of distributed computing, and X.509 certificates augment public key cryptography by giving users the means to validate a public key. Public key infrastructure, is the set of security services that enable the use and management of public key cryptography and certificates,
including key, certificate and policy management. PKI is a comprehensive system required to provide public-key encryption and digital signature services. The purpose of a public-key infrastructure is to manage keys and certificates. By managing keys and certificates through a PKI, an organization establishes and maintains a trustworthy networking environment.

Electronic commerce and communication on the Internet has heightened the focus on PKI products and services, and they are becoming important tools for authentication and authorization in a variety of applications.

**ix) SECURITY OF THE NETWORK**

We have developed the system of the detection of the intrusion of the fire-resistant one and the network to treat security of the network. A fire-resistant one is a system that makes fulfill an access controlled to the part resources that they compute through networks. It protects users in local area network against the malicious users in Internet or the other LANs in the Intranet, whereas to the same time allowing that an approach based on the rules has access and shares to resources that they compute through Internet and Intranets. The real means by which this is obtained vary, but in the principle, the fire-resistant one can be thought about like pair of mechanisms: one that exists to block traffic and the other that exists to allow traffic. Conceptual there are two types of fire-resistant:

- Level of network
- Level of the use

The fire-resistant ones of the network level make generally their decisions based on the source, directions and ports of destination in
individual packages of the IP. Fire-resistant the level ones of the use are generally hosts who work the servants of the power, that it directly does not allow any traffic between the networks and that makes the elaborated recording and revision of the traffic that happens through them. Since the uses of the power are software the components that work in the fire-resistant one, are a good place to make portions of recording and access control.

**Mobile-commerce Technologies:**

Mobile-commerce is possible to be defined as “any operation with a financial burden that is made by the use of the movable telecommunications Set-up”. The technology behind the commerce of mobile is similar to e-commerce. The original idea with m-commerce is to do e-commerce much more easy that fixed use of the Internet talks about as. Mobile-commerce is possible to be considered as the system of rise of functions and the people of the services can have access of the movable devices allowed Internet.

These definitions suggest is much reach to the mobile commerce. Instead of trying to rise with enigmatic adjustments of a size all the definition, an approach practitioner more is today watch some of the many found forms of mobile commerce. Mobile-commerce is a concept, that is hard to define since there are many definitions and constantly the new definitions are raising. Widely used the definition of Mobile-commerce is when a mobile unit been implied in a certain class of process of decision when doing a purchase. Other definitions indicate that it happens Mobile-commerce only deal when the transaction of the purchase of the set of a service, a delivery and a payment is made the mobile unit nevertheless. Mobile-commerce is the innovating way to make
transactions of business in the atmosphere without threads. The advance of the technology for the development of the solutions of Mobile-commerce provides.

Facility for the purchase and the sale without paper of the information, products and service with the Website generally using movable telephone service.

The user can see the sites in his browser of the mobile telephone, can put order and buy products or the services on the network without threads. The protocol of use without threads is a system of the protocols that work with existing standards to make the Internet the devices without accessible direct digital threads.

The services of WAP include three portions that are the supplier on watch of WAP, the supplying contentment of WAP and the mobile phone allowed WAP.

When anyone tries to have access to allowed site WAP through mobile phone, the supplier on watch mobile authenticate to that person in the WAP servant, which in turn transfer that person to the WAP gateway. During this time the tariffs of calls are different. The transferences of the entrance of then WAP that person to the supplier on watch of WAP who will provide services such as the news, email, information etc. The WAP telephones must browser micro, that allows sailing of the content like a Conventional Browser.

WAP incorporates a called protocol the security of the layer of Wireless transport, that allows to the authentication and the coding of data. The GPRS introduction will down bring the great changes for load speed through mobile phone. The document format is language without threads of the benefit margin.
TECHNOLOGY FACTORS

Mobile Platform Selection Criteria

To successfully enterprise application, mobile platforms must support a number of standards to allow enterprises to leverage existing technologies for the users.

i) **Transactional Interface with Back-end data:** Mobile platforms should connect directly to back-end data sources and use open standards to support transactional application.

ii) **Compatibility with Mobile standards:** Mobile platform should simultaneously support the wireless networks like CDMA, TDMA, GSM and IDEN.

iii) **Wireless Device Support:** Mobile platforms should support the digital devices including pagers, SMS; Web enabled phones, Pocket PCs and other PDAs and any other future devices.

iv) **Seamless Integration of Data and Audio:** Mobile platform should support enterprise applications that are best suited to multiple media formats. The platform should be able to blend voice and data through support for the audio channel enabling subscribers to move normally form data to voice and voice to data within a single application.

Wireless and Mobile Middleware for Mobile Commerce

Mobile middleware can be defined as an enabling layer of software that is used by application developers to connect their M-Commerce applications with different networks and operating systems. In mobile commerce environment, middleware becomes very important due to the potential values of many M-Commerce
transactions, limited capabilities of devices and diverse set of requirements presented by various M-Commerce applications.

WAP is designed for interoperability of different wireless networks, devices and applications using a common set of applications and protocols. Using WAP architecture, wireless middle can be deployed as a client on a mobile terminal and as a server on the gateway. WAP uses a micro browser as the client software and supports text, graphics and standard Web content. WAP 2.0 is the latest that adds the support for “Push” operation, allowing information to be sent without an explicit request to users.

It also supports a variety of user interfaces and standard Internet protocols such as TCP/IP and HTTP.

POPULAR APPLICATIONS OF M-COMMERCE

**Mobile Office:** Corporate e-mail systems have become the foremost connection system in the enterprise. Wireless access to mobile office solutions such as wireless enabling Microsoft Exchange and Lotus Domino include real time access to e-mail, calendars, contact information and attachments.

**Enterprise Applications:** Many companies use wireless initiatives by enabling revenue generating field sales and field personnel. Wireless extension of back-end data leverage investments in enterprise applications such as Sales Force Automation(SFA) software provide customer history, product specification, pricing and availability, terms and conditions and enterprise information.

**Customer Relationship Management:** Systems help the manager’s interactions with customers by improving sales,
marketing and customer support processes. Companies are now realizing that customer service is a key differentiator to reduce customer agony and increase customer loyalty.

**Supply Chain Management:** SCM has evolved through the application of E-Business technologies into a powerful strategic function. Establishing wired business process across multiple organization is a challenging task, which involves several inefficacies including incompatible technologies, operating systems, protocols etc.

The mobile capabilities of mobile SCM extension provide a convenient, time saving and highly accurate means of capturing data on movements of goods and other events. They simplify checking and monitoring tasks and Provide up-to-date information on process status, enabling the users to react swiftly to unforeseen events.

5. **SCOPE OF STUDY**

This covers the various technologies, it gives the understanding about the technology that how these technologies work and how it helps in this globalization era and makes our tasks easy at every level of business and life.

(a) **Coverage:** As the coverage of technology has been widen to a lot of extent and most of the people were connected to each other with the help of these technology and the life has become more easier than before while doing transactions. It covers some of the technology concepts which were going now-a-days, and how these
can be implemented and at what extent these can be beneficial for the people.

(b) Key concepts: It aims not only at doing excellent philosophical and ethical research, but also has a keen eye for social relevance and impact of this study.

Demand from society will probably go much further than personal integrity in the years to come. From high technology, it is not only expected that they do business in a socially responsible way, but also that they innovate in a socially responsible way.

(c) Internet based research approaches: Internet research is the practice of using the Internet, especially the World Wide Web, for research. To the extent that the Internet is widely and readily accessible to hundreds of millions of people in many parts of the world, it can provide practically instant information on most topics, and is having a profound impact on the way in which ideas are formed and knowledge is created.

Research is a broad term. Here, it is used to mean "looking something up". It includes any activity where a topic is identified and an effort is made to actively gather information for the purpose of furthering understanding. Common applications of Internet research include personal research on a particular subject (something mentioned on the news, a health problem etc), students doing research for academic projects and papers and journalists and other writers researching stories. It should be distinguished from scientific research "research following a defined and rigorous process" carried out on the Internet; from straightforward finding of specific info, like locating a name or phone number; and from research about the Internet.
i) E-Experiment: Experiment is the step in the scientific method that arbitrates between competing models or hypotheses. Experimentation is also used to test existing theories or new hypotheses in order to support them or disprove them. An experiment or test can be carried out using the scientific method to answer a question or investigate a problem. First an observation is made. Then a question is asked, or a problem arises. Next, a hypothesis is formed. Then experiment is used to test that hypothesis. The results are analyzed, a conclusion is drawn, sometimes a theory is formed, and results are communicated through research papers.

A good experiment usually tests a hypothesis. However, an experiment may also test a question or test previous results.

- Replication of results is “a standard procedure in the validation of any scientific discovery.”

- “Science was long protected from fraud by a built-in safety mechanism; to be generally accepted, experiments must be repeatable by others.”

It is important that one knows all factors in an experiment. It is also important that the results are as accurate as possible. If an experiment is carefully conducted, the results usually either support or disprove the hypothesis. An experiment can never “prove” a hypothesis, it can only add support. However, one repeatable experiment that provides a counter example can disprove a theory or hypothesis. An experiment must also control the possible confounding factors any factors that would be the accuracy or repeatability of the experiment or the ability to interpret the results.
The results of an experiment can never uniquely identify the explanation. They can only split the range of available models into two groups, those that are consistent with the results and those that aren’t.

The basic framework for our e-experiment group was created in the form of a website where participants allowed to vote and become a part of the research.

The participants, although less aware about these type of researches but they perform a huge role in these type of researches. Participant’s complete and brief information was collected such as age, gender, country of residence etc. Next, participants were sent to a page of instructions and then finally, they were part of the research process.

**ii) E-Focus Group:** The main groups systematically offer a way to collect qualitative data on specific subjects. Each group including between 9 and 11 people. They also balanced to the groups in terms of sort, social state and ethnic property. And the main group is a form of qualitative investigations in which they ask a people group about his opinions, opinions, belief and attitudes towards a product, a service, a concept, an announcement, an idea or packing. Questions become in an interactive adjustment of the group where the participants are free to speak with other members of the group. Limited those situations where mounted.

Qualitative research concentrates on words and observations to express reality and attempts to describe people in natural situations. The key element here is the involvement of people where their disclosures are encouraged in a naturing
environment. It taps into human tendencies where attitudes and perceptions are developed through interaction with other people.

Interviews are an important part of any action research project as they provide the opportunity for the researcher to investigate further, to solve problems and to gather data which could not have been obtained in other ways. The group interview is essentially a qualitative data gathering technique that finds the interviewer/moderator directing the interaction and inquiry in a very structured or unstructured manner, depending on the interview's purpose suggests that the focused interview with a group of people “...will yield a more diversified array of responses and afford a more extended basis both for designing systematic research on the situation in hand”.

E- focus groups can be used at any point in a research programme.

1. Interpreting previously obtained qualitative results.
2. Generating impressions of products, programs, services, institutions, or other objects of interest.
3. Stimulating new ideas and creative concepts;
4. Diagnosing the potential for problems with a new programme, service or product.
5. Generating research hypotheses that can be submitted to further research and testing using more quantitative approaches.
6. Obtaining general background information about a topic of interest.
E- Focus groups interviews are essential in the evaluation process:
As part of a needs assessment, during a programme at the end of the programme or months after the completion of a programme to gather perceptions on the outcome of that programme.

The information collected from an E- Focus group discussion is raw data. The researchers' task is to prepare a statement regarding the collected data. The first step is to transcribe the entire interview. This will provide a complete record of the discussion and will facilitate analysis of the data. The next step is to analyses the content of the discussion. The aim of this analysis is to look for trends and patterns that reappear within either a single focus group or among Various E- Focus groups. It was suggested that content analysis begins with a comparison of the words used in the answer. Also, the researcher must consider the emphasis or intensity of the respondents’ comments. Other considerations relate to the consistency of comments and the specificity of responses in follow up probes.

iii) E-observation : As resulting from the interest raised in the atmosphere investigation that learns in line, a later increase of the interest is and the use of qualitative methods the deepest penetration in line to learn obtains atmospheres. A great amount of studies, qualitative, opinions, the experiences have been published and the education examines practice in atmospheres in line. Nevertheless, the suitable exploration of the use of qualitative methods of investigation in line of the atmosphere that learned has not continued being.
In particular, the discussion of the electronic “field” or electronic means as one of the major data collection method was generally omitted. As one of the key data collection methods, observation online or e-observation as we term it here, should be given more attention in order to understand the social meanings, which are constitutive of and reflected in human behavior in online environment. For some researchers, the current available text-based computer-mediated communication is not an appropriate method for research, which seeks to observe the “real” world.

In this study, web-based instruction referred to a course that was taught over 50% of its content via web. After sending out consent forms, ten instructors agreed to participate the study. These ten instructors taught 16 webct classes as five of the instructors taught more than one classes online. Webct instruction is the only on-line teaching software adopted by this institution at present. The webct classes included in this study were both at undergraduate and graduate levels in the College of Education.

Among the ten instructors, four were males and six were females, holding the rank of assistant, or associate professor. Included also were 216 students in the webct classes, whose classroom participation, discussion and assignment were “observed” and recorded.

The three major qualitative data collection methods, observation, interview and documentation was all adopted in the grounded theory study. E-observation as a key data collection method in this study played a vital role. We would
never have understood the phenomena without personally experiencing it. Observation is essential for a researcher to obtain detailed descriptive information about what the setting is, what has occurred in the setting, who are the participants and how people react to what has occurred. Because the focus of the study was to understand how classroom assessment was practiced in webct classrooms, it became crucial to get into the “field” to obtain the first-hand experience, views and actions of the instructors and learners in the online environment. The direct approach to accomplish the research goal was to “watch” what they “do” and “listen” to what they “say” in the field- webct classrooms. As a result, the E-observation data served as a baseline to understand what was going on the cyber “field”, followed by e-interview and documentation.

Two observers, the author and a doctoral student started the e-observation in Spring 2003, and continued for 9 months. Getting into the “field”, the two researchers wanted to capture how assessment as an instructional process was incorporated and operated in webct classrooms. Our E-observation foci entailed 1) general instructional procedures of the webct classrooms, 2) classroom interactions between learners and learners, between instructors and learners, 3) classroom assessment activities, 4) assessment oriented performance. The E-observation was recorded in forms of field notes, journals and memos for further analysis. Particular attention was given to observe the dynamics of classroom interactions where there was a cyclical process of content, input, procedures and product to inform and direct teaching and
learning. The two observers were present to conduct the E-observation independently for the same webct class or classes to control the reliability and accuracy. Discussions were held routinely between the two observers to exchange field notes, memos and key observation findings.

The discrepancy between the two observers was discussed and resolved by reobservation, reviewing the field notes, and by later comparison with documentation data and e-interview transcriptions. After the E-observation of webs classrooms was finished, data was sorted, categorized and compared. Ten instructors were interviewed via e-mail with both structured and open-ended questions. The purpose of online interview was to obtain the instructors’ reflections and experiences of their own teaching. Besides observation and interview data, other data resources, such as syllabi, class notes, individual projects, group projects, quizzes, tests and exams were documented, categorized, compared and analyzed along with the observation and interview data to develop themes and build a chain of evidence. The documentation started with the observation. As the observation moved along, data resources began to accumulate, diverge by topics, categories and themes. The different data resources were also merged and compared together as a way to triangulate the truthfulness of the research outcome.

As the study focused on understanding the process of implementing formative assessment in relation to the unique features of online instructional environment, it seemed appropriate to use qualitative research method. It was decided
to take a Straussian approach to grounded theory, in which a “process theory” was generated to explain an educational process of events, activities, actions and interactions that occurred over time. It was believed that the “process theory” discovered during data collection “fit” the situation being researched and will work when put into use. In retrospect of the study, E-observation played an important role in helping me as a researcher to understand the field webs classes and the instructors and learners. Some of the features were especially unique in contrast to the traditional f2f field observation. The aim of this paper is to discuss the potential of E-observation as a research tool, describing some of its characteristics, advantages and limitations. As e-observation shares many strengths and weakness of the f2f observation when compared with other research methods, it concentrate on the ways in which E-observation differs from the more familiar method of observation based on the nine-month observation experience happened in our own research field the 16 webs classrooms in a Midwestern university.

**Transforming the observation:** linguistic behavior When compared with the f2f e-interview, it was pointed out that time and pace were the two major displacements of human experience from e-interview.

In relation to time, he referred to the asynchronous interaction between Interviewer and interviewee, with pauses of varying lengths between bursts of “Episodes”. In terms of space, the relationship took place “at a distance” through the medium of electronic, screen-based text. E-observation shared the same
characteristics as e-interview except that without a concrete “setting” to locate, E-observation required even more displacement from the conventional f2f observation.

The observation of linguistic behavior via Internet has several consequences. The availability of large amount of texts and images depicting the actions, feelings and interactions of the participant in the online community furthered the deeper aims of qualitative research. First of all, depending on writing as the primary media for communication and interaction of the social cultural events in virtual community has made the collection of large amount of information relatively easier and more efficient.

In the nine months E-observation of the interactions of ten instructors with over 200 students in an online learning community, I was able to collect and analyze over 1,000 messages, 100 presentation images, 50 student projects. The time required for taking field notes, or collecting audio-visual materials in a f2f observation to obtain data of this magnitude would be almost impossible in such a short period of time. In a f2f observation, both descriptive and reflective field notes needed to be taken to capture the dynamics of an observed central phenomena. While conducting E-observation, there is no need to take descriptive field notes as text description already existed. This allowed me to completely concentrate on watching, instead of watching, while writing down what I saw. Secondly, the lived experience, insights, emotions were written by the participants themselves, instead of filtered through by the researcher, which happened in the conventional filed observations. Although researchers and participants were not
‘visually or auditor ally present’, researchers may also observe non-verbal and extra-linguistic behavior exhibited in ‘emotions’, ‘paralinguistic and non-linguistic cues. I noticed in my E-observation that expressive, such as multiple punctuations, color, capital letter, multiple vowels, color were used to represent intonations, gestures, surprises, exaggerations and other nonlinguistic cues in webs classes. The use of other expressive symbols other than words helped a person to deliver not only the semantic meaning of the message, but the gesture, intonation and emotions to the students In E-observation, such electronic paralanguage was a commonly used communication by both instructors and students. The following paragraph was an example of how paralanguage was used to transmit both semantic meaning and non-linguistic cues.

Ethno methodological approaches were broadly concerned with how people construct their own social situation. Online qualitative researchers with this approach can authenticity that is possible when f2f conversations are observed. First of all, the context of the actual experiences of individual participants was at their own keyboards in their rooms through a distance mediated by computers. There is a possibility that some of the initial thoughts, feeling, emotions and interactions get lost because the process of writing filters them through. The time taking to write a message expressing one self most often results in a more crafted response than a simultaneous reaction. Although other media devices, such as visual and audio techniques, paralinguistic and nonlinguistic cues are
introduced, the richness of body language, facial expressions, emotional nuances are hard to be depicted in writing. Even if these devices were available, people usually do not want to spend much time taking care of the “trivial” when they are engaged in. Some social aspects of human interaction in a conversation cannot be fully observed in a cyber community. As in f2f interaction, there is a dynamic dimension, such as people wait for their turns, or put up their hands to speak, even silence. In online conversation, these dynamic were mostly unobservable, and yet the social dimension is very important to give researcher clues in shaping the mood of interaction. This is big lost for E-observation as a data collection method to understand a social situation.

iv) E- Interviews: The E-interview is a digital, asynchronous version of the interviewing process, a specific form of conversation, which is foundational in qualitative research. Some researchers perceived the interview as “… a process of dyadic, relational communication, with a predetermined and serious purpose designed to interchange behavior and involving the asking and answering of questions”. In this limiting definition, the authors failed to acknowledge the possibility of more than two people being involved in the interview (dyadic), but they acknowledged the putative relational basis of the recorded dialogue. The interview has become more interactive, not a passive recording of the respondents’ answers to the questions put by the interviewer. It was, claimed that “Researchers are more committed to allowing the people involved to speak for themselves in their own way. The
interview, therefore, has become the shared task of collaboration”.

Interviewing allows a researcher to gain insights into cultural experiences that are often denied to outsiders. The information that respondents provide can range from observations to interpretations. “We can learn about what people perceived and how they interpreted those perceptions. We can learn how events affected their thoughts and feelings. We can learn the meanings to them of their relationships, their families, their work, and their selves.”

**Key Planning Steps for Online Interviews**

1. Select data collection method(s).
2. Select the type of the interview.
3. Determines is desired what data; line of vision, verbal, text, and how it will be handled and analyzed.
4. Decide if all or some steps will be in expensive line or to face.
5. Select the tools of the communications.
6. Determine and you treat ethical editions.
7. Develop to the confidence when using the tools of the communication.
8. Work with the interviewed people to prepare itself for the participation.

**Online Survey Research:** Internet-based survey research is a practical option for social science researchers to administer low-cost and convenient questionnaires to various populations. In order to effectively serve these populations, researchers must consider the
benefits, limitations, and implications for using this form of data collection.

A comprehensive review of online survey research was conducted, which included the strengths of online data collection and areas for consideration. Convenience, flexibility and ease of administration were identified as advantages of online survey collection, while low response rates and issues involving sampling bias and representativeness were reported as limitations. Implications for practical application of online surveys are noted.

Online survey research includes convenience in use, low administration cost, flexibility in survey design and the ability to obtain a large sample. Online survey research could be advantageous in terms of possible anonymity, as respondents who may be difficult to recruit in-person may feel safer disclosing their feelings or opinions from the comfort and privacy of their home environments.

i) E-mail Survey: The electronic mail and the Internet provide promise means to lead the future examinations as the proportion of accessible direct email of people or the Internet continues rising. Esteem that 45% of houses now have computers, and the proportion in the Internet is 22%.

Although these percentage are much too small to lead surveys on population in general by email, the access has reached almost 100% after some groups of interest of the examination, such as used of the company and members of the association. Until the moment, the use of the surveys on the email has been restricted by the tendency of investigators to only apply it to such populations with the almost universal
access of the email. The risk of the error of the not-cover has avoided that the investigators apply a methodology of the email to other groups. Nevertheless, a strategy of the email could be used more by far Diverse populations if it is gotten up in a mixed design of the way. The email can be used to examine to individuals with the access of the email, whereas more expensive methods can be used to examine those without the access.

The advantages of the email to examine are touching. It offers the possibility of examining very fast, a documented affluent quality surrounds beyond the investigation.

The surveys on the email can be done more quickly than surveys on the telephone, specially for the great samples, where the trained telephone number and interviewers limit the number of completions per day. The method is also cheap, since it eliminates franking, the impression and/or costs of the interviewer.

To make such advantages, is important that a methodology is developed that can assure acceptable levels the amount and the quality of the answer. It is evident that a so general protocol to reach discharge quality of the rates and the data of answer to the surveys on the email has still not been developed and has not been proven since has become for the surveys on mail.

The technology for the email is extremely different from methods that examine established of the mail, the yes same communication is similar to questionnaires self-administered given by the postal mail. Thus, the application of knowledge of
the investigation previous on mail SAQS to the email is a place logical to begin to develop a methodology of the email.

The results of an experimental test of mixed way three, the multiple procedures of the email of the contact are compared to one another one and a similar control group of the survey on mail within the same population. The elements of these procedures of the email were formulated in base of the proven methods to design and to put in execution self-administered or the surveys on mail. In addition, in an attempt to eliminate error of the cover, the procedure of the email is increased by a version of the mail for the individuals that are unattainable by email. The information limited on quality of the data also is disclosed.

**ii) Web Survey:** The examination was observed under the fabric-based form of questionnaire; the primary reason of this approach, in comparison with the reading and the information of academic publication compilation, was that we wished to free itself and to the common participants of the TWO and to put los’ its to the speech of scientific papers.

Tel the presents of the World Wide Web examines to investigators with without precedent tool for the collection of data. The costs in terms of hour and money to publish an examination in the fabric under are compared with associated costs a Methods that examine conventional. The stage of the entrance of data is eliminated for the administrator of the examination and software can make sure that the data collected of the participants are free of common errors of entrance. Importantly, the surveys on the fabric can reciprocally
provide with participants the regeneration modified for particular requirements. These characteristics come in a price to make sure that software appropriately written handles the process of the collection of data. Although they exist the potential for the data that lacks, the unacceptable answers, the duplicated submissions, and the abuse of the fabric, the measures can be taken when creating the software of the examination to reduce to the minimum the frequency and the refusal consequences of such incidents.

The World Wide Web presents survey researchers with an unprecedented opportunity to examine groups of people with questionnaires tailored to the investigation of both broad and narrow topic domains. The current paper outlines some of the benefits of conducting survey research on the web, and familiarizes the reader with hardware and software requirements for conducting such research. Problems to expect to encounter in carrying out such research, and resolutions to these problems are summarized. Finally, some tips are provided to assist survey administrators in successfully implementing web survey projects.

Benefits of publishing survey on the World Wide Web

There are many benefits to publishing your survey on the W W W. Perhaps the greatest benefit is access to a large population of individuals. Other benefits include savings in both time and money for survey researchers, and the ability to Present survey information in formats that were previously difficult to achieve.
Population Access

Large numbers of people now have access to the internet, and in particular, to the WWW. The number of individuals accessing the internet is growing exponentially. The internet spans most areas of the first world, and is quickly expanding into third world nations. This means that the population from which general surveys may sample is increasingly large.

Despite being geographically unrestricted, biases are known to exist in the population that frequently accesses the web.

Saves Time and Money

A second major benefit of using the WWW for survey research stems from savings of time and money. Web survey publication can eliminate the need for paper resources. Hence, one saves time and money associated with survey and feedback publishing costs, their associated distribution costs, and survey collection costs. Unlike other internet survey methods, time consuming data entry errors can be eliminated through automated data checking at the time of data collection and administrators have immediate access to data as it is received, allowing them to track the data collection process.

The cost of WWW survey administration is low compared to the time and money costs associated with traditional survey techniques. Internet access and survey software development costs for WWW surveys contrast with cost incurred through traditional surveying methods. Such traditional costs are associated with physical survey publication, survey distribution, respondent reminding, data collection, data entry, feedback publication and feedback distribution methods.
Dynamic/Interactive Surveys
Increase Respondent Motivation

WWW surveys can benefit both survey respondent and administrator through the use of dynamic or interactive forms. With such forms, feedback can be displayed that is specifically tailored to the content of the responses supplied by the user, thereby giving the respondent instant feedback. Depending upon the survey content, it may be desirable to give feedback about the respondent’s individual results, summary statistics about the results of all respondents to date, or to present the respondent with a separate, specialized set of questions. This dynamic presentation method presents the survey administrator with the ability to create interactive surveys that using conventional methods can be difficult to administer because they require special instructions and actions on the part of the respondent. Actions such as scoring responses, selectively presenting information based upon a set of responses, or selectively presenting survey questions, are all tasks that are perfectly suited to the WWW medium.

By using dynamic surveys, it is possible to make it such that the respondent is no longer merely giving of information, but also receives information in return for their efforts. Under circumstances where respondents are made aware that they will benefit information ally by participating, they are likely to exhibit increased motivation. If respondents know that the feedback they receive is about themselves, and based on the data that they provide, then they are likely to supply accurate and thoughtful responses.
6. Limitations of study

Then the technology has advantages, the limitations were also there. As the technology can be only used by limited number of people of a form the one that so always knows can only work of another way cannot be taken in use. With exception of this his its similar sensation of the clients uncertain whereas it gave the information in line and it was worried more about editions with his information, most of they of the isolation was the portion of other limitations also sensation that was better to the face done of the transactions to does something in front that in line using or option of the Internet.

Like most of crimes of cyber, the frauds of the Internet they were happened had to what clients they lost his faith towards the use of the Internet for his intention of the transaction and happy insurances feel and when the own ones make transactions his.

The greater part of the processes of the cost was not transparent to the clients also because client cannot trust the several facilities in line given them. Then the cost loaded by the companies was upper in the tariff because client demonstrates interest of keys towards these technologies.

Some technical limitations

- Costs of a technological one solution.
- Some protocols are not standardized around the world.
- Trustworthiness for insurance processes.
- Little width of band of the telecommunications.
- Integrating digitalis and sales not-digitalizes and information of the production.
- Have access to limitations of marked terminal of manual, cable, ISDN, without threads.

**Width of band:** The width of limited band that can be aid by the devices moving bodies at the moment are very small that do to revealers of the fabric to reduce the use of rich data.

**Size of screens:** The size of screen of a mobile device very is limited. This also it limits capacity of the vision of the user.

**Less long-range Processors:** Due to the revealer of slow process of the fabric of the speed it would have that to use the servant scripting lateral that will bring more load to servants.

**Cost of connection without Wire**

As connection without threads of a mobile device to the Internet still is relatively a new technology that the cost to use such connection is also so expensive that the technology still is in the heavy development.

### 7. PLAN OF STUDY

It is to study the concept about e-commerce as well as m-commerce and to understand it, and into consideration in various business processes and implement into the business and also in other processes.

This aware us about the various new technology which are coming into existence and the effort is given so that the concept can be clear about the various technology. And the usage of these technologies so that these can be implemented in various ways and for our betterment.