

Wireless Application Protocol:

- WAP is a technical standard for accessing information over a mobile wireless network.
- A WAP browser is a web browser for mobile devices such as mobile phones that uses the protocol.
- WAP is a specification for a set of communication protocols to standardize the way that wireless devices, such as cellular telephones and radio transceivers, can be used for Internet access, including e-mail, the World Wide Web, newsgroups, and instant messaging.

The WAP layers are:

- Wireless Application Environment (WAE)
- Wireless Session Layer (WSL)
- Wireless Transport Layer Security(WTLS)
- Wireless Transport Layer (WTP)

Web security:

- It is a branch of Information Security that deals specifically with security of websites, web applications and web services.
- At a high level, Web application security draws on the principles of application security but applies them specifically to Internet and Web systems. Typically web applications are developed using programming languages such as PHP, Java EE, Java, Python, Ruby, ASP.NET, C#, VB.NET or Classic ASP.

Handheld Devices and eCommerce

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

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

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

Mobile Commerce

Mobile e-commerce (m-commerce) is a term that describes online sales transactions that use wireless electronic devices such as hand-held computers, mobile phones or laptops. These wireless devices interact with computer networks that have the ability to conduct online merchandise purchases. Any type of cash exchange is referred to as an e-commerce transaction. Mobile e-commerce is just one of the many subsets of electronic commerce.

Mobile e-commerce may also be known as mobile commerce.

Why M-Commerce Concept is Became So Popular

The M-Commerce Concept is Became So Popular because of the reasons described below:

Affordability of mobile devices

It is no denying fact that mobile devices like cell phones and tablets are far more affordable than desktops and laptops, and an average consumer doesn't have much disposable income in his hand to buy high end devices. Plus, one doesn't even really need expensive smartphones to shop online or make mobile transactions.

Doing things on the go

Mobile devices give the freedom to do things like shopping, booking tickets, making hotel reservations etc. anytime anywhere. And in the world, there is a large young consumer base, who want fast instantaneous processes on the move. One doesn't need to wait to reach home or to a cyber cafe to pay bills or make an urgent purchase online.

Mobile Internet connectivity

M-Commerce customers are not bound by limited wired and Wi-Fi Internet connections. In the last 3-4 years, the number of users who access the Internet through a 3G connection has grown to round 22 Mn. Now compare this with the 15 Mn fixed line broadband connections accrued over the last 17 years, there is a notable difference.

Even though E-Commerce has spread its roots throughout the country, it still hasn't reached the places where people have no broadband or no computer. M-Commerce could and will change this.

Mobile Payments

Mobile Payments is a new mode of payment as an alternative to traditional methods like cash, cheque credit cards etc. A customer can use a mobile phone to transfer money or to pay for goods and services. A mobile payment could be made by an app, data connection, and even SMS, so anyone who has a bank account can make a transaction. This could aid in reducing cash-dependencies of people, particularly in rural areas.

Security

Mobile platforms are still relatively free from viruses and other threats. And even in case of a fraudulent activity, credit tracking by GSM/GPRS/GPS is easy and quick. Thus, increasing

the credibility, and giving better assurance to the sceptical users. Also, seldom do people part from their phones, so there are less chances of misuse of login information that may happen on computer systems.

Bridging the gap between E-Commerce and conventional stores

Brick and mortar stores are getting a lot of heat from online stores, which are luring their customers away by offering better product prices and discounts. When a person goes out for shopping, mobile acts as a conduit between the two poles, people compare prices online before buying something. This could be, and is being used by retailers to their benefit by offering location-based services, barcode scanning, and push notifications to improve the customer experience of shopping in physical stores.

Architectural Framework of E-Commerce

Architectural framework of e-commerce means the synthesizing of various existing resources like DBMS, data repository, computer languages, software agent-based transactions, monitors or communication protocols to facilitate the integration of data and software for better applications.

The architectural framework for e-commerce consists of six layers of functionality or services as follows:

1. Application services.
2. Brokerage services, data or transaction management.
3. Interface and support layers.
4. Secure messaging, security and electronic document interchange.
5. Middleware and structured document interchange, and
6. Network infrastructure and the basic communication services.

Infrastructure Requirement for E Commerce.

Application services

In the application layer services of e-commerce, it is decided that what type of e-commerce application is going to be implemented. There are three types of distinguished e-commerce applications i.e., consumer to business application, business to-business application and intra-organizational application.

Information Brokerage and Management Layer

This layer is rapidly becoming necessary in dealing with the voluminous amounts of information on the networks. This layer works as an intermediary who provides service

integration between customers and information providers, given some constraint such as low price, fast services or profit maximization for a client. For example, a person wants to go to USA from say, Kenya. The person checks the sites of various airlines for the low-price ticket with the best available service. For this he must know the URLs of all the sites. Secondly, to search the services and the best prices, he also has to feed the details of the journey again and again on different sites. If there is a site that can work as information broker and can arrange the ticket as per the need of the person, it will save the lot of time and efforts of the person. This is just one example of how information brokerages can add value.

Another aspect of the brokerage function is the support for data management and traditional transaction services. Brokerages may provide tools to accomplish more sophisticated, time-delayed updates or future-compensating transactions.

Interface and Support Services

The third layer of the architectural framework is interface layer. This layer provides interface for e-commerce applications. Interactive catalogs and directory support services are the examples of this layer.

Interactive catalogs are the customized interface to customer applications such as home shopping. Interactive catalogs are very similar to the paper-based catalog. The only difference between the interactive catalog and paper-based catalog is that the first one has the additional features such as use of graphics and video to make the advertising more attractive.

Directory services have the functions necessary for information search and access. The directories attempt to organize the enormous amount of information and transactions generated to facilitate e-commerce.

The main difference between the interactive catalogs and directory services is that the interactive catalogs deal with people while directory support services interact directly with software applications.

Secure Messaging Layer

In any business, electronic messaging is an important issue. The commonly used messaging systems like phone, fax and courier services have certain problems like in the case of phone if the phone line is dead or somehow the number is wrong, you are not able to deliver the urgent messages. In the case of courier service, if you want to deliver the messages instantly, it is not possible as it will take some time depending on the distance between the source and destination places. The solution for such type of problems is electronic messaging services like e-mail, enhanced fax and EDI.

The electronic messaging has changed the way the business operates. The major advantage of the electronic messaging is the ability to access the right information at the right time across diverse work groups.

The main constraints of the electronic messaging are security, privacy, and confidentiality through data encryption and authentication techniques.

Middleware services

The enormous growth of networks, client server technology and all other forms of communicating between/among unlike platforms is the reason for the invention of middleware services. The middleware services are used to integrate the diversified software programs and make them talk to one another.

Network Infrastructure

We know that the effective and efficient linkage between the customer and the supplier is a precondition for e-commerce. For this a network infrastructure is required. The early models for networked computers were the local and long-distance telephone companies. The telephone company lines were used for the connection among the computers. As soon as the computer connection was established, the data travelled along that single path. Telephone company switching equipment (both mechanical and computerized) selected specific telephone lines, or circuits, that were connected to create the single path between the caller and the receiver. This centrally-controlled, single-connection model is known as circuit switching.

Disadvantages of Electronic payment

Online Security

When we check out at a merchant and use our credit cards, we must present photo ID. However, when making online payments there is no real authentication process to verify that the person entering the information online is not a criminal. Without this verification process time becomes of the essence when it comes critical to dispute a fraudulent charge made using your credit/debit card because research is needed to prove your case.

Missed Errors

Can you imagine being in business since 1970, each time you needed to replenish inventory you contacted your supplier with whom you have a personal relationship to place your order. The supplier delivers your goods in a timely fashion. Upon delivery an invoice is provided and you either pay COD (cash on delivery) or mail in your payment. Now 21st Century technology is presented; you submit your order online which requires payment before delivery. Once the goods arrive you realize you mistakenly order the wrong material. Now you have you merchandise that cannot be used and you are out your money. More time is now needed to return the “unnecessary material” to wait for the replacement order to arrive. For many people the old way was more efficient.

Fees

Management courses have taught us that there is an opportunity cost for every choice we make. Surprisingly, OPS are no different. Since the core business of many organizations is not IT based and more specifically not specialized in Online Payment Systems an outside vendor is required to provide the online payment services. An Online Payment Systems vendor like PayPal requires the merchant to pay a convenience fee ranging between 2.2%-3.9%. Would it be beneficial to use their services as opposed to alternative payment methods? For corporate organizations this fee may prove to be inconsequential. However, for the small

business owner these fees could equate to astronomical figures eating away at the bottom line.

Typical E-Payment Types in E-Commerce

The modes of payment have surely changed in so many different ways. But it is important to take note that this change is on a positive note and not a negative one. In relation on how we get to make payments, the introduction of payment systems into the market has clearly made things a lot better. These systems are designed to make money transfer from one account to the other quick and easy as it can be done in a matter of seconds. The systems will come in two distinct features but for now we want to take a quick look at some of the different types of electronic payment systems. These are the kind of systems that will accept payments through electronic means.

Electronic cards

Electronic cards are designed to reflect your bank account. By having one, it means that you definitely do not need to visit your bank physically in order to access your account. Mostly cut out of hard plastic material to make them durable, the cards will have a magnet strip that allows the machines to be able to gain access to your bank account electronically. They will come in three major types. The debit card, the credit card and the prepaid card. All that the vender has to do is to swap your card across the payment system where a message will be sent to your bank and immediately reply with a confirmation message. All this is done in a matter of seconds.

Internet

This is a unique payment system that allows transactions to occur online. There are normally different sites through which you can be able to do this but the two most commonly practiced methods of online payments are direct transfers from one bank account to another or the use of cards.

Use of mobile phones

Mobile phones are turning out to be more than just a communication gadget. They are even referred to as smart phones due to the many additional features that they have. Although it will give you limited transactions to carry out, the best kinds of payment system available for mobile phones are mobile banks. There are a number of mobile subscriber firms that have developed the app that allows the mobile users to have an account that they can gain access to through their mobile phone number.

Online accounts

This kind of payment system is slowly on the rise. We can attribute this to the increase of online shopping. Having an online account with either PayPal money bookers and or any provider allows you to be able to transfer funds more quickly as there are no restrictions and limitations on what you can do with your electronic money. One can be able to access their online accounts through their phones and or computers. These accounts are so simple to use.

The ICDT Business Strategy Model

The ICDT model, developed by Albert Angehrn at INSEAD, is a systematic approach to the analysis and classification of business-related Internet strategies. It serves as a basis for identifying how existing goods and services can be extended and redesigned to take advantage of the Internet, as well as suggesting the characteristics of new goods and services made possible through this new medium.

Angehrn's model is based on four virtual spaces

1. Virtual Information Space

This space is where a firm displays information about their organization about their products or services. This space is the easiest space for the business to enter and it is a typically first step taken towards the virtual market space.

For example, E-commerce major concerns are

1. The information that it displays is accurate and current.
2. The information that it displays is only viewed by authorized users.
3. Customers can easily find the site and negotiate through it once they have reached the site.
4. The site accessible without long unit times.

Figure: ICDT Business Strategy Model

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2. Virtual Distribution Space

This space is used to deliver the product or services required or purchased by the consumer. For virtual delivery to occur, the products being delivered must be digital (software) or the service performed digitally (ex - online broker). Online news services and software companies have been quick to market and deliver their products electronically.

For e-Commerce major concerns are

1. Delivery of products and services to legitimate customers only.
2. Reliable delivery of product and services

3. Virtual Transaction Space

This space is used to initiate and execute the sales order which are nothing but transactions. Apart from those companies engage in virtual distribution space, most companies have been reluctant to enter this space. The major concern contributing to this reluctant is data security.

The major concerns of E-commerce are

1. Security over data.
2. Accuracy and integrity of processing data methods.
3. Privacy concerns by customers.

4. Virtual Communication Space

This space is used to enable relationships building, negotiations and exchange of ideas such as chat room, virtual communities, forums etc. E-commerce is affected if such a community is a service for which its members pay.

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