last time we were looking at business to business e commerce and looked at our familiar example which have been using all along namely there is a vendor who supplies items to a purchaser and the purchaser in the case of electronic commerce both the vendor and purchaser has their own intranets or local area networks and both are computerized and both are connected by a communication line

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normally public switch telephone network and and or sometimes private dedicated line or nowadays something called virtual private networks is coming which is on the internet so v pn’s are also another way of interconnecting to businesses

now the first purchase order is entered by the business which want to which wants to purchase items in its own pc and it is electronically dispatched to the vendor by email vendor acknowledges the order electronically

the whole point is that everything is on the electronic speed on communication lines and the vendor dispatches the goods physically by a truck or train or what what have you and then the when the business which the purchaser essentially compares the delivery note which came by along with the items physically against the order both because the original delivery note would would also would have come by electronic mail apart from the physical delivery note
so he would normally compare the electronic delivery notes so that comparison is very simple but during inspection the hand written one or typed one or would also be used because ultimately as i said inspection is to take place before acceptance

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and discrepancy note if any can be immediately sent to the vendor that is with the comparison of the delivery note with the purchase order can be compared electronically and immediately you can send reply or if there is any discrepancy to the vendor

and he can also immediately reply saying that may be i made a mistake or whatever or say some items are coming later on may be the next next consignment in a day or two whatever ok
(Refer slide time: 04:04) and as because both the businesses have their own LAN’s the purchaser of business one as we can call it can carry over all local transactions using its own intranet or local area network

and local transactions are inventory update by stores advice to accounts to pay for goods taken in to stock all those things which we had in the data flow diagram of the example though in the data flow diagram we actually showed the documents as documents flowing within the boxes in that case the circles which are in the processes

and the same thing is [mimic] [04:44] except that there is no physical paper movement there is only purely electronical electronic paper electronic message movement you might say or local electronic mail within the organization

so for instance as soon as the inspection accepts the items based on inspection the accepted items and details of that is electronically sent to the stores so stores can automatically update and as soon as they update their inventory they can send in turn note saying this much of stocks have been taken into inventory and now you can pay the vendor

and now the accounts department can in fact even pay but the vendor electronically by actually sending the money by electronic bank transfer to the bank account of the vendor

so these all becoming possible because banks are also connected to a network and there is also of course other payment methods like cheque payments electronic cheque payments and so on will cover later on in this in this set of lectures ok

so one simple way of course is if the bank account number is given and you access to the bank then you can sent to the bank a message saying that electronically you can transfer this this amount from my bank account to the bank account of the vendor ok these are all
can be done electronically that’s the advantage in fact the payment becomes very very fast and there is no postal delay and stuff like that

there is one a greatest advantage advantages of e commerce will will later on look at the advantages and disadvantages of e commerce compare to the current method not i would say

lot of business are now converting to e commerce and because of the convenience and because all la large businesses have already intranets which are working in their organizations

so business to business e commerce is one of the fastest growing segments of e commerce earlier on the segments which has growing very fast was the b to c commerce that also continues to grow with the more and more people buying pc’s and pc’s working from home

but b to b is something which is economically lot more important for businesses to improve their overall functioning and that is a reason why b to b e commerce is growing quite fast ok

because businesses already have fairly good computing infrastructure in their organizations

but there is some prerequisites for this business to business e commerce because we said that the purchaser sends his purchase order electronically and the vendor sends the delivery note electronically and the payment is also sent by the accounts and so on

so for all this to happen and for electronic comparison of purchase order against the delivery note

agreed on standards which you there in terms of the way in which the document will be formatted because its coming electronically you must know the format that in other words what is field represents so that you can actually do a proper job of reading that and interpreting it and comparing with a delivery note and all these are required

so the common formats which are required are primarily this exchange of data is called electronic data interchange for that you require a standard because if everybody follows his own technique then there will be lot of problems because the vendor is not dealing with only one business he is dealing with multiple businesses that is in other words whole lot of different purchasers are there
similarly a purchaser may not go to a single vendor he is going to different vendors depending up on which vendor supplies what and which vendor is competitive and so on

so for each vendor if he has to use a different format it will be quite quiet a what i would say un necessary work on the part of the purchaser to be able to send purchase orders in all kinds of different formats to different people

similarly the vendor also if he receives purchase orders from multiple purchasers all in different format he will have difficulty in interpreting them

so there is a requirement for electronic data interchange standard to exchange data electronically and and of course the another [10:10] each business must have a corporate intranet so that and then they should be connected by a pstn or leased line or a virtual private network

so transactions must be secure whatever transactions or all these purchase order the delivery note the particularly payments and so on which go through the public switch telephone network must be secure because public switch network telephone network by definition is publicly available to a lot of people in other words it is accessible by large number of different people

so when somebody when different people can access then they can also eavesdrop in other words they can kind of listen and to the the transactions that going going on between two people and that it could be very dangerous because your competitors can really undercut you and things like that
so there is a need for security and security concerned particularly in a public switch telephone network is used is extremely important in electronic commerce and that we later on we look at the great detail about the security issues in e commerce

and similarly whole and above security is required for documents also besides documents security becomes lot more important when you talk about payment methods payment methods because money is something which one has to protect i mean there is there is always temptation of stealing particularly if it is stealing from your home using a pc and the and the public switch telephone network so the internet and so on the temptation is there for stealing

and that is the reason why you should really make double doubly sure that any money transactions going on on the network what i mean by the money transactions or transactions such like such as credit card transactions debit card transactions cheque transactions and so on all these different means of transacting with with money has to be protected with great amount of care

so that is the way in which the b two b commerce happens ok whereas in b two c commerce is is slightly different because here the a business has several customers ok and but the business which is selling can kind of impose certain kinds of formats for for ordering because what they will do is a as as finded out here

the customer uses a browser and locates a vendor say [13:14] vendor using a browser that user use a browser and if you use you know the unique resource locator if you have the
url or the website address you can use the address directly if you don’t know then you can go to a search engine like Google and in search engine you can look you can say that i want to purchase say washing machine

if your customer buy trying to buy washing machine then it will kind of come come up with vendors who deal with this washing machine then you can sell it one of those vendors ok

how to once you get the vendors web page you can look at the listing of items available prices brands and things like that delivery time and guarantees what all are are required by you before you make a purchase decision they will all be available there

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and customer selects know you may look at multiple vendors because one vendor may not provide the kind of facilities he requires so he may look at the urls or websites of different vendors and decide among the vendors to which he really wants to go

once he decides of the vendor he selects an item and the order is placed in fact the vendor has got a format of ordering order order format is presented to you on your pc by the vendors website and you figure this order format and and the order format you give the what items you require may be the item code which is their in the vendors vendors web web thing and the number of items you want to buy all that you could actually enter in that and of course once you do this you need to have a provide a credit card details to be able to pay for whatever you are buying

so there are normally credit card payments you until the until the credit card number and say that you can debit my credit card you know you can kind of charge to my credit card
this amount or some places allows also debit cards where you can give debit card number and it will be debited to your account

but many people are little bit worried about revealing their credit card numbers or debit card numbers on the internet primarily because this difficulty of or the suspicion about the security and people hacking and finding out your credit card number and so on

so in spite of the fact that the lot of security methods they have been used to protect the data flowing on the public switch telephone network internet and so on still there is a suspicion primarily because often on you see a report in newspaper about some credit card numbers being stolen and used illegally to debit your account and then you get into big hassle with your credit card issuer to tell the person that you dint really buy it and you have to be able to prove that you dint buy it and all that

so you unnecessarily get into all kinds of hassle and also un unnecessary mental worries for a certain period of time

so many of the e commerce vendors today also provide means of cash and cash delivery that is he will send the items it will delivery ultimately items had to be delivered physically ok even if there are books the books have been delivered physically to you or if it is a washing machine somebody has to bring the washing machine put into your house

now we can make the payment by cash or cheque or what whatever with you it is to the person who delivers so at the delivery time the money transaction is take place

so money transaction do not take place on the on network but essentially physical payment of cash or credit card depending upon the amount of money inward it is like the vpp post of the post office where the post office delivers and when they deliver you pay to the post man the the amount of the vp plus the vpp charges

so many book sellers send books by vpp and also many many other items which can be send by post are actually bought by vpp

so its somewhat similar to that ok and in fact cases like customer buying a ticket from theater ticket or a ticket for concert and so on very often it is delivered and the money is collected from your from you for us they will get extra charge as for convenience you have of booking from your home ok
but many case people don’t rush this and particularly people were little cautious don’t wan don’t want to reveal their credit card numbers pRefer this cash and delivery and delivery model and of course if the credit card payment is is payment is through credit card the vendor has to check the credit card company where the customer has got the appropriate amount of credit in its account if there is a appropriate amount of credit in his account then that means then the credit card company will ok the transaction just like that the when you present a card in a shop he puts it he he actually swipes it through a little terminal he has and immediately it goes to the credit card company and then it gives an ok approved and when its approved then only he kind of prints a bill and takes a signature and the transaction is over

so before the transaction is over the vendor actually checks with the credit card company whether there is enough credit balance in the account of the purchaser and the vendor acknowledges customers order and gives details of delivery date mode of transport etc

if the payment is by credit card there of course electronically he will send a reply that that your order has been approved

now it is approved now i have to send you the items and you will send the items physically and you will say mode of dispatch expected time of arrival and things like that and normally the these vendor do not keep the items with them because if for instance denoted a a book shop virtual book shop like Amazon dot com these all books these all also music and so on like rediff dot com in India and also sites variety of items
now it is just physically impossible to keep all of them in their ready inventory because a huge inventory cost in other words we don’t know who is going to buy what and when so and also physical physically storing a huge inventory is expensive because you have to rent that premises and so on

so what they normally do is that they ask act as middle man in other words as soon as they get the order and they approved order they send a request distributor of the of the ite items who have who keeps the inventory to kind of dispatch the item directly to the purchaser ok

and of course if it is a very fast moving item for instance the particular book is extremely popular they may keep a few copies with them and then dispatched immediately

but if it is something which is not all that popular they would effectively go to distributor so it depends some models vary from one company to the other they will always find the optimal mix of what to keep in their inventory in their own place and what to kind of get from the distributor ok

but buy a large it’s a it’s a pure business decision on what what is to be done and credit card company of the customer as soon as the they approves the payment they will debit his account and credits the vendor account and the later on the end of the month the bill be sent to the customer for payment and the customer of course has to pay with the certain stipulated time ok

so that is the customer to b two c business to that is customer to business you might say or the there is a or a b to c whichever we doesn’t we matter

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normally it is one one [inaudible] and now it is the other is c two c c to c one of the most
common or popular examples all over the world is eBay because ebay is a an auction site
which is a customer to customer e commerce facilitating site in other words there are
internet site which allows two customers who are both are electronic presence on their
pc’s to interact through the middle man you might say ok and enables this transaction
takes place ok

and so its [21:31] call it a broker ok so customer wants to sell some item and he
advertises on sale and puts the many employees he expects on the on them and purchaser
looks at this web site and he may not be willing to pay that kind of an amount and so he
will give his own quote

suppose you normally in his cases it is some second hand stuff like for instance you want
to get you know if you want to sell a second hand car you might say i have got a second
hand car which is which is three years old my asking price is this much and the buyer
may may think that the price is too much that whatever he can afford he will offer ok so
then multiply buyers can also look at this offers and effectively if he wants it badly
enough he will increase the offer

so that ultimately the customer will accept this offer which comes and then the effectively
what the broker has done is bring together the buyer and the seller

and now of course many of these middle man also take care of transporting the item also
to some extent guarantying certain quality in other words in the sense that suppose you i
would have something which is not up to the mark then the intermedially [inaudible] very
take delivery to deliver to you and so these are and also the charges both sides [inaudible]
which have been offered collects fee from both seller and buyer of course money also
money transaction may take place in different modes primarily it is a it could be a cheque
payment or or cash payment ok

because credit card payments putting customers is somewhat more complicated ok so or
unless you pay to the [25:45] in turns pays to you but that is a little complicated so the
customer the big advantage of customer two customer e commerce is that and seller you
have potentially if you are going to sell a car or something like that an India wide
customer base i theory of course in practice of course normally selling a car the person
will be not in the same town but if you sale some other items which are easy to transport
may be it’s a it’s a it’s a large for instance one one thing they people sell are old stamps
old stamps which are sold they can be mailed anywhere in the world ok

so in fact your customer can be anywhere in the world who has only got a internet
presence so the whole point is that depending upon the item the customer the the
population [inaudible] you are access to is in the virtually in many large because you
have now virtual presence in the on the net
in fact this customer two customer e-commerce when it started people did not think it will progress very fast but now it will become fairly established business and eBay as an example is a very successful business and that business module has been of course mimic by other people but being first in the game they have really continuously improve there services and so they also have a world wide presence today they had a there is a Indian site which has sees [27:33] and ebay has now come to India and they also have presence in china and all over the world ok

so this is again is a question of you know regardless of where you are located whether you are American company or an Indian company or Chinese company it depends upon how quickly or how who is the first first mover who is the first person who thought about it so in that first person there is a lot of advantage and this and this case eBay is first mover and it personally got the advantage and of course continuously the they the side improve their services otherwise somebody else can easily get into the same same space and beat you ok so one has to be always careful about the first and more over advantage is there but still you cannot be essentially based on you know you cant survive on that you got to continuously improve your services and understand the customers problems and so on

so the advantages of e-commerce are buying and selling a variety of goods and services from ones home or business convenience is you don’t have to kind of do a lot of traveling and nowadays particularly with the all the traffic jams and so on so forth it is much easier to kind of shop from your house without having to go out anywhere

anywhere anytime transaction in other words your presence can be anywhere and normally most of the sites are opened twenty four by seven ok because after all they are computer servers which are maintained twenty four hours a day seven days a week they never never switched off so your virtual shop might says open twenty four hours a day seven days a week unlike a physical shop which has got some restricted hours ok
and can look for the lowest cost the specified good or service because you can look at multiple people who serve these things and compare and find out the lowest cost and the businesses can reach out to a world wide set of clients and establish business partnerships in other words now if you want to buy a book from India some books in fact Amazon dot com like a book seller has a huge inventory of books and sale and you also has added a lot of phrase in in terms of reviews in terms of extract and things like that to make it easy for you to take a purchase decision

so how this is made it possible to essentially have a world wide set of clients in fact amazons client there are plenty of clients in India also which which who order from Amazon because they are not available in many of the Indian book stores and of course you will have to pay for the the cost plus the shipping and things like that it could be a rare book and stuff stuff like that

so in theory the businesses can be reach out to world wide client base and establish business partnerships across oceans

order processing causes reduces because everything as i said flows electronically so there is no need to enter re enter anything and everything is compared electronically so total cost of processing orders becomes lower
electronics fund transfer is faster there is because of fact that you can essentially do a
direct transfer of money from one bank account to another bank account electronically
this transfer becomes very fast provided of course you ensure security

now the another interesting thing is so called supply chain management is simpler and
faster and cheaper what is supply chain management you know what what the point is
suppose i am a truck manufacture i need to buy a number of items from mul multiple
suppliers to be able to make this truck i buy my tires from somebody i will buy by
steering wheel with somebody else i will buy the horn from the third party i will buy my
gears from the fourth party and engine block may be supplied by another another
company

so there are multiple suppliers of the items and not to make the truck you have to
synchronize all the supplies and if you have a certain production schedule of say making
hundred trucks in in one day so all the items which are required to make this hundred
trucks in that particular day has to be available and is got to be managed and of course by
order too much then my inventory build up and then the cost goes up

so the supply chain management means i have to be able to schedule my supply my
requirements appropriately to multiple suppliers and manage the chain from this supplier
to me that too multiple chains multiple suppliers who have multiple chains

because one supplier may be in suppose i truck a truck manufacture if it is taking place in
pune one supplier may be in Chennai another supplier may be in Bombay third supplier
may be in Bangalore and so there are different suppliers and each one is got a different travel time

because these are all physical items they got to travel by truck or train or what have you and so the appropriate timing has also i get to be done because ultimately at the truck shop all of them have to synchronize and come together to be able to truck and without you have to increase your inventory size too much

so that management is makes it easier electronically because if you have a regular supplier you could even kind of give him access to a production schedule and say that i will require this much this much this much on these different days

so he can also actually schedule his production to meet your requirements of supplies in another words you can also supply gradually as per your requirements and appropriately produce as per your requirement

because to ultimately produce he requires raw materials he also does not want to carry it to the raw materials so he can very carefully kind of monitor the the way in which supplies are going to go to the ultimate user and also in turn go to the suppliers and ask him to kind of do a an appropriate dispatch of items to him

so a supply chain means the fact is a one there is a truck manufacturer there is a component manufacturer and the component manufacturer him selves will need the the raw materials or materials from different different vendors like he may have to buy screws and nuts from somebody he may have to buy some electrical coils from somebody else and so on

so in other words he himself has got a supply chain so ultimately supplier suppliers set of suppliers so ultimately there are group of suppliers in all of them have kind synchronize these what is called ch supplier chain chain management

so this becomes simpler because everybody is connected electronically so each one can correspond very fast electronically and schedule schedule it very very effectively to kind of not waste too much of resources

so in the long run the total resource saving for everybody improves that means total that that in fact in effect reflects itself in the profitability of all these companies and of course there profit profitability if they can improve they can also reduce their prices appropriately to kind of have a recent type profit

so this kind of a possible thing really helps a customer ultimately with and also at the same time all the helps all the users all the suppliers and so on because they can do an optimization and optimization becomes fairly in other words overall cost of production goes down and ultimately it helps a economy of the country ok or the growth of the of the country’s economy
so this what is one of the most interesting and important things which occurs in e-commerce

and purchaser can vendor from can order from several vendors and monitors supplies in other words if i want to put all your eggs in a one basket in a sense that suppose you want to buy tires you may not buy all the all your tire from one company because the suppose if something happens to that company either it goes on strike or or may be that that role it is blocked because of rains or whatever it is then you may really have three or four possible tire suppliers and you can appropriately change the order from one supplier to the other

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so you can have several vendors and dynamically alter your requirements and so on and based on the capability as well as the quality and the promptness and so on of different vendors

and production schedule and inventory of an organization can be inspected by cooperating suppliers who can in turn schedule their work this is what i said already ok

so this is these are all the advantages there are also disadvantages i mean nothing in the world comes with all advantages only there always some disadvantages and electronic data interchange using the standard EDI is expensive for small businesses
because there is a very complex set of documents which can be defined for the electronic data interchange and of course that is undergoing a little bit of change to enable the smaller businesses to get in through using the XML we talked about xml in in an earlier module and XML along with the document definition language allows you to kind of DTD along with the XML and XML is a reasonable substitute for a standard EDI ok

and people are trying to go towards that that kind of a method but where again the same problem arises each person uses own XML format that is going to some difficulty in terms of processing but of course this is not as as bad as one where you end up with entirely different formats and not knowing what format is being used and so on

but still the point is it is standard formats defined by standardized organizations are somewhat complex security is always a problem in electronic commerce and of course are come up with a lot of security methods i talked about i will talk about later on but still there is always a fear of viruses the age good virus is taking software new viruses come and every other day being you see in newspapers a new virus which is which comes and kind of wipes out your data or essentially creates a lot of nuisance for you

and hackers who kind of attack your system in other words they get into your system breaking all security and steal data or corrupt data and things like that

and also we talked about the de de denial of service attacks where if you really want to deny deny a particular company access to their website then they can flood that website or all kinds of [40:43] queries so that legitimate buyers cannot access that website because its always engaged and its like keeping your phone engaged by by useless calls
ok and they can all parallelize your e commerce so these are all real threats for us to be concerned about

(Refer slide time: 41:39) privacy in e e transaction is not guaranteed in other words again because it is a public switch telephone network somebody can kind of get into the network and steal data which is not in a in a is never been business to get but they they will try to get it ok the privacy is not guaranteed particularly in personnel information as well as the issues of of exchanging data about you know the what what you want to sell what you want to buy and stuff like that

is suppose you are advertising lot of jewellery on the net and it’s a it’s a open invitation for thieves to come and do something unless you keep your jewellery carefully so in other words the privacy is not ensured

e commerce de personalizes shopping in other words shopping see electronically is nice but you don’t really can touch and feel a feel in other words suppose you want to but some textile items say silk saree ladies go there kind of look at all the silk sarees feel that and see how how it looks and so on and that kind of a feel touch touching and feeling and handling is not not easy and also bargain hunting and window shopping and people go to shopping malls not just to buy items but it is sometime we meet friends [42:38] and you actually spend a little time in some people enjoy shopping ok that kind of a what i would say personnel shopping is now available in e commerce depersonalizes and makes it completely it insulates you from from the the rest of the population you might say you don’t meet meet anybody you only meet electronically the the shop

so but buy an large there are certain places where the de personalization is not relevant like if you are buying a train ticket there is no question of touching and feeling
similarly airline ticket and so on or even books and books of course you would like to browse by many of the book sites allow you browsing gives you extracts and stuff like that so it is but buy and large there are certain which are amenable to e commerce particularly b to c e commerce and certain items which are not amenable to that i think typically saree may not be amenable to b to c whereas a train ticket is definitely amenable to b to c ok

and now we will get into the actual technical issues about e commerce and then you discuss any area in computer science what you try to do is to look at different aspects or see when you saw talk about architecture you say that architecture of like i have been talking about a building architecture consists about the ease of use the various items which is go into making it and there are number of things like bricks and motor and the kind of paint and the then the actual design and so on

so there are different types of things which has to be done by an architect and so you have to look at some an approach of discussing of the the architecture in different layers the layer layering will be in such way that each layer can be designed independently and each layer is self contained there is a interaction between layers but minimal interaction ok

so the layers are picked in that such a way that each layer can be discussed and concerns about that explain explained somewhat independently of the other layers and normally you look at multiple layers starting from bottom layer to the top layer and the layers the bottom layer is the minimum infrastructure and the higher layers each layer uses all the services provided by the bottom layers it is like the bottom layer is a foundation and then all the others are built one over the other till the last last top most layer which may be in this case in the case of house it is a person who is going to live in the house and his convenience and so on

in the case of e commerce the applications of the top most so i am not look at e commerce architecture as a layered architecture with many different layers each layer is being self contained and each layer will discuss separately and of course we will talk about the interaction between layers

so the bottom most layer is the physical layer that is the the LAN public switch telephone network bridges routers and so on and of course these are not really concerns of e commerce see you have a courses on computer networks computer architecture and so on which will talk about this the the LAN’s and the WAN’s and the routers bridges all those things ok networks interface units and what not ok

so we are not going to talk about it but we expect we assume that there exist a physical network on which you are got to build because already the physical network exists you cant be anything further so the that is the bottom most layer which is the most important layer ok which enables all the other things to happen ok
so it is partly the physical layer is only the you might say in this in the case of LAN’s bridges and so on they are the Ethernet the the copper wires the the you know the connectors the public switch telephone networks which consists of again fiber optic cables may be sometimes even wireless and so on so these are electronic boxes and lines and stuff like that ok and this physical network is over that becomes a logical network that is if you use a TCP/IP protocol on a LAN then it becomes the intranet in that multiple LAN’s are interconnected it becomes an internet if LAN’s of businesses or cooperating businesses are interconnected it becomes an extranet but all of them use the so called TCP/IP protocol

so they are all uniform using of a uniform standard and that is why it is called a logical network the physical network is a base on which the logical network is formed and we will be we concerned about the logical network in other words we are not actually even the design of logical network is not our concern and that is again talked about in a computer networks course of what is a TCP/IP protocol what is Ethernet and and things like that and and all the internet facilities of course to the extent necessary we are talked about the internet in the earlier module so that you understand what the entire internet means

over the internet there was a world wide web which is again an application and that is got its own set services like hyper text transfer protocol and we talked about html hyper text markup language xml extended markup language object linking and stuff like that and software agents which are essentially small AI programs ok

so they are all services available on the world wide web and over that see once you have a world wide web and communication enabled and there are standards of communication say world wide web essentially you have browsers search engines all those things essentially all in the world wide web and the world wide webs are i have put all of them see but you know that when you go to the web you can use a you need to have a browser you need to have a search engine and so on

so all of them really are part of the world wide web services and the as i said there is always the security concerned about the transactions on the web because the transaction in the web takes place normally on the internet internet is accessible to everybody

so there is a layer called secure messaging encryption so called firewalls to prevent hackers to come in and sometimes to also various protection software to protect your virus protect you to from viruses

so there is a virus protection firewalls encryption and electronic data interchange formats which effectively provide you you might in fact EDI could could also a something which is because these are all sent as messages i i put them in the messaging layer because you need to be able to encrypt the EDI also before you send it to protecting your privacy and what not ok
and some of the EDI may be money transactions so that also again requires protection
then middle man services the middle man services for for instance there is which users all
these things and which enables say the commerce

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like for instance the middle man in the ebay as the middle man service to enable customer
two customer e commerce there are hosting services suppose the company does not want
to have website maintained in their in their concern they may have a server maintain by
the twenty four seven twenty four by seven the hosting service which host your web site
and which also has facilities to kind of protect your web site from from de denial of
service attacks and stuff like that and value added networks there is something were
essentially provides you some privacy and also provides you EDI and stuff like that

payment services that is how do you pay a cheque how do you pay a cash how do you
there is something called a paypal which people use which in which effectively allows
payment its again a software which works on the internet or in fact as a as a middle man
service which uses the security and what what not

and digital signatures you know when you make an order send a purchase order you have
to sign it normally physical purchase order you have physical signature equivalently in
electronic order you must have a electronic signature so signatures and somebody has to
certify that you are a legal your signature is legal that is really by by a particular person in
that your web presence is also not a fictitious web presence

because on the web nobody kind of sees you you may not have in fact legal presence and
still may have web address so somebody who certifies that you are a legal entity and that
you can be kind of held to you know can be held responsible in a court of law and so on is require

so that is where they called something called certification so certification organization is there to certify your your presence on the web and also certify things like your later on we will see there is something called your public you know you know for you got a codes public codes and private codes and so on so there are encryption codes so these these things are got be also certified ok

so the that is the middle man services and of course over that is the application layer we talked about the b two b b to c c two c and many more application layers are growing like g c to g ok g two g and what not with governments suppose you want to transact business ok

so there are the application layer we talked about some details but of course you have to come back to application layer so what will do now in the rest of the lectures is to kind of effectively look at each of these layers i don’t wont worry about the bottom two layers and in fact third layer also i talked about already third layer about xml and ole and you know i am not really talked about ole but http html and so on i talked about and also i talked about search engines in earlier part

but any how its not part of this real course in fact there are whole courses on internet technologies and so on where you will have great great length you will talk about logical networks world wide web and world wide web services and so on ok

so as in my concentration will be on secure messaging because security is very important as i pointed out and on middle man services ok and of course the top most layer which i talked about already ok

so we will concentrate on the top three layers in the rest of this because they are very peculiar to e commerce the others are effectively used for all other purposes also other than e commerce so the anyhow they are covered in many other courses in the curriculum

now we start with electronic data interchange because there is one of the things which which essentially is part of the secure messaging layer

so electronic data interchange is concerned with computer readable forms for business documents such as invoices purchase orders delivery notes needed in b two b e commerce so that e documents can be exchanged as said in c two c and c to b it is not that all important
because the in the case of b to c the business provides you the the form in which you fill it up you don’t have a freedom ok

similarly in c to c the middle man will give you some format to fill up you don’t have any freedom ok whereas b two b both the b’s are freedom so you kind of have most of some common understanding or common common standard essentially to eliminate manual data entry which is always error prone agree on common formats
this EDI standards gives specification that commonly used standard business forms the EDI standards are come in fact even back in nineteen seventies or even early late sixties early seventies the big businesses its all a transacting business in that day those days internet was not there but still businesses was transacted electronically in the sense that the purchase order will be send by a tape in where the big purchaser and so the electronic data interchange took place through tapes and physically the tapes are being exchanged and so on

so the formats its all be standardized point early in the in the history of computers and there are two standard which are available which which have been standardized by international agreements ok i will talk a little bit about what these two standards are without go into great details about a standards because that itself is a huge chapter and i am i don’t have time to do or really be justice to all of it

so i am only look at the some aspects of it its possible to adopt these standards to a documents which are in xml form so that XML is somewhat easier to use so by by organizations ok

and there are two standards one is called the ANSI X point twelve standard standard by standard is by American national standards institute and something called EDIFACT electronic data interchange for administration commerce and trade standard standardize by united nations commission for Europe for international trade
the first one is used by Americans second one is used by Europeans and we also use a European standard EDIFACT is used for government transactions particularly customs department and so on uses this cooperating businesses will agree on EDI standard and programs are needed to translate the data received in EDI format to a form needed by the application program that is effectively what one has to do
and we will talk about the transactions in b to b e-commerce by what are the EDI transactions next time and we talk about the VAN some extent we will talk about vpn in the next lecture

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so i will start at this point the next lecture and get into some some aspects of EDI transactions in b two b e commerce so i will stop here and continue next time