LESSON 3:
GENERIC FRAMEWORK OF E-COMMERCE

Topics:

- Introduction
- Integration of various infrastructure components in framework
- Summary
- Exercise

Objectives

After this lecture the students will be able to:

- Understand the integration of various infrastructure components in our framework

In this lecture we will discuss the various resources required to build an infrastructure to support E-commerce applications.

Electronic Commerce Framework

From the business activity already taking place, it is clear that ecommerce applications will be built on the existing technology infrastructure—a myriad of computers, communications networks, and communication software forming the nascent Information Superhighway. Figure 3.1 shows a variety of possible e-commerce applications, including both inter-organizational and consumer-oriented examples. None of these uses would be possible without each of the building blocks in the infrastructure:

- Common business services, for facilitating the buying and selling process
- Messaging and information distribution, as a means of sending and retrieving information
- Multimedia content and network publishing, for creating a product and a means to communicate about it
- The Information Superhighway—the very foundation for providing the highway system along which all e-commerce must travel the two pillars supporting all e-commerce applications and infrastructure are just as indispensable.
- Public policy, to govern such issues as universal access, privacy, and information pricing
- Technical standards, to dictate the nature of information publishing, user interfaces, and transport in the interest of compatibility across the entire network

Fig 3.1 Generic Framework of E-Commerce

To better understand the integration of the various infrastructure components in our framework, let us use the analogy of a traditional transportation business. Any successful e-commerce application will require the I-way infrastructure in the same way that regular commerce needs the interstate highway network to carry goods from point to point. You must travel across this highway, whether you are an organization purchasing supplies or a consumer ordering a movie on demand. Understand, however, that the I-way is not one monolithic data highway designed according to long-standing, well defined rules and regulations based on well-known needs. Rather, still under construction, the I-way will be a mesh of interconnected data highways of many forms: telephone wires, cable TV wires, radio-based wireless-cellular and satellite. Far from complete, the I-way is quickly acquiring new on-ramps and even small highway systems. The numerous constructors are either in competition with or in alliance with one another, all in an effort to convince traffic to use their on-ramps or sections of the highway because, like toll ways, revenues in e-commerce are based on vehicular traffic, in our case, vehicles transporting information or multimedia content. The myriad transactions among businesses means that the ultimate winner must select the technology for the I-way that best matches future business needs by using today's tools. Building an access road to a ghost town or
a highway too narrow to handle the traffic will yield equally little return on investment for those who have been less successful at matching needs with the infrastructure. Building the various highways is not enough. Transport vehicles are need-ed, routing issues must be addressed, and of course the transportation costs must be paid. On the I-way, the nature of vehicular traffic is extremely important. The information and multimedia content determines what type of vehicle is needed. A breakdown of potential everyday e-commerce vehicles into their technological components shows that they vary widely in complexity and may even need to travel different routes on the I-way, much the way an eighteen-wheeler may be restricted from traveling roads that cannot accommodate it:

Movies = video + audio
Digital games = music + video + software
Electronic books = text + data + graphics + music + photographs + video.

Once these vehicles (multimedia content) are created, where are they housed? What sort of distribution warehouses is needed to store and de-liver their multimedia cargo? In the electronic “highway system” multimedia content is stored in the form of electronic documents. These documents are often digitized, compressed, and stored in computerized libraries or multimedia storage warehouses called servers that are linked by transport networks to each other and to the software/hardware clients that allow customers to access them. Exactly how do the vehicles move from one distribution warehouse to another? In a traditional transportation business, diesel engines or gasoline powered motors move the trucks along the roadways. On the I-way, messaging software fulfills this role, in any number of forms: e-mail, EDI, or point-to-point file transfers. In adulation to the development of new vehicles and systems, other key components of commercial transactions need to be examined. How can businesses assure customers of safe delivery? How can customers pay for using the I-way? The Common Business Services block of Fig. 3.1 addresses these supporting issues. Encryption and authentication methods have been developed to ensure security of the contents while traveling the I-way and at their destination, and numerous electronic payment schemes are being developed to handle highly complex transactions with high reliability. These logistical issues are difficult to address in long-established transportation systems. That complexity is compounded in the nascent world of electronic commerce by the unique interplay among government, academia, and private commercial endeavors as well as by the challenge of integrating otherwise incompatible transportation systems while maintaining an uninterrupted flow of traffic. And whereas traditional businesses are governed by the Commercial Code and detailed case histories, very basic policy and legal questions are materializing in relation to e-commerce.

In the case of vehicular traffic over the interstate highway system, public policy issues concern pollution, consumer protection from fraud, environmental impact, and taxation. Similarly, in information traffic, public policy issues deal with the cost of accessing information, regulation to protect consumers from fraud and to protect their right to privacy, and the policing of global information traffic to detect information pirating or pornography. Again the issues themselves, let alone the solutions, are just now evolving and will become increasingly important as more and more people with variable intent enter the electronic marketplace. The final pillar on which the e-commerce framework rests is technical standings, without which the impact of this revolution would be minimized. For instance, returning to our analogy with traditional transportation systems, railroads would not have flourished had each state established a separate track standard (meter gauge versus broad gauge, for example) and goods would have to be constantly moved from one train to another every time the standard changed, as they do today at the border between Russia and Western Europe.

Standards are crucial in the world of global e-commerce, to ensure not only seamless and harmonious integration across the transportation network but access of information on any type of device the consumer chooses -laser disc, PCs, portable hand-held devices or television + set-top boxes (cable converter boxes)-and on all types of operating systems. For example, with-out the adoption of video standards, video conferencing will never become widespread, as each manufacturer will attempt to develop equipment that maximizes their short-term profits rather than working toward customer goals such as interoperability. While we have strived to limit our initial discussion of the elements of a framework for electronic commerce to an understanding of what part they play within this complex network, it is no accident that we have ended with a convergence of technical, policy, and business concerns. The concept of “convergence” is essential to the operation of the Information Superhighway and to the way the business world is gearing up to deal with it. It is only fit-ting that we preface our discussion of the one element of our framework we have not yet discussed in detail-e-commerce applications themselves with a clarification of the concept of convergence.

Summary:
- The building blocks in the infrastructure of E Commerce are Common business services, Messaging and information distribution, Multimedia content and network publishing and the Information Superhighway
- The two pillars supporting all e-commerce-applications and infrastructure-which are just as indispensable are Public policy and Technical standards.

Exercise:
1. Discuss the various requirements to built the framework of E-commerce.
Question 1: What is eCommerce?

Answer:
Basically, doing business-as-usual, but across the Internet. You advertise your products or services on your Web site, as you would in any other media like newspapers, TV or brochures. Advertising on your Web site can be done in two ways. The first is by use of a relatively simple Web site consisting of a few pages whereby you tell potential customers who you are, what you do, where you are and how they can contact you (easiest done by giving them your email address).

The second way of enabling world-wide customers to buy from you is to provide them with an Online Catalogue of your products which they can browse at their leisure without having to go to your place of business.

Question 2: What is an online catalogue?

Answer:
A catalogue that people access via the Internet. But it is also a lot more than that. It enables you to increase your marketplace to a global scale... without proportionately increasing your overheads. Your Online Catalogue is an integral part of your website, enabling your customers to:

- Browse through your stock list, read about an item or service;
- Look at photographs of the products;
- Select which items they want to purchase;
- And drop them into a shopping cart as they go along;
- When they have completed their shopping, they go to the Check-Out.

The next step is to request the order by filling in their details and method of payment on a form which is waiting for them at the Check-Out. The form is already partially completed with a breakdown of the items in their shopping cart, prices inclusive of tax, and shipping & handling charges, if any. If they choose to pay by credit card, the form includes a place for them to fill in their credit card number. And then, with one press of a button, they send the order to you. It’s as simple as that.

Question 3: Why would I want to use an online catalogue?

Answer:
To boost your sales! There is no simpler way to enable more people - from all over the world - to buy your products or services. With the new Millennium here and all fears of the dreaded Millennium Bug now allayed, everyone is rushing to exploit the vast new frontiers of the Internet. It is a proven lucrative means of conducting business. If you don’t have your business on the Net, you are giving your competitors a wonderful gift - an big advantage over you!

Question 4: How will customers access and use your catalogue?

Answer:
Very easily - by entering your Web address in their Browser. All they have to do is type your Web address into their Browser (www.YourName.com) and they will be taken straight to your Web site. If your Web site is well designed (read about our website design service) then your customers will be able to access your Online Catalogue with the click of a button and place their orders quickly and easily.

Question 5: How do you receive the orders - and what do you do with them?

Answer:
You download them from the Internet and then process them the same as you would any other orders. As soon as a customer places an order via your Online Catalogue, it is stored in an orders file at your Web Site until you download and process it. (Alternatively, it can be forwarded directly to your email address.) On downloading, it is stored in a local file on your computer designated for ‘Outstanding Orders’. How you deal with it once you have it is up to you, but generally people print it out and hand it to the member of staff who deals with filling out orders. Once the order has been sent to the customer, you merely mark it as ‘Shipped’ in your Outstanding Orders file.

Question 6: How will you get paid?

Answer:
Much the same as you do normally. Customers will have an option to submit their credit card number (securely!), in which case you process the order the same as you would normally, or follow it up with a cheque. Again, you would wait for cheque clearance as per your normal practice. Alternatively, you may choose to open an account for them. So as you can see, there is very little difference in the actual sales process between your customary way of working and selling online.

Question 7: What about shipping & handling?

Answer:
Your shipping charges (if any) are stated clearly in your online catalogue and automatically added to the invoice for customers to view and agree to before they submit their order.

Question 8: What are the benefits of E-Commerce?

Answer:
The benefits below are some of the more obvious ones:

- A world-wide market instantly
- No added sales staff
- A catalogue which is quickly and easily updateable. This means that when prices or stocks are changed, you don’t
have to have hundreds or thousands of obsolete catalogues lying around. You don’t have to wait for the printer to deliver the catalogue before the new prices can come into effect.

- The facility to advertise daily, weekly or monthly ‘specials’ and sales, or any special discounts - and they can be changed within minutes, when and if necessary.

- You can also add a marketing message which highlights your strengths, such as the range and quality of your products or services - or anything else you want to tell your customers.

Notes