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Consumer-Oriented E-commerce

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Consumer-oriented e-commerce or e-retailing involves selling directly to consumers who are the end users on the internet. It frequently involves a temporary relationship. The buyers visit the selling site either casually or very infrequently, perhaps only once. It has a relatively low volume of transactions and involves relatively small payments. In marked contrast, business-oriented (B2B) e-commerce involves transactions between two business organizations. These transactions may frequently be specified within a formal contract. It usually involves much more documentation and record-keeping, which is necessary for a business. The volume of transactions in B2B e-commerce is likely to be high and certainly much higher than in customer-oriented

transactions. The amounts of payments involved are also quite large. As the transaction volumes and the payment levels are high, the buyer normally has much more buying leverage in B2B e-commerce.

The objectives of the chapter include a description of the differences between traditional retailing and e-retailing. We describe some of the features and concepts of traditional retailing and show how these map to some new concepts in retailing on the internet. Next, we describe the benefits and disadvantages associated with e-retailing. We look at different models for e-retailing and describe some of the features of e-retailing, which give it a unique character. We also describe the impact of e-commerce on retailing in general. Lastly, we look at the technical issues related to creating an e-retailing site.

11.1 INTRODUCTION

E-retailing essentially consists of the sale of goods and services. Sometimes we refer to this as the sale of tangible and intangible goods, as shown in Figure 11.1. We can divide tangible goods into two categories: physical goods and digital goods. Examples of physical goods would be a book, a television set, a video recorder, a washing machine, etc. Examples of digital goods are software and music, which may be downloaded from the internet. The sale of intangible goods is sometimes called e-servicing. Examples of services that may be sold are information such as the most recent stock prices, the most recent foreign exchange rate, or education. Entertainment such as games that would be played on the internet are also examples of e-services. So are the sales of services such as telecommunication services or banking services. The sale of tangible and intangible goods are all referred to as customer-oriented e-commerce or e-retailing, if they are sold directly to the consumer who is the end user. E-services are discussed in Chapter 13. Here we discuss the sale of tangible goods.

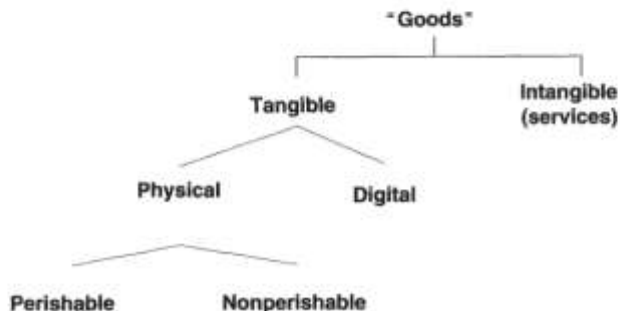


Figure 11.1 Selling of different types of goods

11.2 TRADITIONAL RETAILING AND E-RETAILING

11.2.1 Traditional retailing

Before we begin a discussion of e-retailing, it would be useful to look at some aspects of traditional retailing. This helps to identify some essential characteristics of retailing.

Traditional retailing essentially involves selling to a final customer through a physical outlet or through direct physical communication. This normally involves a fairly extensive chain starting from a manufacturer to a wholesaler and then to the retailer who through a physical outlet has direct contact with the final customer.

Examples of physical outlets that retailers currently use are [Lusch and Lusch, 1987]

- malls
- generalized stores (e.g. department store)
- specialized stores
- franchise stores

Malls consist of a collection of individual stores, each of which are under their own separate management. The mall management only provides the physical location where the retailer can create his outlet.

In contrast to that, generalized stores are stores that essentially have one unified management but carry several different product lines. So a generalized store may carry everything from shoes to books, to beds, to television sets. It does not specialize in a specific area of merchandise that it actually retails.

Specialized stores, on the other hand, sell a specific product line. They may choose to be in clothes and may be in a particular segment of the clothing market. Thus, a specialized store may position itself at the high end of the clothing market and sell only brand names like Peirre Cardin, Gucci, Lacoste, etc. Alternatively, it may be one that does discount selling and sells inexpensive brands, which go directly to customers. These two positions in the market would be aimed at different classes of customers.

Franchise stores, on the other hand, are stores where there is a single marketing chain and brand name for the store, but the individual store may be run by a different management with a royalty arrangement back to the franchisee. The franchisee would normally be responsible for the marketing, advertising, and sometimes supply of merchandise.

We will later see that each of these classes of stores have an equivalent counterpart in e-retailing. It is useful to reflect that even in traditional retailing we have moved away from just using a static physical outlet within which a customer can

have direct contact with the retailer. Thus, more recent forms of traditional retailing include

- direct mailing
- telemarketing
- door-to-door sales
- vending machines

Direct mailing to a customer normally involves sending a brochure or catalog to a customer. The customer browses through this catalog and then carries out mail ordering. In some respects, this notion of browsing through a catalog is a forerunner of e-retailing. Direct mailing, telemarketing, door-to-door sales, or the use of vending machines includes other forms that have actually moved away from a physical fixed outlet and in a way are an intermediate form of the movement away from traditional physical retailing outlet to the virtual retailing we see on the internet.

11.2.2 E-retailing

In this section we look at how some of these traditional outlets for retailing map to the new medium of e-retailing. Let us first take specialized stores. They specialize in a particular product line. Thus, we get specialized e-stores, such as 1-800-Flowers, which specializes in selling flowers, and Amazon.com[®], which started by specializing in selling books.

The internet has allowed a new kind of specialization to emerge. Instead of specializing just in a special product line, they allow specialization in particular classes of customers and sellers. Thus, we see lastminute.com, which allows last minute purchases of travel tickets, gift, and entertainment to be matched against last minute sellers of the same items. Here, we see specialization not in a product line but in a class of purchasers and a class of sellers. This kind of specialization would not have been possible before we had the internet.

In addition to these specialized stores, we also get generalized e-stores where a store sells several product lines under a single management. Examples of these generalized stores include JC penny and Walmart.

We also have the electronic counterpart of malls or e-malls. E-malls essentially provide a web-hosting service for your individual store much in the way that malls provide a hosting service in the sense of a physical location for your store. Examples of these e-malls are Yahoo!Store, GEOShops, and CNET stores.

In the future we may see the equivalent of franchise stores developing.

One new class of business that is developing very quickly on the internet is the e-broker. The e-broker does not sell directly to a customer but brings the customer in

touch with a particular supplier, so that a given set of criteria specified by the customer is satisfied. For example, the customer may want to buy goods at the cheapest price and so the e-broker would then do a search to find the supplier that would provide the cheapest goods. Or, a customer may want to find a particular kind of goods and the e-broker sets about determining which supplier would provide those goods. This area of e-broking is likely to grow very greatly in the near future. It takes several forms, some of which, such as comparison shopping, we will discuss in detail later.

In summary, we can, therefore, map traditional forms to e-retailing as follows:

- Specialized stores → specialized e-stores
- Generalized stores → Generalized e-stores
- Malls → E-malls
- Franchise stores → ?
- New form of business: e-broker

11.3 BENEFITS OF E-RETAILING

11.3.1 To the customer

Customers enjoy a number of benefits from e-retailing. The first of these is convenience. It is convenient for the customer as he does not have to move from shop to shop physically in order to examine goods. He is able to sit in front of a terminal and search the net and examine the information on goods. The second aspect of convenience he gets is in terms of time. Normally, the traditional shop has an opening time and a closing time and the customer can only visit the shop within these periods. On the net, the customer can choose at any time to visit a site to examine the goods that are available and actually carry out his purchasing at one's own convenient time. The third type of convenience that the customer gets is that he has access to a search engine, which will actually locate the products that he describes and also the site where they may be available, or perhaps even locate the sites where they may be available at the best price.

The second type of benefit to customers is better information. The Internet and the World Wide web are essentially communication media that allow retailers to put on quite extensive information related to their products, which is available to the customers. Furthermore, since the customer can look at several sites, he will be able to obtain different pieces of information from each site to build a far better picture for himself about the products that he is interested in. In some sites, there are customer reviews of different products as well as reviews by the business itself. An example of this can be found on Amazon.com. This allows the customer to finesse

his requirements before actually making the purchase. It also gives different sources of information.

The third type of benefit that the customer gets is competitive pricing. This is due to two factors. The first is lowered costs to the retailer because he does not have to maintain a physical showroom, he does not have to hire several shop assistants, and these savings can be passed on to customers in the form of reduced prices. Secondly, competitive pricing pressure that arises from the fact that the customer is now able to look at prices at several sites. Therefore, the pressure is always there on the retailer to maintain a competitive price for his products.

The fourth benefit is customization. The customer can actually specify the features of the products that he would like and thus in some cases it is possible that the retailer may allow a customized product to be delivered. An example of this is on the Dell site. The computer site allows shoppers to custom specify their own computer software and hardware configurations. Thus, the customer is able to select exactly what he wants. This ability to get the business to deliver a product that the customer specifies he wants is the essence of C2B e-commerce.

In summary, the benefits of e-retailing to the customer include

- convenience
- better information
- competitive price
- customization
- shopping anywhere, anytime

So with e-retailing, the customer can shop anywhere around the globe without being restricted to his local vicinity. He could, for example, purchase goods overseas and have them delivered to a domestic address. He can also shop, as mentioned earlier, at any time. These are very considerable benefits of e-retailing to the customer. These benefits could see larger and larger numbers of customers move more and more of their shopping on to e-retailing sites in the future.

11.3.2 To the business

There are a number of benefits of e-retailing to the business itself. The first of these is global reach. The retailer now is no longer restricted to customers who are able to reach the store physically. They can be from anywhere around the globe. The retailer must, of course, deliver the goods of a purchase to the customer. We see later that this has an impact on the types of goods that are most easily handled through e-retailing.

The second benefit is better customer service. The use of e-mail and the use of electronic interchange of messages between the customer and the retailer allows better communication between the customer and the retailer. These allow one to easily field

inquiries and deal with complaints. These also allow a much more rapid response time than was possible in the days of faxes and postal mail.

The third benefit is the lowered capital cost to the retailer. The retailer does not have to maintain showrooms, he can probably have lower inventories. Thus, while Amazon.com lists over a few million titles, it keeps an inventory of a few thousand best selling titles only. Therefore, the retailer has lower warehousing costs. He does not have to have many shop assistants who are physically answering questions and showing the customer goods.

The fourth benefit to the retailer is mass customization. Based on requests by the customers, the retailer is now able to carry out mass customization with reduced time to market for the customized products.

The next advantage is targeted marketing. The retailer is now able to pick on a specific targeted group of customers and direct marketing towards these customers.

The retailer is also able to provide more value-added services in the way of better information, add-on services to basic services, or add-on options to products that he is selling.

The last advantage to the retailer consists of different new forms of specialized stores that he is now able to utilize. As we have mentioned previously, now he does not have to specialize his store based just on a product line but could choose to specialize his store based on a specialized targeted group of customers. It also creates new opportunities for niche marketing.

A summary of the benefits to the e-retailer are

- global reach
- better customer service
- low capital cost
- mass customization
- targeted marketing
- more value-added services
- new forms of specialized stores and niche marketing

11.4 KEY SUCCESS FACTORS

11.4.1 For traditional retailing

There are a number of key success factors which have been identified for traditional retailing [Lusch and Lusch, 1987]. Two of these are the size and the number of outlets. The larger the retailer, the greater the buying muscle and therefore the lower the price for procurement. The number of outlets also allows the retailer to spread the purchase costs over a larger inventory.

In addition, the number of outlets provides for better visibility. The retailer is now visible to the customer at many geographical locations rather than just one. Location is, of course, an extremely important success factor in traditional retailing. The retailer may choose to be sited in the central business district, in a regional area, in a shopping complex, or in a street of shops. This may relate to the category of customers and the costs associated with the site.

Other factors that are very important in traditional retailing are store atmosphere and store layout [Lusch and Lusch, 1987]. Store atmosphere evokes a particular look and feel about the retailer and is therefore important to the positioning in the market. Store layout is important in creating an atmosphere but is also important in ensuring that one groups different sets of products together, so that the purchase of one product will frequently lead to the purchase of another, thus allowing for cross selling.

Price is important and here it is not necessarily the cheapest price, but the price which is consonant with what the customer expects to pay for the goods.

The variety of goods in the case of a large store, particularly of a department store, is also important because a customer would come in looking for one set of goods and then choose to purchase others.

Profit margins are important in traditional retailing, and last but not least is the level of turnover.

To summarize, the key success factors for traditional retailing are

- size
- number of outlets
- visibility
- location
- store atmosphere
- store layout
- price
- variety of goods
- profit margins
- turnover

11.4.2 For e-retailing

In this section, we explore how these success factors of traditional retailing translate to e-retailing. The first one considered is size. The important point to realize here is that no matter how large the company is your e-store presentation is still limited to the size of the computer screen, which may be, say, 15 in. It is not necessary to

look at the number of outlets in cyberspace because you probably need only one web site set up. However, this web site is linked to other similar web sites and portals. Therefore, it is not the number of outlets that is important but the number of links from other important sites to your web site which is far more important.

When one thinks of visibility, it is all the more important in cyberspace. It is not just enough to create a web site; you have to let the world know the existence of your web site and that people can purchase from your e-store. When looking at visibility, the important point to realize here is that most people find information on the internet through the use of search engines. Therefore, it is very important to register the web site or e-store with the most common or the most widely used search engines, such as Lycos, Alta Vista, and Yahoo. It is also important to link your web site with other well-known web sites that have similar interests, or major portals such as Yahoo, which link back to your e-store. This can greatly increase the visibility of the web site.

When considering location, we note that the geographic boundaries no longer exist. A local e-store and a foreign e-store are both just "one click" away.

Store atmosphere is particularly important on the web. The "look and feel" of the web site should match with the company's image as well as the market position that it seeks to address. Thus, if you are selling very up-market clothes such as Gucci and Armani, your web site for these stores should have a sophisticated look and feel about it. On the other hand, if you are selling other kinds of goods, you could choose to have a slightly more jazzy image on your web site. The front page or the homepage of your e-store is particularly important. It may be the only chance that you get of luring a potential customer into your e-store. In some ways it plays a similar role for the e-store that the window display plays for the traditional store. What is also important is in going through this store. The layout of the store has to be such that it facilitates the customer's interests. The advantage of using store layouts in the e-store is that the layout can actually be made dynamic and be determined by the customer's interests. The customer's interests could be obtained from data mining his previous purchases at the e-store. This is the major difference between a traditional store and an e-store.

Price is very important in cyberspace because the customer can easily carry out comparison pricing between your e-store and other e-stores not just in your immediate neighborhood but all around the world. Also some e-brokers provide agents or services that carry out comparison pricing; therefore, the customer can easily find the cheapest price. For this reason, it is important that in e-retailing one sets up a competitive pricing structure. Next, when one looks at the variety of goods, one here needs to consider very carefully whether you are setting up a specialized e-store or an e-department store. If you are setting up a specialized e-store, then you need to gain access to the specific target group of customers you are interested in because they can travel so easily in cyberspace to reach you. When one looks at profit margin

and turnover, generally profit margins per item tend to be lower with e-retailing, and so turnover must be higher. Lastly, if one examines profitability one finds that this is still important with the e-stores, but in recent times the share price of the e-store appears to have assumed more importance in the eyes of investors. However, in the long run, profitability will assume more importance.

11.5 MODELS OF E-RETAILING

There are several models for e-retailing and these include

- Specialized e-store
- Generalized e-store
- E-mall
- Direct selling by the manufacturer
- Supplementary distribution channel
- E-broker
- E-services

We discuss these in turn here, except for the last two, e-broker and e-services, which are discussed in Chapter 13 on e-services.

11.5.1 Specialized e-stores

The first class of model what we mention in e-retailing was the specialized e-store and here you can distinguish between two different kinds of specialization. The more traditional specialization along product lines and specialization by function (which we discuss later). When you have specialization by product line, essentially you have a store that decides to pick one particular product line, say books, flowers, CDs, clothes, and sells only this particular product line. It may also choose to position itself in a particular part of the product line, e.g. clothes; it could choose to position itself at the very expensive end of the market selling brand names like Gucci and Armani. Alternatively, it could do more mass marketing by selling non-brand names at a much lower price, or it could go into discount selling. So, you can have a specialization by product line, and then you could have specialization of positioning within that product line to cater for a particular part of the market. In contrast to this, a new kind of specialization is emerging on the internet, as mentioned earlier, namely specialization by function. A good example of this is lastminute.com.

In lastminute.com they sell gifts, travel tickets, and other items for last minute shoppers who want to purchase these items at a very short notice. Generally, when one purchases an item at a very short notice (e.g. travel), he often pays a premium, which is an extra amount for the convenience of booking the travel at the last minute. Now, this means that the air ticket is likely to cost much more than if he had purchased it some time before travelling and made use of different discounts or promotions. The producers of the web site lastminute.com realized that there are groups of customers who make these purchases at the last minute and feel some degree of angst at having to pay the premium for doing this shopping at the last minute. On the other hand, you will find that you may have sellers, e.g. airline companies, that have empty seats at the last minute which they are unable to fill. So, what lastminute.com does is bring together travellers who want to book at the last minute and an airline which has got spare capacity at the last minute, and allow the former to buy from the latter at the last minute. In this situation, the purchaser may get his airline ticket at a reduced price.

So, there is a win-win situation for both the purchaser and the seller. This is a unique kind of specialization. It is very difficult to do this unless one utilizes the internet to carry out this kind of specialization. Now, let us go on to discuss individual case studies under these two categories, namely specialization by product line and specialization by function. Let us start by considering specialization by product lines.

Case study 1: Amazon.com

The first example that I want to discuss is perhaps one of the best known among the internet e-retailers, and this is the Amazon.com. The homepage for this is given in Figure 11.2. We intend to discuss this in some detail to understand some of the features of an e-retailing site.

Amazon.com in the first quarter of 2000 had 4.7 million titles and a customer base of nearly 10.7 million customers.

Amazon.com started off as a company in July 1995 and the growth you have seen has all occurred only in the last five years. Now, when you compare this to the growth of a traditional retailer, you can see that the difference is quite staggering. Amazon.com emphasizes three things, which are very important to the customer. The first is ease of selection, the second is ease of use, and the third is price. Typically, its books cost almost 40–50% less than those sold through traditional bookshops.

Looking at the actual ordering process when using a web site, (Figure 11.3), we note the typical ordering structure, namely the order creation and order submission process. It begins with a welcome and then proceeds to allow you to select the method of payment, and then the company wants to know if you want this order to be treated

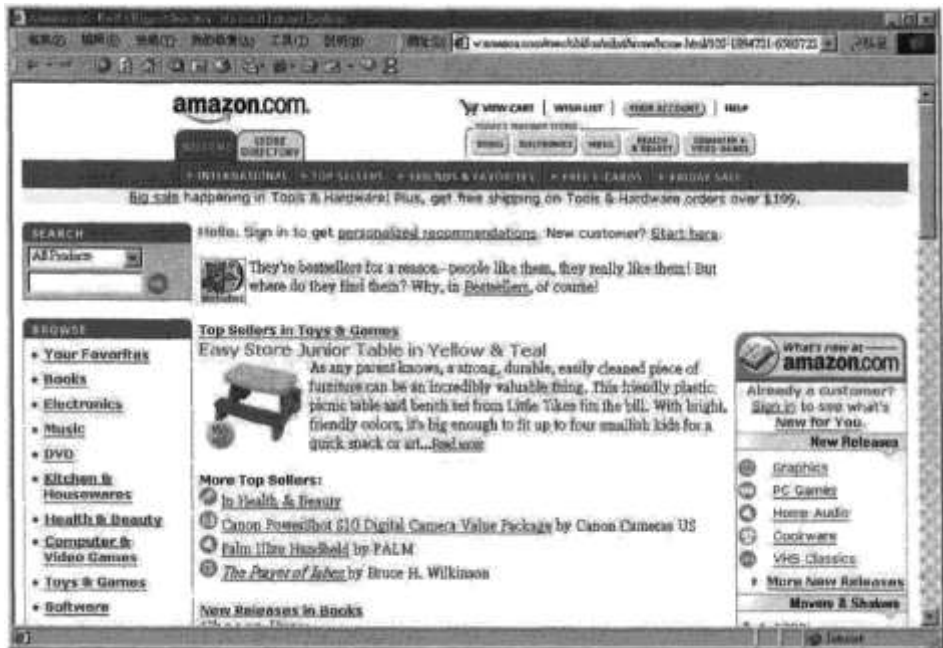


Figure 11.2 Homepage of Amazon.com (©2001 Amazon.com, Inc. All Rights Reserved. Reproduced with permission of Amazon.com)

as a gift. After that, it provides you a place to enter your shipping address for the order, and next it asks you to verify and check the order you have put in. Then it presents you with credit card information you have previously entered and allows you to select the particular card you intend to use. Lastly, it allows you to select a shipping option.

When you visit Amazon.com's web site you should look carefully at this order creation and order submission process. This site has some very important features that need to be utilized by e-retailers. Certainly, all facets in the order creation and order submission process, whether they are carried out in that sequence or a slightly different sequence, have to be matched by any order creation and order submission process by an e-retailer on the web.

But the strength of Amazon.com is not only in the order creation and order submission process. It greatly assists you to select the items you want. It provides two important means of selecting an item. The first relates to selection by subject or category. It lists its books under different categories and you can then select and browse the category or subject you are interested in and determine if the book you are looking for is there. An alternative means, which is not available in the traditional bookshop,

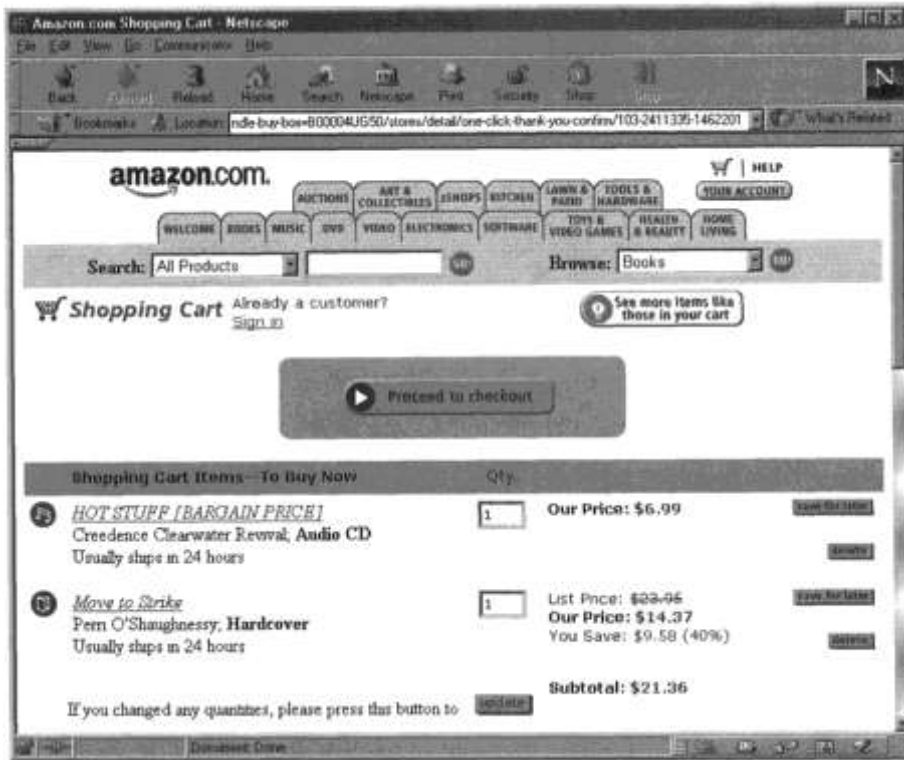


Figure 11.3 Ordering screens of Amazon.com (©2001 Amazon.com, Inc. All Rights Reserved. Reproduced with permission of Amazon.com)

is that it allows a key word search facility, which picks out the books of interest using a search engine.

The other feature that is added to the selection process and supports the customer is a purchasing circle. Here, information is analyzed by zip codes and by domain names for specific books and specific classes of users, and then a purchasing circle is created utilizing a technique called collaborative filtering. Therefore, one gets a group of customers who have a specific set of interests that can actually access a given purchasing circle. This allows one to display titles which may be of interest to purchasers within the purchasing circle and target special offers and reviews.

It also does the usual thing that the traditional bookstore does, i.e., it displays all the best-sellers at the outset. In order to aid the selection process it utilizes a shopping cart where one actually selects items by just using "one click" on the item, and this is automatically added to the shopping cart. When one has finally completed the selection of items, one can proceed to order creation and order submission. Of

course, like any other web site, it has to ensure that it has got a secure e-payment system and that it goes into a secure mode allowing you to enter your information on your credit card directly through the internet. Alternatively, if you are hesitant to do that, it provides a means by which you can phone in the required information to Amazon.com after you have actually submitted the purchase order.

Other facts about Amazon.com that are very interesting are the very rapid growth rate in sales and revenue. As mentioned earlier, it was created in 1995, and by 1996 it had sales worth \$15.7 million. In the first quarter of 2000, it had a revenue of \$573 million. Now, this is a phenomenal growth in revenue over a very short period.

Later, we compare what Amazon.com is doing with an alternative book seller – Barnes and Noble – which utilizes a more traditional mode including a physical store as well an internet web site. We note that Amazon.com, even though it started by specializing in books, did not pick out a special segment of the book market unlike other stores that might just specialize in, say, only technical books. These stores are specialized in a specific segment within the book market. The other thing we notice about Amazon.com is that while it started as a specialized store concentrating totally on books, it has moved into several other areas and now includes a wide variety of items such as CDs, electronic goods, DVDs, computer games, and videos; but we also note that it has still restricted itself to a category of goods where the distribution costs are not likely to be high because the item involved is either relatively small or a high-value item. This is an important fact that has to be taken into account whenever you are doing e-retailing. Note what Jeff Bezos (who started Amazon.com) did when contemplating internet commerce; the first most interesting thing he did was to write down a list of products that he thought could be sold on the internet, and he finally settled on books. He thought very carefully about choosing the specific product before actually setting up the e-store. These are important factors to take into account if you are going into the business of setting up an e-store as they impact your business model significantly.

Perhaps at this stage you should go to the Amazon.com's site and look at some of the features we discussed so as to understand them more clearly. The web site is <http://www.amazon.com>.

Case study 2: 1-800-Flowers

1-800-Flowers (see Figure 11.4) is a leader in selling flowers and other gift products. While it provides a typical B2C e-commerce service like Amazon.com, flowers are perishable goods and so even better logistic arrangements have to be made. To tackle



Figure 11.4 Homepage of 1-800-Flower.com (with permission of 1-800-FLOWERS.com)

this problem, 1-800-Flowers delivers flowers through many international affiliations. Besides ordering through the company's web site, customers can also place orders through a toll-free telephone number, some portal web sites, and the company-owned or franchised retail outlets.

Case study 3: CDNow

The third example of an e-retailer we consider is also one that specializes in a product line and is known as CDNow (see Figure 11.5). CDNow was created by Jason and Medolon in August 1994 and is essentially an on-line seller of music CDs. There are some important differences between CDNow and Amazon.com and 1-800-Flowers.

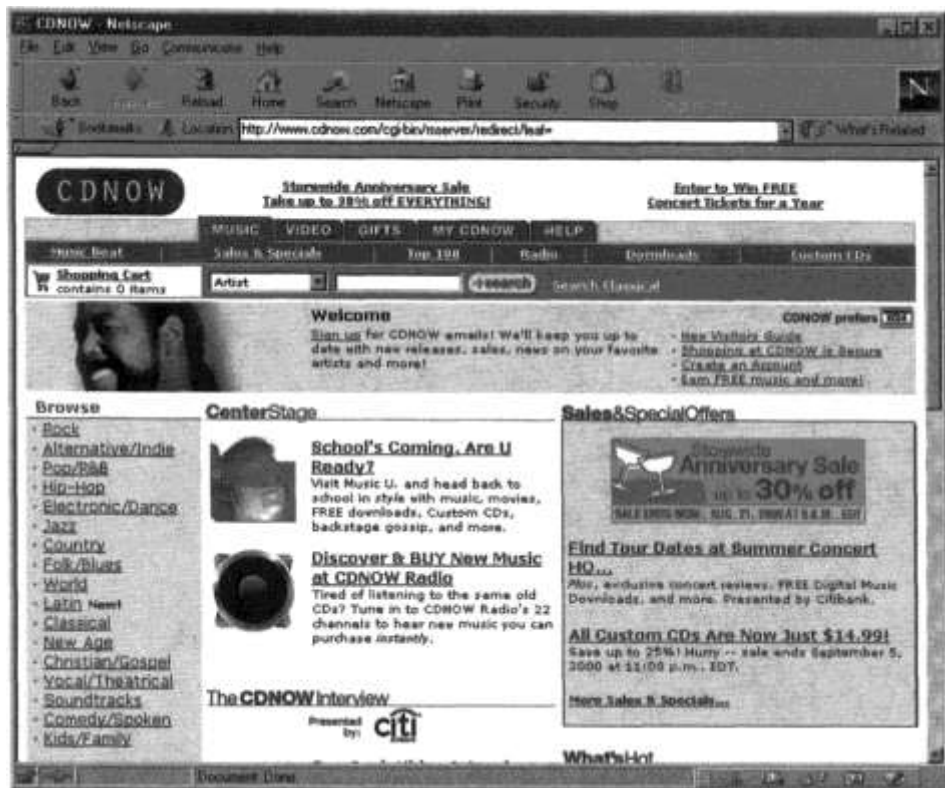


Figure 11.5 Homepage of CDNow.com [© 2000 CDNOW, Inc. (all rights reserved)]

The first is that one can actually access samples of the product because CDNow allows you to download and hear samples of the music that you might be thinking of purchasing. In addition, because it is a digital product, it can actually be downloaded, if necessary, to your machine directly after you have completed the purchase.

Unlike the other two products, which were books and flowers, while they can be ordered via the internet, nevertheless have to be delivered physically. So a somewhat different distribution mechanism can be utilized here, even though one can also deliver CDs by mail or through associated physical stores. When compared with Amazon.com and 1-800-Flowers, we note that CDNow provides search by the author, by the singer, by the song-title, or by the music. So again we note that this e-retailer has a browsing facility and a search facility.

As with the other two stores, there is an order creation, an order submission process, and you have to have an effective selection process.

11.5.2 Basic features of an e-retailing system

Now that we have examined three different case studies, you should visit their web sites. We are now in a position to provide a summary of some of the features of these e-retailing web sites. These web sites must provide

- a method for selecting your purchases (e.g., Amazon.com provides a shopping cart facility).
- a mechanism for creating and submitting an order.
- a secure e-payment facility for your purchases.
- an appropriate distribution mechanism, which has to be carefully thought out for the particular category of goods that are being sold.
- a browsing facility, normally by subject or by category.
- a searching facility, which will search for a particular good that you need.
- a mechanism for customer service and feedback.

The more sophisticated of these e-retailing systems also include some additional features, and these features provide analysis through data mining and through the creation of collaborative mechanisms on the web. The first of these will allow cross selling and targeted marketing by presenting to you preferences of products which have been purchased by other buyers who have made purchases similar to yours in the past. They might try to create purchasing circles through collaborative filtering as mentioned earlier in the case of Amazon.com. They might create new product combinations and product lines. These could be as a result of continuously evolving product lines based on the advice or the feedback from customers as to what they are seeking. Thus, we note that CDNow provides a facility for the consumer to suggest the type of CD he would like to have. They also frequently provide chat-room and community features trying to emulate some long-lost features that people in a village experienced when they went along to a store that had a community around it. They sometimes also provide “question and answer” facilities. Amazon.com also provides a facility for customer reviews of products.

In the long term, most of these e-retailing sites, as they become more sophisticated, will provide some of the more advanced features that are referred to here.

11.5.3 Specialization by function

Lastminute.com (see Figure 11.6) is an example of a web site that carries out e-retailing where we have specialization by function, which is specialized to a particular class of consumers and a specific class of sellers. Essentially, what the e-retailer

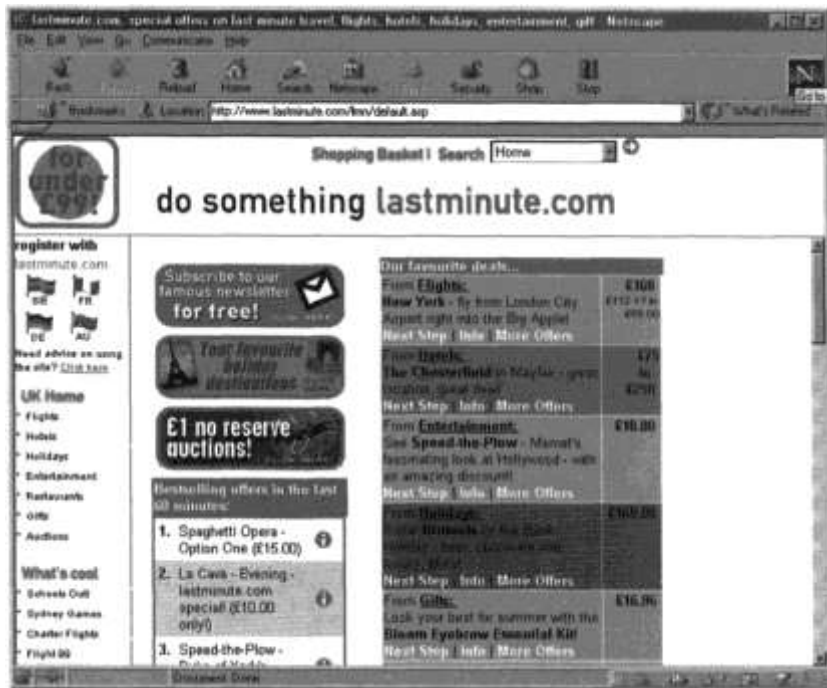


Figure 11.6 Homepage of Lastminute.com (Reproduced with permission of Lastminute)

provides is that it facilitates in bringing together last minute sellers of services or products and last minute buyers of that service or product. This ability to match last minute sellers with last minute buyers has essentially been made possible by the internet. It would have been difficult for a traditional store to provide this specialization by function because of the necessity to communicate information between specific large but dispersed groups. In order to understand this e-retailer, imagine that you have a plane taking off in two days' time from Hong Kong to London, and 30% of its seats are empty. On the other side, imagine that you have a whole lot of people who might like a holiday in London, but either have never been able to afford it or have been very busy and have not been able to make their plane bookings in time, and have to rush to make plane bookings and hotel bookings at the very last minute.

Generally when you make these plane bookings and hotel bookings at the last minute, you end up paying much more than you would if you had actually made the booking much earlier. However, by tapping into unused spare capacity which is available to the sellers, Lastminute.com is able to provide these services at a much reduced cost. It is almost as if they are utilizing and generalizing the idea of standby, which used to exist for flights where at the very last minute you could get on to a

plane at a much cheaper price if the seat was not taken, except here the period is extended out a little beyond just the few minutes to may be a few days before the plane takes off. They do this last minute matching for a variety of things, including the last minute matching for flights, hotels, holidays, entertainment, restaurants, gifts, and even options. They sell packages and highlight special deals they have been able to get, which have to be fulfilled by the sellers and which have been created because the sellers have so much spare capacity at the very last minute. You might like to visit their web site and actually go through the process of selecting a hotel or a flight. Notice here that you will actually be specifying very clearly the type of thing you want. For example, in the case of selecting a flight, you have to indicate your starting point as well as your final destination, and this reduces the whole process of selecting considerably. This is unlike the situation that you have with books where you might get a book if you know its exact name, but if you don't, then you may just want to browse and look at a subject category, or just let the search engine help you by using some keywords. The facility here has been made possible by two factors that are related to the internet. The first allows the seller or the buyer to notify lastminute.com at the last minute through the use of the internet. This informs the e-retailer that he has either something to buy or something to sell at the last minute. The second facility which is utilized here is the search facility that looks at the notifications made by the buyers as well as by the sellers, and looks through all the sellers to see if it can find the sellers that match the services required by the buyers. So, utilizing these two facilities, one has created this special kind of specialization by function.

11.5.4 Generalized e-stores

The next category of e-retailing models that we intend to look at is generalized e-stores. Generalized e-stores sell a large number of product lines rather than confining themselves to just one or a very few product lines. First we examine Value America as an example of a generalized e-store that markets only through the internet and does not have physical stores to support it. In contrast, we see Walmart which started as a physical store and then moved on to utilize the internet as an alternative mechanism or channel for selling. We discuss each of these in turn.

Case study 4: Value America

Value America sells more than 2000 brands of products representing over 40 industries and covers everything from computers to CDs, perfumes, coffee, etc. An interesting aspect is that it concentrates on selling well-known brand names only as people cannot actually touch and feel the products and have direct acquaintance of the products. Value America, as in other cases, was started by someone who had a

strong background in the particular business, that is, of running a general store as well as of the internet.

Value America General Store offers a consumer the convenience of shopping directly from his computer and sells the products at a lower price. Value America takes orders from the consumers and then passes them on to a manufacturer who supplies the goods. Value America only actually owns the goods once the manufacturer takes the order and the goods are in transit from the manufacturer to the consumer.

As with other internet stores, Value America sets up strategic alliances. In this case, Value America and Fedex have strategic alliances to assist with the process of distribution. Again, note that the distribution aspects have to be very carefully worked out, particularly where the range of products can vary widely. Here, one does not have the convenience of sticking to a specific kind of distribution structure. In order to make the whole thing work properly, Value America has also created a good return mechanism for the goods which is as easy for the consumers to use as in actual purchasing. At the time of writing, we note that it was facing financial difficulties.

Case study 5: Walmart

In contrast to Value America which is purely a cyber superstore, Walmart has created a generalized e-store to support its existing physical chain of superstores. Walmart has actually been around for many years. It started way back in 1962 and has grown to a huge company, which does traditional retailing concentrating on discounting and works on creating a local touch and a strong personal feel in its relationship with the customers. In order to extend this, it has added an internet shopping generalized e-store, which sells a wide variety of goods ranging from home appliances to cameras to hobbies and crafts and home electronics and a wide variety of other things which are normally available in their traditional stores. The advantage of Walmart in creating a generalized e-store is that it has existing physical stores to act as distribution points for products sold on the internet.

11.5.5 E-malls

The next e-retailing model we consider is the e-mall. In an e-mall, cyberspace is rented out to cyber e-stores that wish to sell their goods. This store could be a specialized or generalized e-store. So, several product lines can be present in a single e-mall. However, unlike the generalized e-store which is under a single unified management, in an e-mall, each store is under its own management. E-mall management is responsible only for creating the cyber sites that can be rented and can support

services and marketing of the mall. It, thus, provides a web hosting service. Several e-malls also provide software tools, which can be utilized by a prospective e-store to create and maintain its e-store. The advantage for an e-store is that it is grouped together with other stores in a well-known e-mall site and, therefore, is likely to pick up visitors to the mall. Well-known examples of e-malls are Yahoo!Store and CNET stores.

Case study 6: Yahoo!Store

Yahoo!Store is an e-mall or portal that charges a fee based on the number of items the hosted e-store sells. Thus, for 50 items, the e-store only pays \$100 and this can rise to several hundreds. It hosts small e-stores and big well-known stores. The e-retailers can customize their own store fronts. Note, however, that the individual e-store URL is a subdomain of the Yahoo! URL. Thus, if you opened an e-store called myestore, your customers would use the following URL to access your e-store, namely <http://store.yahoo.com/myestore>.

You can create, edit, and manage your e-store using a web-browser through a different URL. Yahoo also provides a directory and processes payment transactions for the e-store securely. Yahoo has a navigational guide and directory where the category for the e-store is manually designated by a Yahoo staff member. Yahoo also provides software tools such as Manager to assist you to manage the store, e.g. selection of payment methods. These also include communication tools, on-line forums, chat rooms, etc. Yahoo itself also generates revenue from on-line advertising, sponsorships, licensing, etc.

11.5.6 Direct selling by the manufacturer

A number of manufacturers with well-known brand name products have chosen to use the internet to carry out direct selling via the internet. One of the best known here is Ford (see Figure 11.7), which utilizes the internet to achieve direct selling but uses its dealer network to facilitate distribution and delivery. The other well-known examples are Cisco systems and Dell computers. Note that this approach permits mass customization to meet customer preferences. This direct selling by the manufacturer has an important disintermediation effect leading to reduced costs to the end customer and increased profitability to the manufacturer. A note of caution is important here. By and large, this approach can be used by manufacturers of well-known brands of products because the customer already knows the product. Secondly, the manufacturer must have a thorough understanding of customer preferences, otherwise he has to rely on the customer knowledge of a retailer.

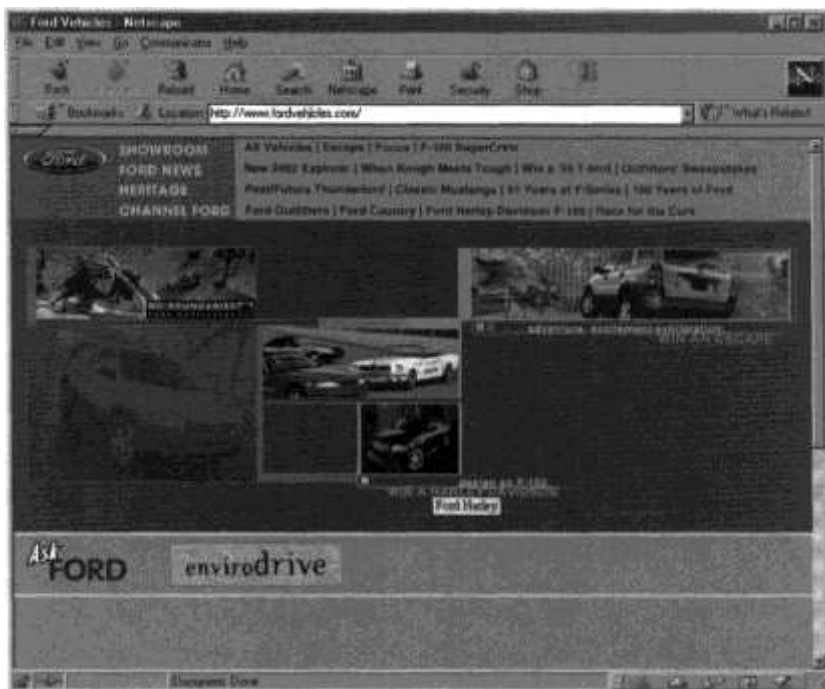


Figure 11.7 Homepage of Ford (Courtesy of Ford Motor Company)

11.5.7 Supplementary distribution channel

Several retailers that already have a highly successful “bricks and mortar” operation have turned to the internet and created an e-store. They have several motivations for doing this and these include

1. Fending off a challenge by an aggressive e-store in their line of product. An example of this is Barnes and Noble’s response to Amazon.com’s success in grabbing market share or Toysrus.com as a response to eToys.com.
2. Providing an additional sales-ordering mechanism.
3. Enhancing their service, such as customer service operation, through the internet.
4. Providing a mechanism of drawing people into their physical store as these could often be used for delivery and distribution for products sold on the internet.

Here, there are several different ways in which a bricks and mortar company could enter the e-retailing world. It could

1. integrate e-retailing into its business, e.g. Dell, Cisco, or Ford.
2. create an e-retailing subsidiary, e.g. Toysrus.com and Barnesandnoble.com (bn.com).
3. develop an alliance with an existing e-retailing company, e.g. Petsmart.com.

Case study 7: Barnes and Noble

Barnes and Noble (see Figure 11.8) is the largest physical retailer of books in the United States. In response to the challenge of internet retailers of books, it launched its own online subsidiary in March 1999 and is now among the top five e-retailers



Figure 11.8 Homepage of barnesandnoble.com (bn.com) (Reproduced with permission of Barnes & Noble)

on the internet. Its web site is barnesandnoble.com (or bn.com). It retails books, music, cards, print and posters, software, and magazines. Unlike Amazon.com, it sells books through both the physical and electronic channels, but like Amazon.com it retails millions of titles. As with Amazon.com, it offers discounted books, reviews, excerpts from books, and recommendations from editors. It also has a community of readers and provides author chats and monthly readings. So, it creates new marketing mechanisms through the use of the internet.

11.5.8 Brokers or intermediaries

This class of e-retailers is essentially an extension of the notion of a broker from the physical to the cyber world. A broker is an intermediary who

- may take an order from a customer and pass it on to a supplier
- may put a customer with specific requirements in touch with a supplier who can meet those requirements
- may provide a service to a customer, such as a comparison between goods, with respect to particular criteria such as price, quality, etc.

Thus, brokers provide comparison shopping, order taking and fulfillment, and services to a customer. That is the reason why they are sometimes referred to as electronic intermediaries.

Examples of electronic brokers or intermediaries include priceline.com, mySimon.com, and bestbooksbuy.com.

There are several different models for electronic brokers and these include

- Brokers that provide a registration service with directory, search facilities, e-payment facilities, and security-related facilities. Any business can register with such an e-broker (e.g. anewshop.com).
- Brokers that meet a certain requirement such as a fixed price (e.g. Priceline.com).
- Brokers that provide comparison shopping between products (e.g. mySimon.com or bestbooksbuy.com).

Case study 8: anewShop.com

anewShop.com does not sell goods to customers; instead it provides an online shopping guide. Thus, it includes a list of retailers and an online catalog of goods which consists of books, flowers, computer hardware, etc. For each catalog item, a detailed

description is given. anewShop.com provides a comparison of prices and provides its own opinion to help consumers make a choice.

Its revenue comes from advertisements by retailers on its site.

Case study 9: Priceline.com

Priceline.com (see Figure 11.9) is an electronic intermediary that asks customers to provide their pricing requirements for a number of items such as airfares, hotel rooms, cars, mortgages, loans, new cars, etc. The broker then puts a suggested price, say to a number of hotels in the case of a customer needing a hotel. The customer holds his bid price open for a given period, during which priceline.com tries to fulfill the request.

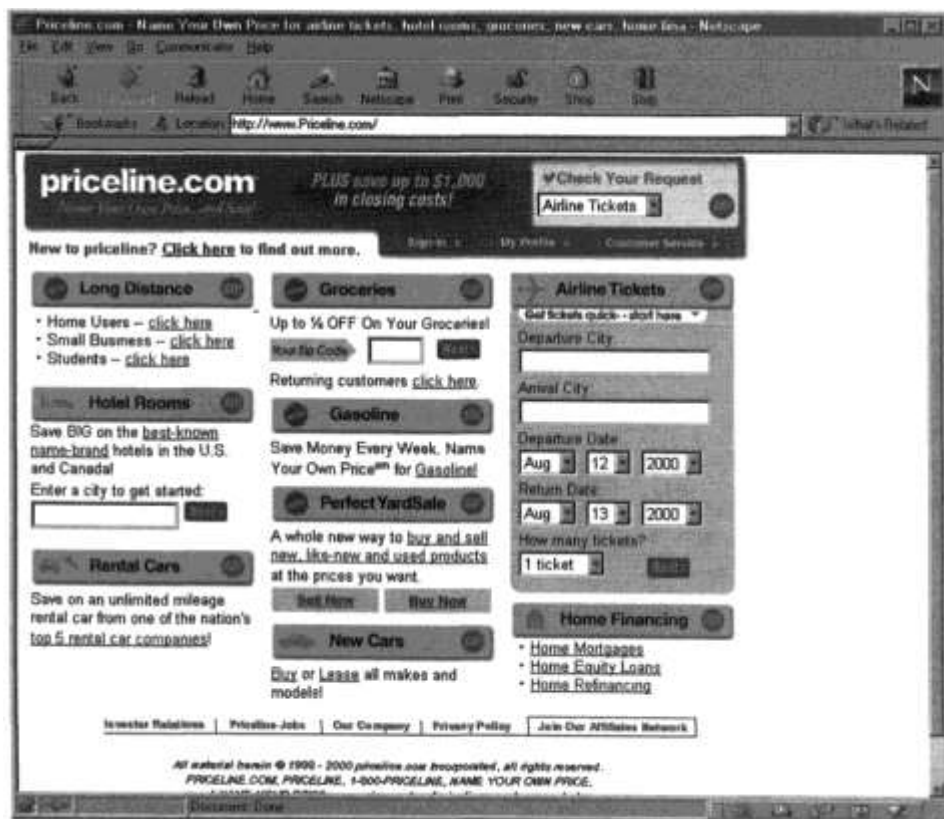


Figure 11.9 Homepage of Priceline.com



Figure 11.10 Homepage of mySimon.com (Reproduced with permission of mySimon)

He cannot refuse an offer that meets his bid price and, therefore, has to be flexible with respect to the airline or hotel he is willing to use. The revenue is generated from the difference the buyer is willing to pay and the price offered to the hotel.

Revenues in the half year to June 30, 1999 exceeded \$160 million.

Case study 10: mySimon.com

mySimon.com (see Figure 11.10) does a search on several product categories such as apparel, books, music, computers and software, consumer electronics, flowers and gifts, office supplies, and toys. It does the search over several web merchants and returns the best deal with respect to price. It also incorporates buyer guides on new products such as digital cameras, a newsletter, a “great deals” section, and a chat facility suggesting products or merchants, etc.

11.6 FEATURES OF E-RETAILING

Now that we have reviewed different models for e-retailing and examined several e-retailing web sites, we are in a position to distill some of the most important features, and these include

1. The provision of an on-line catalog, which allows one to browse through different categories of goods. Thus, it is dynamic and linked with order process.
2. The provision of a search engine, which is a very important feature that does not exist in traditional retailing.
3. The provision of a shopping cart, which allows convenient goods selection. An ability to provide an automatic price update.
4. Personalization of store layouts, promotions, deals, and marketing.
5. The ability to distribute digital goods directly. Thus, these goods can be downloaded instantly.
6. An on-line customer salesperson, “who” can help customers to navigate through the site.
7. An order status checking facility, which is a useful feature before submission.
8. The use of Forums (collaborative purchasing circles) to create a customer community and thus increase “stickiness.”

11.6.1 The future of e-retailing

When one examines e-retailing, one can distinguish between two trends, namely

- Technologies that help you see and experience the product better, e.g. virtual reality, Java 3D, etc.
- Technologies that help you not to see at all but use an intelligent agent (or mobile agent) that does all the shopping tasks for you.

11.7 DEVELOPING A CONSUMER-ORIENTED E-COMMERCE SYSTEM

Software engineering is the discipline associated with building software systems. Software engineering has been progressively maturing as a discipline. It has moved through description techniques, which characterize aspects of control, through data

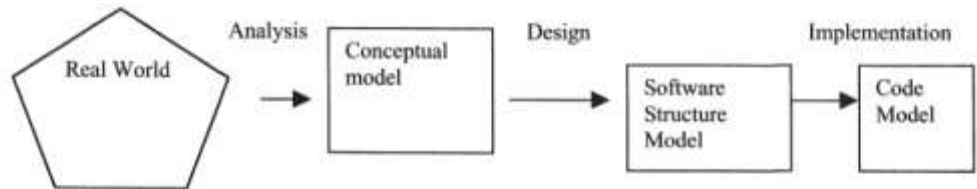


Figure 11.11 Three-stage modelling of software engineering process

flows, and eventually through methods that capture both structure and behavior. The emergence of object-oriented, component-based paradigms have allowed one to characterize a wide range of real world systems as the first step in constructing a software system. Dillon and Tan [1993] have characterized the software engineering process as a three-stage modelling process, as shown in Figure 11.11.

The following are the three models of interest:

1. Conceptual model
2. Software structure model
3. Code model

The conceptual model, which is the output of the analysis phase, is essentially a description of the relevant features of the real world using an expressive set of constructs. Here, no attention is paid to the implementation media or tool to be used to build the system. In contrast, the software structure model, which is the output of the design phase, must pay careful attention to the constructs available in the implementation medium as it essentially forms the blueprint for implementation. As noted by Dillon and Tan [1993], different categories of systems such as traditional procedurally oriented systems, database systems, and knowledge-based systems can be described by object-oriented and components-based models, during conceptual modelling and software structure modelling.

One important feature that should, however, be noted is that the real world is taken as given and fixed during this modelling process.

11.7.1 The emergent business model as the basis of e-commerce system development

This last factor represents an important point of departure between e-commerce system development and other more traditional system development whether they are procedurally oriented, database, or knowledge-based systems. The creation of an

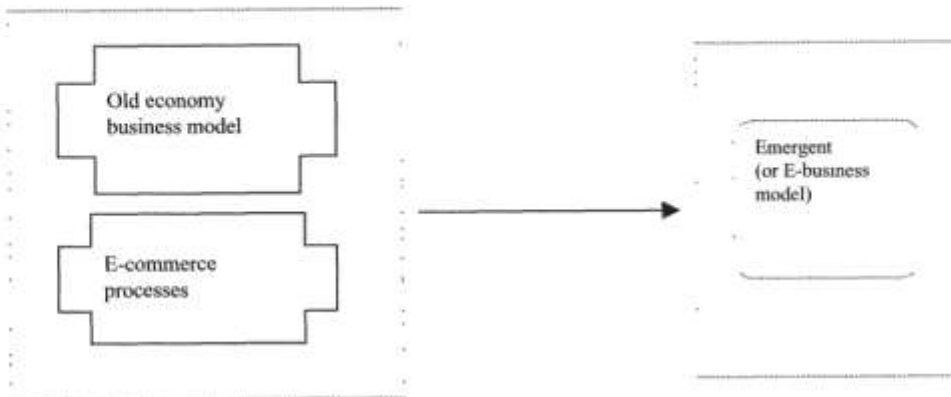


Figure 11.12 Emergent business model for e-commerce business development

e-commerce system presupposes a new way of doing business through the internet. This factor implies the following:

1. In the case of an existing “old economy” business, one would need a fusion of the “old economy” business with the new business leading to a metamorphosis of the business model. We call this new business model “An Emergent Business Model” or “E-business Model” (see Figure 11.12)
2. In case of a start up without any previous business operations, one would go through a nascent process to create an emergent business model or e-business model

This building of an emergent business model requires a description of the associated business processes. A business process can be defined as “a set of logically related tasks performed to achieve a defined business outcome” [Davenport and Short, 1990].

On examining the first case, we note that it has some similarities and some very important differences from Business Process Reengineering (BPR). BPR is essentially aimed at a “radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance such as cost, quality, service, and speed” [Hammer and Champy, 1993]. The metamorphosis process leading to an emergent business model involves a transformation of the business processes to effectively incorporate a new way of doing business through the internet. It frequently involves

1. the addition of new products and services, such as the sale of information
2. introduction of new sales and marketing modes

3. automation and streamlining of the backend processes to mesh with these
4. movement from mass production to mass customization
5. linking of the marketing process to ordering
6. targeted marketing
7. an electronic payment system
8. customization and personalization

Thus, one not only moves to reduce costs and improve efficiency but also adds new products and introduces new sales and marketing modes with a completely different reach from those that existed before. This is why it is important to distinguish the emergent business model from a purely reengineering business model.

11.7.2 Process-oriented e-commerce development approach

As the discussion in Section 11.2, an important first step in developing e-commerce systems is the definition of an emergent business model. This requires

1. A clear choice at the outset of the type of e-commerce system that is going to be utilized from the aforementioned four categories.
2. A definition of the goods and services that will be traded or some combination thereof.
3. A clear definition of the market mechanisms that will be adopted. For example, will the e-commerce system
 - carry out direct selling
 - act as intermediary or agent passing the orders onto someone else for order fulfillment
 - provide a virtual market where sellers and buyers could trade
 - act as a partial outlet for a bricks and mortar company
 - provide a fixed pricing structure or permit a request for quotation structure
 - carry out cross selling
 - provide an auction or reverse auction facility
 - define an e-payment mechanism

These and a number of other issues have to be clarified.

4. One next needs to determine the type of goods and services that are to be traded. A careful decision of goods to be traded has to be made as not all goods are appropriate for trading on the internet. Again, a decision has to be made of whether one wants to specialize in the line of products traded and how they fit in

with the business imperatives. It is also important to characterize the key profit drivers and steer business towards them.

In a recent consulting job carried out by the authors, the company's business drivers required a strong link between sale of goods and sale of logistics services provided by the company, allowing strong cross-selling of logistics services.

5. the mechanism for order fulfillment and distribution has to be carefully worked out and this has to be appropriate for the goods being traded.

The next step in the overall scheme is to define the business processes involved. This requires a very clear delineation of

1. the set of logically related tasks
2. the intended functionality of each task
3. the sequencing in time of these tasks
4. the preconditions that apply before a task can be carried out and the post conditions that apply after it has been carried out
5. the information or data required by each task
6. the exception conditions that could arise

11.7.3 Steps in the development methodology

The steps in the analysis, design, and development of an e-commerce system can be summarized as follows:

1. Develop description of existing business model
2. Develop e-business model
3. Develop requirements statement through analysis; this leads to the conceptual model of the system
4. Choose system architecture and implementation platform(s)
5. Carry out design to develop software structure model including software architecture
6. Develop detailed design, including web UI interfaces, databases, system integration aspects with legacy systems
7. Programming and customizing the system
8. Testing and piloting the e-commerce system

In Step 3, besides the normal conceptual model with object property diagrams, sequence diagrams, or other dynamic representation, it is also important to

- develop a category hierarchy and structure for the goods and services being sold.
- define the search and browsing capability, e.g. browse by category and search by keyword.
- define a goods selection mechanism such as a 1-click, shopping cart, etc.
- define a careful purchase requisition and purchase order submission process.

In the aforementioned steps, unlike more traditional systems, in e-commerce systems, it is very important to model workflows. However, unlike normal workflow modelling, these require techniques that can handle exceptions, changes in the structure and nature of workflow, and capture attendant data.

11.8 THE PASS* MODEL

Before the end of this chapter, it is of interest to look at how a B2C e-commerce web site can really “make cents.” We call the revenue model: PASS (i.e., *Publicity, Advertisement, Sale of goods/services, and Subscription*). In the early days, electronic payment methods were not mature enough to support B2C e-commerce. At that time, companies usually set up web sites for publicity reason. This is an indirect way of generating revenue because the web sites may lead to sales possibly through physical commerce. For web sites with significant number of visitors such as Yahoo, advertisements provide a good source of income. Again for most companies, these are indirect income. Now with the advent of SET and other electronic payment methods, companies can carry out secure transactions particularly payments directly on the internet. This is a more direct way of generating revenue. Finally, subscription is a means of generating constant revenue. However, this may be difficult to implement unless you have very attractive products/services. For example, some well-known newspapers and magazines do offer subscription services. While the web sites are open to the public, certain parts are restricted for subscribers only.

11.9 SUMMARY

In this chapter, we considered various aspects of customer-oriented e-commerce, or e-retailing. In particular, we examined the features and success factors of traditional retailing and determined how they translated to retailing on the internet. We also

* The PASS model is proposed by Dr. Henry Chan.

looked at several different models of e-retailing and considered several case studies corresponding to these models. Lastly, we considered the process and a methodology for developing a consumer-oriented e-commerce system.

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