

An Analysis of Commercial Internet Services

For ShopSmart Limited

An Interactive Qualifying Project Report


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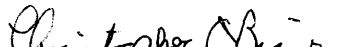
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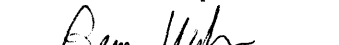
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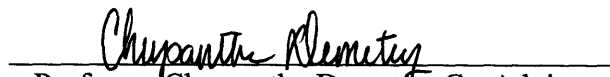

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Authorship Page

All members of this group have contributed equally to this project. Although the majority of the sections of this report have one primary author, each section was edited and reviewed by all group members. Details of primary authorship follow. The initials in the right hand column indicate the original author of each section. The members of our group were Danielle Barber (DB), Jaseem Hasib (JH), Chris O'Brien (CO), and Ben Wilson (BW).

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Abstract

The purpose of our project for ShopSmart Limited, an e-commerce leader in the UK, was to make recommendations regarding changes to ShopSmart.com. This was fulfilled through analysing and comparing e-commerce web sites in the US and the UK, conducting surveys at WPI and King's College of London, and interviewing London residents. After analysing the collected data, recommendations were presented regarding features that could be implemented on ShopSmart's web site while maintaining their impartial shopping guide.

Executive Summary

Use of the Internet in the United Kingdom (UK) has grown at an astounding rate during the past three years. Fletcher Research has estimated that as of January 2000, there were 15.7 million Internet users in the UK, an increase of approximately of 1500% from June of 1997 when the NOP Research Group estimated that 960,000 residents of the UK were using the Internet. This growth has increased opportunities to conduct business over the Internet, and the number of sites involved in the e-commerce industry in the UK has grown significantly. A study by the UPS Europe Business Monitor found that as of 1999, 55% of businesses in the UK were using the Internet for e-commerce, up from 29% in 1997. In the competition for customers, each of these online businesses attempts to offer new and unique services to its users. ShopSmart Limited is an e-commerce company in the UK that is currently retaining its industry leading position by addressing the competition.

ShopSmart's web site, an impartial guide to online shopping, currently offers a portal listing of online retailers as well as a price comparison service and as of February 2000, was among the top three retail web sites in the UK. Retention of this prominent position will require attracting new users to ShopSmart.com while effectively maintaining the current customer base.

The goal of this project was to formulate and present recommendations to ShopSmart regarding possible additions or changes to the services and features offered on their web site. One of the objectives towards achieving this goal was to determine features of e-commerce that were especially appealing to consumers. Using data collected by

Media Metrix, a research firm specialising in Internet and digital media measurement, we were able to establish the identity of web sites that were the most popular among consumers as of February 2000. An analysis of features available on e-commerce web sites in the United States (US) was also an important part of our research; another objective was to determine which popular features available in the US might be gaining popularity in the UK. We also wanted to establish other features that might be suitable and advantageous for implementation by ShopSmart. Our final objective was to investigate possible improvements that could be made to the methods already in use on the ShopSmart web site. These suggested changes were based on consumer opinion and preference as well as on comparisons made between ShopSmart.com and other successful web sites regarding the manner in which each site addressed areas of concern to consumers and the features available on each site.

Three key research methods were used to gather the data necessary to meet the project's objectives. We performed web site analyses, conducted surveys of university students at WPI in Worcester, MA and at the School of Physical Science and Engineering (SPSE) at King' College of London, and performed interviews of Internet café patrons in London. Our web site analysis covered twenty-four web sites involved in e-commerce: eight based in the US and sixteen in the UK. ShopSmart selected some of these sites for analysis while others were taken from among the Media Metrix data for top retail web sites and from the data concerning the most popular sites among the populations that we sampled. From each site, standardised information was collected regarding a number of aspects of the web site, such as the number of product categories each site offered as well

as the results of a simulated shopping experience, which revealed, among other things, the ease of use of each site and the appeal each site had from a consumer perspective.

The second data-gathering step was to conduct surveys of a similar population in both the UK and the US. We accumulated 518 completed surveys, 310 of which were completed by students at WPI and 208 by students at the SPSE. Questions on these surveys served to determine if any particular features of e-commerce appealed to online shoppers as well as to establish concerns regarding e-commerce among the surveyed students. Our intention in choosing these locations was to collect data that we could compare to determine cultural differences in opinions and preferences regarding e-commerce. The primary methods used to determine differences in these opinions were null hypothesis and correlation coefficient tests. The surveys were performed in classrooms at these schools to ensure a high response rate. Each school was accessible and contained a large number of students with technical backgrounds. Since 25% of male Internet users and 29% of female Internet users in the UK are between the ages of twenty-five and thirty-four, these sample populations could represent the future audience of ShopSmart.com following their graduation and entry into the professional world.

The third element of the data gathering process was the interviewing of Internet café patrons in London to gain the opinions of a wider range of consumer groups. Fifty-six interviews were conducted with residents of the UK only. We targeted this population because they were likely to exhibit familiarity with the Internet, since they were patrons of an Internet café. Since not all Internet users participate in e-commerce, the opinions of people who do not shop online were collected in addition to those of people who do shop online. In addition, the open-ended nature of the interview questions allowed us to

investigate some of the reasons people have for shopping online as well as for not shopping online.

Each of these three methods resulted in data that was significant to the accomplishment of our goals. However, it is important to note that neither the surveys nor the interviews provided us with data that characterised the entire populations of the US or the UK. These methods allowed us to draw conclusions about our sample populations, but our conclusions may be biased towards the opinions of college students in the survey results, and London Internet café patrons in the interview results.

The most important results from our research and analysis are listed below:

- The concerns, regarding online shopping, listed most often among all survey and interview respondents were Internet security, distrust of retailers, difficulty in returning items, and slow delivery of items.
- The most appealing methods of online shopping among interview respondents were price comparison, portals, and auctions.
- Current Unique Selling Points (USPs) of the most popular US and UK sites include e-cards, community sections, shopping carts, and incentives for visiting retailers.
- The price of items, ease of use, web site appearance, and personal accounts were the features that were most popular, among all interview and survey respondents when selecting a favourite web site.
- The most popular products to shop for online, among interviewees and SPSE survey respondents, were items available at music, book, computer, and travel sites.

Using these results, we were able to formulate conclusions and make recommendations to ShopSmart regarding methods that might be employed in the addition of new USPs, in maintaining current customers, and in attracting new customers. The following recommendations were made regarding modifications of existing USPs found on

e-commerce web sites. **We recommend the addition of one of these existing USPs to add an identity to ShopSmart's web site.**

- **Auctions** have grown in popularity and were found to be appealing to both the SPSE students surveyed and the interviewed UK residents.
- Data from our interviews and background research showed that UK residents preferred social methods of shopping. One method to increase consumer interaction on ShopSmart's web site is through a **community section**.
- Our research also showed that e-mail was the primary reason that UK residents used the Internet. **E-cards** would take advantage of a technology already familiar to consumers, while also giving them a reason to come back to ShopSmart.
- Giving consumers **incentives for visiting retailers**, a method used by mypoints.com in the US, would also give consumers a reason to make return visits to ShopSmart site.

To maintain their current customer base, we recommend that ShopSmart offer its customers a personal account to give them a specific reason to return to ShopSmart's web site. By adding a personal account, ShopSmart can retain the customers that they may potentially lose when those customers are directed to a different web site by ShopSmart.

We also recommend giving consumers the option to write reviews of products and retailers. This would provide consumers with additional interaction between themselves and the ShopSmart web site while providing another source of impartial information about the retailers listed on ShopSmart's web site.

To attract new customers, ShopSmart must address the needs and concerns of non-users that prevent them from utilising e-commerce. **To address privacy concerns, we recommend that ShopSmart add a privacy policy, which states the degree to which consumers can trust the retailers listed with ShopSmart's portal and price**

comparison. We also recommend that ShopSmart require its retailers to include prominently placed security and privacy policies, and that any retailer lacking this feature not receive the highest shop review ranking from ShopSmart. With this addition, ShopSmart will take a step towards addressing the most important concerns of consumers.

As of April 2000, ShopSmart listed fourteen product categories. However, only four of these categories were available through the price comparison service. **We recommend that price comparisons be added in the areas of computers and travel, as our research has shown that British consumers often purchase products in these categories.**

The research we conducted and the data that we analysed strongly suggested that the successful implementation of any of these recommendations would help ShopSmart to achieve its goal of attracting new users while maintaining the loyalty of their current customers and growing as a company.

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Chapter One: Introduction

Towards the end of the 20th century, technology grew at an astounding rate; one of the primary vehicles that allowed for this expansion of technology was the Internet. The Internet is a technological resource that makes it possible for computers all over the world to be connected to each other in order to share information. The Internet has many uses, including communication, research, and business. Moving into the 21st century, the Internet is becoming increasingly popular. In particular, businesses and entrepreneurs are discovering the Internet's value as a profitable channel through which their products and services can be advertised and sold.

Conducting business over the Internet is known as electronic commerce, or e-commerce. E-commerce allows consumers to access businesses and retailers around the world directly from a computer. Retailers maintain web sites offering consumers various methods of purchasing products online. These web sites are able to attract consumers by offering more services and products than consumers find in traditional retail stores. For instance, consumers are able to purchase items regardless of the time of day. The wide reach of the Internet allows businesses to market themselves to consumers that they could not necessarily reach through more traditional methods of retail such as street markets or shopping in stores.

A leading company in the e-commerce industry in the United Kingdom (UK) is ShopSmart Limited. Based in London, England, the company was founded in 1997 as Focus Digital Limited. The initial goal of the organisation was to create a one-stop site for consumers to shop online. On April 19, 1999, ShopSmart Ltd introduced a technological

concept called a price comparison agent on their web site at ShopSmart.com. Price comparison agents are utilities that help consumers save money by allowing consumers to search for and find the lowest price for a product among the retailers who participate in the comparison program. ShopSmart Ltd charges retailers a fee to participate in the price comparison program. PriceScan, originally named BargainFinder, was the first price comparison agent available in the UK. The addition of PriceScan to ShopSmart Ltd's web site has helped ShopSmart Ltd to become the comprehensive guide to buying online that the founders envisioned.

In addition to the price comparison agent, ShopSmart Ltd's web site also includes a retailer directory. A retailer directory is a list of e-commerce retailers sorted by product category. This feature allows ShopSmart.com's users to locate several different retailers of the specific products that they are interested in purchasing. ShopSmart does not charge retailers to be listed in the directory provided each retailer's web site meets certain criteria, including providing contact information as well as ensuring secure ordering on the site.

Due to industry expansion, ShopSmart Ltd must meet and anticipate consumer demands to avoid losing its status as an industry leader in the UK. In order to meet consumer demands, ShopSmart Ltd must continue to be aware of new services and features available to consumers on other e-commerce web sites. The goal of this project was to provide recommendations to ShopSmart regarding effective services and utilities that could be successfully implemented on their web site.

The approach that we took was a comparative analysis of United States (US) and UK e-commerce sites, accompanied by a comparison of e-commerce usage among consumers in the US and the UK. Forrester Research estimates that the gap that currently

exists in e-commerce between Europe and the US will decrease by 2002. Predictions of areas within e-commerce that could potentially become successful in the UK can be made better by understanding cultural and technological differences between the US and the UK. Internet usage and mobile phone usage are increasing in the UK and the US respectively. While the US leads the UK in terms of per capita Internet usage, the UK leads the US in mobile phone usage. Although the technological differences are likely to decrease over time, the culture within the countries may not change as quickly, if at all. Understanding the factors that motivate residents of both countries to utilise e-commerce may provide insight into which areas of e-commerce are likely to grow.

An objective of this project was to conduct a comparison of existing e-commerce web sites in terms of the services and utilities they provided as well as the ease with which desired items could be purchased. Web sites in the US were analysed in addition to sites based in the UK. An analysis of the services and utilities provided by ShopSmart's web site was also completed. We compared their site to other sites included in our analysis to determine differences between the sites. Surveys were conducted of student users of e-commerce enrolled in technical programmes at accessible universities in both the US and the UK. Conducting surveys among similar populations in each country allowed us to make cultural comparisons regarding Internet and e-commerce usage patterns among the student target populations. In addition, interviews were conducted of UK residents who used Internet cafés in central London. The purpose of these interviews was to gain a better perspective of the familiarity and usage of e-commerce among a broader population of UK residents and, in particular, those residents who were familiar with using the Internet.

From the data obtained through web site analyses, surveys, and interviews, the effectiveness of implementing each service and utility on ShopSmart's web site was assessed. Specifically, the feasibility of adopting features unique to the US was examined. Based on these findings, recommendations were made to ShopSmart regarding possible changes to their web site. These recommendations were aimed at providing information that would help ShopSmart to maintain and attract new customers, while maintaining their aim of providing an impartial online shopping guide for consumers.

Chapter Two: Literature Review

The literature review is a tool to organise the background research that was completed and to convey the focal points that have contributed to this project. The technological research for this project focused on the Internet, the growth of e-commerce, new technologies associated with the Internet, Internet security concerns, and the design of web sites. Another area of research focused on understanding cultural differences between residents of the United States (US) and the United Kingdom (UK) that may affect commerce in either area and methods of shopping used by residents of the UK. The results of this research were used to gain a greater awareness of electronic commerce and its related issues.

2.1 The Internet

The Internet is a worldwide computer network that can be accessed by any person with a computer and an appropriate connection. Some of the most popular uses of the Internet include conducting business and research, as well as sharing information between remote computers. The Internet was created as a computer network that enabled safe communication. The first lines were established in the 1960s for military purposes (Barrett 15). The subsequent forty years saw the introduction of an extensive range of purposes for Internet usage. As of the year 2000, 248 million people – connected to over 240,000 networks in over one hundred countries – were estimated to be using the Internet (Kalakota 32). This demonstrates the remarkable popularity the Internet has achieved throughout the world.

2.1.1 Growth and Usage of the Internet in the US and the UK

As the number of people with access to the Internet increases, a wider reaching information market is being created. Between 1990 and 2000, the Internet not only became a true mass medium, but also a major new sales channel in the US. As of the year 2000, over thirty percent of US adults were Internet users (<http://www.nua.ie>). In the book *Electronic Commerce: A Manager's Guide*, Ravi Kalakota states that the Internet has cultivated a new set of online retailers that are changing the way Americans behave, explore, buy, and relax (32). He believes that the wave of growth occurring in the US will move into other cultures as well. One of the most notable areas of growth is in the UK; this is most likely due to the many similarities between the US and the UK, including a common language. However, Kalakota notes that the usage of the Internet has been much slower to become popular in the UK than in the US (33).

As of December 1999, the digital media research company MMXI reported that the number of American homes with access to the Internet had reached about 61 million, compared with only 7.8 million British homes (MMXI 3). Proportional to the relative populations of these countries, four times as many Americans can access the Internet in their own home. The same study showed that of the ten web sites that UK residents visited most often, seven were US based. Among the ten most popular British sites were Yahoo!, AOL, MSN, Microsoft, Netscape, Geocities, and Amazon (MMXI 3). A different study released by Reuters, Inc. on January 18, 2000 revealed that the products most popular with consumers in the UK were books, CDs, and computers. The five most popular online shopping sites among British Internet users included two US sites: Amazon and

Ticketmaster (Moreton 4). These two studies demonstrate the influence that US based sites have had in the UK.

Although the Internet has not gained popularity as quickly in the UK, the survey conducted by MMXI demonstrated that the amount of time Europeans spend online each month is drawing nearer to the amount of time spent online by Americans. The study showed that the average British Internet user spends four hours online per month, while the average American user is online for about five and one half hours per month (MMXI 4). Internet service providers in the UK began offering free service in 1999; as a result, Internet access in the UK has increased. Before 1999, the phone bills that Internet users were incurring due to usage of the Internet were relatively high. For this reason, British users tended to visit particular sites for a specific purpose rather than spend time on the Internet without an identifiable objective, as many Americans do (Elmer 2). These focused visits have limited the British Internet users' knowledge of Web resources (Elmer 2).

From 2000 to 2004, many experts predict a continued increase in Internet usage within the UK. According to a study conducted by Forrester Research, thirty-three percent of Europeans, or 60 million people, will have access to the Internet in the year 2003, compared to the current figure of nineteen percent (Powell 3). This study suggests that the Internet will continue to grow and could eventually become as major a market in the UK as it has in the US. With the Internet's growth, new methods of using the Internet were created; as of the year 2000, one of the major uses of the Internet is as a means of commerce.

2.2 Electronic Commerce (E-commerce)

Electronic commerce, or e-commerce as it is widely known, has become one of the most exciting trends in business. E-commerce can be defined as the exchange of information, goods, services, and payments over computer networks such as the Internet. Kalakota estimates that the rise of e-commerce will be similar to the rise that other technologies have experienced, including radio in the 1920s, television in the 1950s, video players in the 1970s, and personal computers in the 1980s (Kalakota 33). Corporate executives and consumers alike have become involved in the Internet, taking advantage of its uses (Kalakota 33).

Kalakota believes that the advantages of this relatively new technology are so numerous that many established companies in the banking, entertainment, telecommunications, and manufacturing industries are being left with no choice but to move onto the Internet and reorganise in an effort to become leaders in the online industry (Kalakota 15). He notes that history has shown that large gains in productivity and market share have taken place when organisational restructuring has gone hand-in-hand with technology (Kalakota 15). To realise how e-commerce will affect existing industries in the UK, e-commerce's usage on the Internet must be understood.

2.2.1 Growth of E-commerce in the UK

Since the end of the 1990s, there has been a significant increase in the number of people using web sites for commercial purposes; there has also been an increase in the number of web sites offering e-commerce. A study completed by Fletcher Research in January 2000 stated that as of the year 2000, just less than one-third of the current 15

million British Internet users had purchased goods online. British users were shown to have been using the Internet to purchase products, as well as to research products that they might buy in stores (Savage 3).

Reuters, Inc. released the results of a survey conducted on January 18, 2000 questioning British citizens who had shopped online regarding their opinions of the services they encountered while shopping online. The study revealed that money spent by online shoppers in the UK tripled in 1999, making Britain second only to the US in revenues gained from e-commerce (Moreton 2). The study also showed that ten percent of households in the UK shopped online in 1999, and predicted that British Internet shopping was going to triple again by 2002.

A study released in December 1999 by Forrester Research states that electronic shopping would become even more commonplace in the future as it demonstrates tremendous growth potential (Powell 2). A planned growth rate of at least one hundred percent from 2000 to 2002 is included in European plans to bridge the e-commerce gap between the US and Europe. Expectations are that e-commerce will eventually make up at least six and one-third percent of total European trade by the year 2004, with 100 million Europeans shopping online (Powell 3).

2.2.2 Methods of E-commerce

There are several methods of e-commerce available to consumers on the Internet. One such method is purchasing products directly from a *retailer* or large store. Many retail stores have web sites at which consumers can select and purchase products. On a

number of these sites, customers can establish an account so that during repeat visits to the store's web site, their account and ordering information need not be re-entered.

A common feature found on retailer web sites is an *electronic shopping cart*. A shopping cart is a piece of software that allows consumers to select merchandise, review what they have selected, and make any necessary modifications before purchasing the merchandise. Shopping carts can be sold as independent pieces of software so companies can integrate them into their own unique online solution, or they can be offered as a feature of the service that creates and hosts a company's e-commerce web site (Georgia *Work* 1). Consumers may select several items to purchase, which are all saved in the shopping cart until they are ready to check out, or complete their order.

Some manufacturers and brand name companies do not sell their products directly over the Internet; however, many of these companies offer product and company information on their web site for consumers. In addition, most companies provide consumers with a method to locate a vendor of their products. One method of locating products is by searching for a local retailer; consumers supply their geographical location and the web site displays a list of retailers in the consumer's area (<http://www.divedacor.com>). Another search technique used on some companies' web sites allows consumers to locate Internet vendors selling the desired product. This search returns a list of retailers that offer the company's product online.

In her article *Pay Nothing- Make a Lot*, Bonny Georgia writes that *catalogue shopping* on the Internet is very similar to shopping from a catalogue sent to a consumer's home (Georgia *Pay* 1). Major catalogue vendors have web sites on which a complete electronic version of their catalogue is available. Online catalogue shopping usually offers

many of the same features encountered when buying from a retailer online, including shopping carts and consumer accounts (2).

A method of e-commerce that is gaining interest among online consumers is *auctions*. Auctions on the Internet work similarly to standard auctions, except that items in an online auction are bid on for an extended period. Consumers post bids on the auction's web site, and if they are not outbid within a specified period, they win the auction and purchase the product for the amount specified by their bid (Mollman *Standard 1*).

Auctions can be conducted through either business to consumer or consumer-to-consumer transactions. Business to consumer auction sites offer products directly from manufacturers and allow consumers to bid on them; consumer to consumer auctions are auctions in which a consumer bids on an item that is being sold by another consumer. In consumer-to-consumer auctions, the seller controls the starting bid, the incremental bid, and the amount of time that bids will be accepted (2).

Similar to auctions, *reverse auctions* are an e-commerce method whereby consumers post advertisements for products they are looking for, as well as a price that they are willing to pay. A business that possesses the posted item can then accept or reject the offer from the consumer. Through this information, consumers or businesses that are looking to sell products may find a potential buyer (Mollman *Reverse 1*).

Another form of e-commerce is *group buying*. The principle of group buying is that several consumers who want to purchase the same item can assemble with one another to benefit from a substantial discount, as the power of the group can garner considerable savings (Mollman *Group 1*). These group purchases are time-limited buying opportunities in which the price of the item decreases as more people decide to purchase the product.

Group buying relies on consumers cooperating with each other to drive prices down, instead of competing to drive prices up, as would likely happen in an auction (Mollman *Group 1*).

Another method that saves money for consumers while they are shopping on the Internet is *price comparison-shopping*. Price comparison agents are software programs located on e-commerce web sites that search for a product specified by the consumer. Consumers indicate to the comparison agent what product they are looking for, and the comparison software searches the available databases of online retailers. The search returns a list of different retailers that offer the specified product and the price each retailer is charging. A price comparison agent allows consumers to locate the lowest obtainable price for the product they have specified (Walker 1).

With so many different venues of e-commerce available, businesses are taking advantage of the prospect of increasing revenue through these different media. E-commerce provides a unique opportunity for entrepreneurs to expand their business prospects; in addition, existing businesses are putting themselves online to become available to a larger group of consumers (Moreton 2).

2.2.3 British E-commerce User Types

A Reuters survey released in January 2000 detailed the characteristics of British e-commerce users. Over two thirds of British online shoppers were aged under forty (Moreton 2). Over half of the people who shopped online had an annual household income of over thirty thousand pounds, and most had a high education level. The study also showed that over two-thirds of online shoppers were men (Moreton 2); although the

breadth of Internet usage by women has increased, the Reuters study indicated that men were more apt to use the technology as it was introduced (Moreton 3). A similar study, released by Fletcher Research in December 1999, showed that British men were also more likely to purchase items online; the study reported that thirty-six percent of British male Internet users had purchased at least one item online, compared to only twenty percent of British female Internet users (Savage 5).

BMRB International released a study in October 1999 regarding the attitudes of British Internet users towards online shopping. The study was completed to address the behaviour and attitudes of these users towards branding, product sourcing, delivery, quality of service and the general convenience of e-commerce applications (BMRB 2). It was also used to show that competitive prices, convenience, and a wide range of available items were the driving forces behind interest in Internet shopping (BMRB 2).

The results of the survey by BMRB showed that British online shoppers tended to fall into six different categories. The first of these categories is the *realistic enthusiast*. These persons were found to represent fifteen percent of the online market in the UK, and are prepared to spend more than 500 pounds per month in online transactions. They purchase from an unknown company, and believe that convenience when shopping online is more important than price (BMRB 3). The next group fell into the category of *confident brand shoppers*. This group represents sixteen percent of the market and spends an average of 275 pounds per month. The main reason these people prefer to buy online is an implicit trust they share with established brands (BMRB 4). The next group of people were categorised as the *carefree spenders*. These people represent fifteen percent of the market and have no ties to certain brands; they tend to purchase without seeing the product

they buy (BMRB 4). The next group, the *cautious shopper*, represents twenty percent of the market. These consumers prefer to view an item before its purchase and are extremely unlikely to purchase from unknown retailers (BMRB 5). The *bargain hunter* represents sixteen percent of the market, and is motivated primarily by price. Those belonging to this group are not discerning about which web site they buy from, and are not prepared to spend more than fifty pounds per purchase (BMRB 6). The last type, the *unfulfilled shopper*, represents seventeen percent of the market and is unimpressed by the entire process of online shopping. This group tends to find it difficult to locate what they are looking for online; they will not buy without seeing the product, and will not buy from an unknown company. They also believe that delivery processes are insufficient (BMRB 7).

2.2.4 Disadvantages of E-commerce

Although each e-commerce user may have unique issues regarding online shopping, research has shown that there are a few areas that e-commerce in general can be improved in. While many positive aspects of Internet shopping exist, there is room for improvement (Hill 6). A study completed by CNET addressed how consumers felt about the appearance of shopping sites and the ease with which they were able to complete transactions. The results of the survey indicated that customers felt some sites could be improved upon with updates in five areas of service.

The first of these improvements involved *enhanced graphics*. The survey determined that consumers in search of items for which they would be paying a sizable sum desired to see that item. Frequently, the photos and graphics that were used incorrectly portrayed the item or were unclear. For example, many sites displayed pictures

at a size no bigger than a thumbnail (Hill 3). A method of selling more products revolved around consumers being able to see the products they wished to purchase.

Another disadvantage of the Internet is *misleading advertisement* of how many different products are actually listed within certain directories. Some sites are filled with categories of products such as books, magazines, CDs, etc., but in reality, these sites do not have much to offer in those subdirectories. For example, one home improvement site was found to have an abundant selection in tools and lighting but contained only one item in the patio furniture department (Hill 4). Such misleading advertising goes a long way in shaping customers' opinions regarding companies (Hill 4).

Other people seem to be put off by *useless and misspelled text*. These customers are not drawn in by fancy slogans or unrealistic claims (Hill 5); they desire an accurate description of each product. These consumers like to be made aware of the relevant facts about each item; however, facts in excess of those that are essential are viewed as undesirable (Hill 5).

Another complaint of consumers concerned the *checkout procedure* used by certain companies when a purchase was made. Many consumers find the process time consuming and somewhat confusing. The amount of information that some sites require the purchaser to provide can cause confusion and scepticism among potential buyers. Online buyers want to see improvements that increase the ease with which they make online purchases. This includes the ease of buying a product, adding a new item, or starting the searching and purchasing processes over (Hill 6).

The fifth item consumers expressed an interest in was *e-mail confirmation*. This confirmation would detail the products that were ordered as well as other information such

as shipping date. The lack of confirmation when ordering products online is a growing concern. Not receiving a confirmation adds to the confusion encountered when ordering products. One customer told a story about ordering a ski rack online with no confirmation number. This customer was not sure if the transaction had gone through until an employee from that same store called to ask about what kind of ski rack was ordered. This information had apparently only been filed electronically, meaning that the company had not been keeping good track of customers' orders.

In a study conducted by Fletcher Research in December 1999 regarding the reasons consumers do not buy products online, the biggest concern for shoppers was their *guaranteed privacy* and *total credit card security* (Savage 2). The study showed that only eighteen percent of British people would trust online vendors with their credit card details, and half of those interviewed were unhappy with using their credit card to shop online (Savage 2). Other reasons shoppers were reluctant to buy products online included *high shipping costs* and *preferred personal sizing* in clothing. Consumers also noted that they wanted to see improvements made in areas such as supermarkets, which had not established their presence on the Internet (Savage 4).

2.2.5 Short Message Service

As of the year 2000, there are more mobile phones in use worldwide than personal computers, and predictions are that the market for mobile commerce will be worth \$66 billion by 2003. This creates a vast new potential channel for e-commerce. Estimates by Sonera Ltd. state that by 2003, over 800 million mobile phones with the capability to use the Internet will be in use worldwide. Additionally, it is believed that by 2004 there will

be more mobile handsets than there are televisions (<http://www.cellular.co.za/radicchio.htm>).

New technologies are being developed to attract consumers to online shopping, one of which is short message service, or SMS. SMS is rapidly increasing in popularity in the communication industry. Using the service allows text-based messages of up to 160 characters, comprised of words or numbers, to be sent between computers and mobile phones. Non-text based messages can also be sent in binary format. SMS makes access to the Internet possible over a mobile phone (Smith 1).

A message sent with SMS does not travel directly from sender to recipient. En route to its final destination, the message is handled by an SMS Centre, which is supported by a mobile phone network. Due to the way that these messages travel, it is possible to send and receive messages while also conducting a voice, data or fax communication on one's mobile phone. Voice, data, and fax calls assume a dedicated radio channel for the duration of their transmission. However, short messages sent with SMS use the signalling path (<http://www.mobilesms.com>). For this reason, message senders will not get a "busy signal" while transmitting a message. A unique aspect of the SMS is the ability to give the sender a message confirmation that the sent message was successfully received. This provides an advantage over pagers because users can be assured of delivery (Smith 1).

As the demand for SMS increases, so do the possibilities for its use. To avoid the 160-character length limitation, methods have been developed to send multiple short messages. SMS concatenation involves stringing together several messages, while SMS compression allows more than 160 characters to be included in a single message (<http://www.mobilesos.com>).

Use of SMS requires some options that are available as an addition to standard mobile phones. The mobile telephone network that a user subscribes to must support SMS, and SMS must be enabled for each user individually. Some mobile networks provide this service automatically, and others require payment. In addition, the mobile phone of the network that the user subscribes to must be configured to support SMS. Therefore, not all mobile phone users can take advantage of SMS. In addition, senders can only send messages to mobile users that meet all of these qualifications as well. However, messages can also be sent to fax machines, personal computers, and Internet addresses (Smith 1).

SMS has proven its usefulness for applications such as vehicle positioning and e-mail services. In addition to these existing applications, a number of new applications have emerged. SMS is now used for interactive chatting, telephone ring tones, and electronic commerce applications. In order to use this SMS technology, a protocol must be developed to interface to it (<http://www.mobilesms.com>).

2.2.6 Wireless Application Protocol

With the growing number of applications and content on the Internet, new ways to access the Internet have been created. One of the new ways to access the Internet is through a new technology known as WAP. A number of mobile phone provider networks worked together to develop the Wireless Application Protocol, or WAP. Motorola, Nokia, Ericsson, and phone.com developed WAP as a standard for filtering information from the Internet such that the information can then be used in mobile communications. The purpose of WAP was to make the content of the Internet available through mobile

terminals. WAP brought together two of the most rapidly developing industries: wireless technology and the Internet (<http://www.mobilewap.com>).

WAP was devised to be an all-inclusive protocol; it can be used with any mobile phone that has at least a one-line display. A number of wireless services can accommodate WAP, including SMS, data, unstructured supplementary services data (USSD), and general packet radio service (GPRS). Input can come from keypads, keyboards, and touch-screens (<http://wap.colorline.no/wap-faq/>).

The aspect of WAP that makes it uniquely attractive is the technology it utilises. The wireless protocol requires an HDML (Handheld Device Markup Language) microbrowser, which when added to mobile phones can convert the requested information into a form that can travel through mobile phone networks easily. This process makes information required for WAP applications available. The value of WAP is that it has been designed such that any information or application that is required during the use of the microbrowser is not stored in the phone but on temporary WAP servers (<http://www.mobilewap.com>). Therefore, the networks handling WAP are improved in an attempt to use as few resources as possible within the handheld device (<http://wap.colorline.no/wap-faq/>).

WAP has been evolving for some time. Phone.com, now a member of the WAP Forum that created the standard protocol, took the first step in creating a relevant version of the standard HyperText Markup Language (HTML) used in web site development. The use of phone.com's HDML was a way to transmit Internet information through mobile phone networks. The technology initiated by phone.com was integrated in the present WAP protocol (<http://www.mobilewap.com>).

The process for a handheld device user to obtain information is simple at the user end. The user uses the microbrowser within the device to request either information or a service. The information returned regarding the request would then be sent to the user's device on the display screen (<http://www.cellular.co.za/radicchio.htm>).

On the server side, the process is slightly more complicated. The request that the user made using his or her microbrowser is passed to a WAP Gateway server. The information pertaining to the request can then be retrieved from an Internet server, either in HTML or in Wireless Markup Language (WML). Information in HTML format would have to be filtered while passing through the WAP server to translate it to WML before it reaches the user's device so that it provides meaningful information in response user's request (<http://www.mobilewap.com>).

Despite the advances, there have been some problems in the development of WAP. For instance, configuring WAP-compliant devices for new WAP services is a complex process, during which twenty or more parameters must be addressed (<http://www.mobilewap.com>). An increased number of WAP compliant phones were expected to be available by the end of the first quarter of 2000. More importantly, analysts predict that without specific tariff initiatives, the cost of using WAP will be undesirably high (<http://www.cellular.co.za/radicchio.htm>). The tendency will be for users to spend longer amounts of time online as they take advantage of the interactivity of the WAP services (<http://wap.colorline.no/wap-faq>).

In response to the issues described above, there has been an increase in the number of systems competing against the WAP. The SIM Application Toolkit is already an extensively supported competitor protocol. The Mobile Station Application Execution

Environment (MexE) addresses the problems experienced by WAP (<http://www.mobilewap.com>).

2.3 Security Concerns on the Internet

Using the Internet for commerce is a novel idea for many people. The ability to buy products online is a convenience for those who do not wish to shop using a traditional face-to-face method. One does not have to leave the computer to make a purchase online, because the “store” is always open and long lines are not a concern (Attaran 244).

Unfortunately, this added convenience is somewhat negated for many people by the larger concern of information and communication security. In a 1999 survey of consumers and businesses regarding electronic commerce, sixty-one percent of consumer respondents cited communication security as an apprehension they faced when dealing with e-commerce (Furnell 375).

The concerns of consumers pertaining to these issues must be recognised and addressed to diminish the associated fears and trepidation. Trust among all participants in the process of online buying is vital. Only when this trust is established can the Internet be fully accepted as a feasible alternative to traditional shopping practices (Furnell 373).

2.3.1 Risks and Vulnerability Associated with Online Transactions

The fears of consumers regarding Internet security are not entirely unfounded. As the number of uses for the Internet grows, the number of abuses increases as well. An extensive amount of financial and commercial information traverses the Internet each day; the potentially valuable nature of this data lures competitors, frustrated customers, and

others to attempt to obtain this information and use it to their advantage (Spinellis 1). Other private pieces of information that attract these perpetrators are e-mail addresses, personal addresses, and social security numbers (Baker 352).

Fraudulent activities are taking place on the Internet in the realm of e-commerce. A 1998 survey by the UK Audit Commission stated that of all reporting organisations, forty-five percent had experienced some form of computer fraud (Spinellis 2). Internet usage currently accounts for a meagre two percent of the total number of credit card transactions. From this two percent arose fifty percent of all the disputed bills (Furnell 274).

2.3.2 End User Privacy

The way information is relayed over the Internet is in itself a hindrance to the privacy of e-commerce applications. The World Wide Web (WWW) runs on a protocol called HyperText Transfer Protocol, or HTTP. A restriction of HTTP is the inability to maintain status between consecutive operations; each request sent to a web server during an operation using HTTP has no memory of the request that preceded it in the transaction. For this reason, web applications that require multiple data exchanges to complete a single transaction can be tedious on the server's side (Ghosh 34).

A potential solution to this problem, the "cookie", has induced problems of its own. A cookie represents the most current state of a transaction. Each HTTP request could be attached to a cookie that is read and processed by the web server to determine the current, as well as the next stage of a transaction. Cookies are stored on the web user's local hard disk (Ghosh 34).

In practice, web sites are often the users of a cookie. Based on the data that a cookie stores, web sites can collect usage information. Cookies provide information such as the number and date of prior visits to the site, which pages the user frequented during a visit, and from which site the user came to the current site. To some, this kind of omniscient record of the user's actions constitutes a breach of privacy (Ghosh 34).

Cookies can also be used for authentication purposes. This is the only aspect of cookie use that is directly evident to the end user. When a user has authenticated him or herself on a web site, a cookie can be sent which will verify that authentication for a certain period following the initial login. A problem arises when one realises that in standard authentication sessions, the cookie is not encrypted. The cookie can be captured when the web site is accessed during the authenticated period. The perpetrator can then use the cookie to access the web site.

Some web servers have averted this security risk by requiring that the Internet Protocol (IP) address, an identifying number unique to all computers, match the authentication information corresponding to each end user (Ghosh 175). Another means to avoid potential violations of privacy by cookies is provided by some web browsers, which offer the option to disable the transfer of cookies. The user can receive a warning that a cookie is being sent, and in some cases, the user can require a confirmation prior to the transfer of the cookie.

2.3.3 Security Already in Existence on the Internet

Consumers all over the Internet are questioning the effectiveness of security measures in protecting themselves from violations such as unauthorised credit card usage

(Dinnie 114). Numerous methods and technologies exist to protect information as it is transferred from party to party during online dealings.

One of the most recognised protocols used to secure online transactions is the Secure Sockets Layer (SSL) technology developed by Netscape (Furnell 373). Encrypted messages and authentication services are offered by SSL; the process by which SSL secures a transaction requires both end parties to recognise and communicate with each other. A level of security is decided on and from that point forward, all data can be transferred in an encrypted form (Furnell 373).

A second approach was explicitly developed with e-commerce in mind. The major credit card companies devised the Secure Electronic Transaction (SET) standard to deal with some of the most pressing security issues of e-commerce. SET provided the use of digital signatures, special purpose certificates, and privacy of order and payment statistics (Furnell 374). The digital certification was an aspect that none of the current security protocols addressed. These certifications connect the consumer, as the holder of a major credit card, and the online retailer with a financial institution. In this way, all parties could be assured that the online transaction was processed in a manner similar to the way credit card purchases have been processed for some time now (Furnell 374).

Another technology developed to provide information security is electronic logos. The concept behind an electronic logo is for an outside, unbiased and respectable "assurance provider" to give a web based retailer a logo signifying the provider's approval. This approval is dependent on the seller meeting certain security and accountability criteria. The presence of the logo is meant to instil trust in all parties that data will remain secure and that the vendor is valid. The provider is likely to give the details of the

guarantee on his or her own web site (Baker 352). According to Baker, accounting organisations in the UK are planning to participate in the WebTrust logo assurance service that was developed by the American Institute of CPAs (AICPA) and the Canadian Institute of Chartered Accountants (CICA) (352). WebTrust is a particular assurance provider that assumes users of e-commerce want to know that they are doing business with a genuine company, and that consumers want to know that they will receive the items they desire in a timely fashion for the price they agreed to pay. WebTrust compels retailers to present to the consumer the option of keeping all information exchanged between the parties involved private. This encompasses the retailers' pledge that, to the best of their knowledge, information cannot be intercepted during the transfer (Baker 353). Other technology developed toward this end includes trusted third party (TTP), certification authority (CA) and, firewalls (Furnell 374).

2.3.4 Refined Options for Internet Security

Spinellis has speculated that perhaps, no matter the level of effort that is invested in this issue, the total security of online transactions is simply not achievable (2). Due to the complex nature of e-commerce transactions, compromising the safety of information through any one part of the process can lead to a total security breakdown (Ghosh *xiii*). Yet, thirty percent of companies taking part in online commerce have no official guidelines concerning information security (Spinellis 2). Even more astonishing is that only fifty-five percent of companies make budgetary allowances to develop policies or implement new technologies to increase information security (Dinnie 112). Currently no uniform system exists to provide universal security (Dinnie 116).

2.4 Web Site Design

In addition to providing security, online companies must provide a web site that appeals to their target audience. According to Abels, web sites should be able to provide users with the information they desire in a timely fashion (255). Abels states that the most important aspects of web sites are, beginning with the most important: use, content, linkage, structure, search, and appearance (255).

2.4.1 Use of a Web Site

The easier a web site is to use, the more effective that web site is likely to be in terms of providing users with the information they want. With large web sites, and even large pages, navigation becomes a critical aspect in retaining the user. Incorporation of links and buttons can provide an overview of the web site making the web site easier to use. Frames can help users navigate a large page by automatically scrolling to the location of desired information. These types of tools provide a quick link to the information users desire and can lead to a decrease in the amount of time users spend searching for information (Abels 44).

2.4.2 Web Site Content

As stated above, effective web sites provide the information that users are seeking. Although many web sites are geared towards attracting specific user groups, the audience a web site receives may be quite different from the intended audience (Spool 19). According to Spool, web sites must provide all users with useful and current information relevant to the web site (20); web site information that is unique provides novelty for the web site.

When the contents of the web site do not appeal to users, they are likely to leave the site (Abels 40). According to Abels, Internet users tend to prefer multiple short pages to a single, long page that requires scrolling (42). In addition, providing users with superficial or repetitious information does not satisfy the users' needs and is unlikely to attract repeat visitors (Abels 42).

2.4.3 Linkage Within a Web Site

Navigation between pages within a web site is aided by the use of links. Good links add structure and organisation to a web site, while integrating all of the information available on the site (Abels 44). Users select links based on their expectation of the contents of the page ahead; effective links provide descriptions of the content on the page the user is about to see. Since people can be inclined to skim web sites, embedded links and links within sentences are not generally as attractive. This is because the destination of the link is not readily displayed to the user, possibly causing them to skip over the link altogether (Spool 43).

2.4.4 Structural Aspects of Web Site Design

The layout of a web site is critical because it plays a major role in determining what users perceive about the creator of the site. Abels states that users desire web site structures that are logical to them (43). The home page should provide users with a clear indication of the structure of the web site (Abels 43). Many web sites favour a hierarchical approach; in this case, the home page can lead users down different paths to find the desired information. However, if the user gets lost along the path, the web site will have

failed to provide the user with information that was needed. One method to avoid allowing users to get lost within the web site is to provide them with an indication of where they stand in the web site's structure (Spool 27).

2.4.5 Incorporation of Search Tools

Many web sites provide users with a search tool to locate desired information more quickly and easily. Users desire an effective search tool that is capable of fulfilling their needs. If users are unable to understand how the search tool works or how to interpret the results, the search tool has not been effective. Instead of saving time for its users, the search tool has either increased the amount of time users spend finding information or forced users to exit because the information is not available (Abels 45).

2.4.6 Implications of Web Site Appearance

The appearance of a site can range from the general layout of the site to the information that is included. The use of graphics, tables, text, and advertisements must blend to provide users with an acceptable environment in which to conduct their business. People tend not to frequent sites that they find annoying (Abels 44). To be successful, web sites should appeal to a number of users.

A 1998 study was conducted of people searching for information on the Internet, and two findings were of key interest. The more readable a site was, the more users found the site to be authoritative, clear, complete, satisfying, useful, and successful in conveying the desired information. The less readable a site was, the more users found the site overpowering and over-detailed (Spool 70-1). In addition to the appearance of a web site,

addressing and providing services relevant to the general habits of the consumers that frequent that site was also shown to be important for successful e-commerce sites.

2.5 European versus American Culture

As discussed in Section 2.2.1, e-commerce use in the US far exceeds use in the UK. Reasons for this difference could be technological as well as cultural. A vast number of similarities as well as differences exist between the cultural habits of Americans and Europeans. Mougayar writes that although American trends were originally based on European attitudes and tendencies, the emphasis has shifted (21). The present situation indicates that trends created in America have the ability to affect other countries and cultures (21). Ranging from clothes to music, the American influence is evident in industries all over the world. However, the impact of American innovation has been greatest in technological areas, and the continual development of technology is perpetually changing the lives of the people who use it regardless of their location (Mougayar 24).

2.5.1 Creation of Trends

As technology becomes an increasingly large part of their lives, residents of Great Britain are adapting. Mougayar states that as is the case in many cultures, residents of the UK do not have large amounts of free time (32); therefore, British citizens tend to make the most of technology that provides convenience. Mougayar also states that the adaptation of technological trends in the UK can be slow because it is the tendency of some British people to use the past to determine what they will do in the future (40); British consumers often retain old habits, as they have become accustomed to those

traditions. However, de Mooj writes that the convenience that new technology provides can far outweigh the inertia of cultural habits (273).

2.5.2 Adoption of New Technology

Though founded by Europeans, America has developed a cultural identity of its own. Mougayar writes that the technological and economic resources available in America enable residents to develop and take advantage of the new trends that shape the world. Mougayar also states that the majority of Europeans prefer to study, analyse, and discuss theories, whereas most Americans tend to learn from failures and move on (38). As a more practically oriented culture, Mougayar argues that Americans are not as apt to consider the cultural or social matters associated with technology (38). Thus, American people have the potential to benefit from a successful application sooner than British people, while also running the risks of suffering the consequences (de Mooj 271). Though not all inventions are successful, the entrepreneurial spirit has allowed America to remain on the cutting edge of services that aid people in many aspects of their lives (Mougayar 40); one area in which America has continually created new trends is shopping.

2.5.3 Trends in Shopping

The retail industry has continually shaped consumers' lives with its trends. With their desire for convenience, Americans have been among the first to consider new methods of shopping. The first major change in shopping was the transformation of shops from small, product-focused retailers to large stores carrying items in numerous categories. With the continued decrease in leisure time for the working consumer, providing

convenience for consumers became key (Jamieson 14). Factory outlets and malls allow consumers to comparison shop for products within one collective area. Another trend that has grown is mail order, or catalogue, shopping. Shopping from a catalogue allows consumers to purchase products without leaving their homes. With the growth of the Internet, online shopping was initiated. Online shopping combines the convenience of mail order with the ability to find low prices. Mai states that the trends created in America have grown in countries all over the world (11).

2.5.4 Loyalty to Brands versus Retailers

One of the major differences noted by Jamieson between the US and the UK is the significance that consumers attach to value of brands and retailers: in the US, consumers generally buy products based on the name of the brand, whereas in the UK, consumers tend to determine which brand to select based on the advice of retailers. Jamieson states that along with price, UK consumers also pay a great deal of attention to the quality of the goods they purchase with the various methods of shopping available to them (14).

2.6 Shopping Methods in the UK

New shopping methods are continually introduced in the UK; the most popular means of shopping continue to change based on the convenience provided to the consumer. The UK has effectively implemented the major retailing methods of the US. Some of the methods of retail that appeal to a variety of consumers in the UK include large retailers, mail order, and online shopping (Limehouse 100).

2.6.1 Trends in Store-Based Shopping

Large retail stores have grown, since their founding, to the point where they have now replaced a number of the traditional, small corner shops. Though the corner shops continue to provide a greater level of customer service, the range of items that these shops can offer is limited. Studies by Dawson and Herbig indicate that the amount of free time available to consumers' is decreasing; therefore, their preference for the "comfortable shopping environment" offered by small shops has given way to the convenience provided by large retail stores (Dawson 106; Herbig 194).

The increased use of car transportation has also played a role in the development of larger retail stores. These large stores have begun to move into suburban areas due to the increased flexibility of travel with cars (National Economic Development Office 19). Large retail stores are able to offer a wide variety of items to consumers in a single location. For this reason, it is possible for consumers to make a single trip to a large store each week to make all of their necessary purchases. Instead of the personal relationship offered by small shops, consumers contend with a "machine for retail and capital consumption" at the large stores (Wrigley 18). The successful implementation of this new shopping method allowed for the development of other methods.

Though factory outlets have existed in the UK for over one hundred years, the building of factory outlet centres has provided added convenience for the modern consumer. In an analysis of the growth of factory outlets, Jones contends that outlet centres are generally built at least twenty-five miles outside town centres in an attempt to minimise the sales loss of existing retail stores (114). A key aspect of factory outlet centres is the leisure they provide, which appeals to some consumers. The relaxed

environment they create attracts shoppers who do not necessarily intend to make purchases. However, these consumers build a relationship with the centre and become increasingly likely to return to the centre when they need to make a purchase. At factory outlet centres, consumers benefit from a wide selection of merchandise as well as discounted prices (Jones 116).

2.6.2 Home-based Shopping

Herbig states that the concept of mail order was originally founded as a business aimed at providing choice, convenience, and credit to the lower classes in Britain (170). Mail order is now used by a variety of consumers; these consumers have a decreasing amount of leisure time and they view mail order as a timesaving convenience (Dawson 106).

According to a study by Wrigley, one of the main reasons that mail order is so appealing is that it provides consumers with the opportunity to find and purchase competitively priced items without leaving their homes. Along with convenience, consumers continue to expect high quality goods at low prices. The popularity of mail order shopping, however, detracts from the idea of shopping being a social activity for the British (Wrigley 229).

A new method of shopping in the UK is purchasing items over the Internet. Online shopping combines key factors in influencing the decision making of consumers. The convenience of shopping at home can be combined with the ability to find the lowest priced item. One of the most important disadvantages of online shopping is the consumers' need to connect to the Internet. De Mooj writes that the social and physical

interaction that accompanies “going to the shops” is not available while shopping online, and this could be a downside for e-commerce (229).

Limehouse believes that the key to the future growth of online shopping is meeting the needs of existing as well as potential future customers; e-commerce web sites will begin to form loyal customer bases by providing their users with the personal relationship that many British consumers seek (100). Doherty states that the most avid e-commerce users are “young, affluent, and well informed, educated consumers” (97). When online retailers fulfil the needs of this group of consumers, they have the potential to gain a new and effective method of advertisement. Due to the fact that advertising in the UK relies heavily on direct communication, word of mouth promotion of familiar e-commerce sites from the site’s users gives established online retailers an advantage over more recently founded sites (de Mooj 273).

Chapter Three: Methodology

This chapter is a description of the steps that were followed during the completion of this Interactive Qualifying Project for ShopSmart Limited. These steps included web site analyses, surveys, interviews, and an integrated analysis of the data attained through each of the data gathering steps. Web site analyses were performed to determine the services and utilities used on popular web sites. Surveys of students in the US and the UK provided us with data suitable for comparisons regarding e-commerce usage between the populations. Interviews of UK residents provided us with information about the motivations behind consumers' use of e-commerce. An integrated analysis was performed linking each step of the methodology to determine how web sites addressed the issues important to consumers. Each step of the methodology is detailed further in the following sections of this chapter.

3.1 Web Site Analysis

An online company's homepage provides a first impression to its visitors. If the web site does not appeal to a visiting consumer, the company may lose a potential new user. In addition to being visually appealing, the web site must also be easy to use and able to provide consumers with the information they both want and need. A substantial portion of our data gathering consisted of a web site analysis to investigate the services and utilities offered by a variety of e-commerce web sites. It was important to establish which features of e-commerce were popular and successful at the time of our investigation. In the following sections, the methods used to analyse and compare existing e-commerce web sites are described. Several web sites were chosen for analysis, and a standardised method

of data collection was used for each web site. For the purpose of analysis, the web sites were classified by what type of site they were. Then each web site was examined, and its features and characteristics were noted. In addition, the ease of using each web site to purchase a product was evaluated. The first step in the process of analysing web sites was to select which web sites would be analysed.

3.1.1 Selection of E-commerce Web Sites for Analysis

Our analysis of web sites focused on those web sites that were found to play a major role in online retailing in both the US and the UK. The web sites we investigated were chosen through a number of methods. ShopSmart, at the start of this project, provided us with a list of web sites that they perceived as potential competitors as well as a list of sites that were of interest to them in the US. In addition to those lists, other web sites were analysed to ensure that a sufficient amount of data was obtained; these web sites were chosen according to their popularity in both the US and the UK. Our main sources for determining web site popularity were the results of studies conducted in February 2000 by Media Metrix, Inc., and MMXI Europe, a subsidiary of Media Metrix, Inc. These studies focused on the measurement of Internet and digital media usage, recording the number of unique visitors that visited each web site. From the results of these studies, we were able to select e-commerce web sites that were among the most popular in the US and the UK. In addition to using the results from the Media Metrix studies, we determined additional popular web sites through our own research. The surveys that were conducted allowed us to select and analyse the most popular web sites among students in the both the US and the UK. Web sites that were repeatedly mentioned as favourites by interviewees,

and had not been selected in any of the previous steps, were also investigated. From all of these methods, we collected the Uniform Resource Locators (URLs), or web site addresses, of twenty-four web sites relevant to our analysis.

3.1.2 Compilation of Web Site Data

Information gathered from the web site analysis included services offered and utilities used, as well as other features of each web site. We categorised each web site and its features into a standardised table as shown in Table 3-1. In the table, the left hand column lists the information that we were looking for on each site. The middle column provides descriptions for each characteristic of the web page, and how the data was entered into the table. When each characteristic or feature was located on a web site, the number of pages away from the home page was recorded in the table. In other words, the number of links that were clicked on in order to reach the desired information was recorded. This was a quantitative indicator of how easy it was to locate each characteristic of the web page. In addition, any subjective data that was collected when analysing sites, such as a company's Unique Selling Point (USP) and the nature of the overall "shopping experience," were determined collaboratively. More than one member of our group looked at each site independently. Because some data was not clearly defined on some web sites, the opinions of more than one person were required to prevent biased results. The USP refers to an aspect of a site that is unique and may provide an advantage over similar sites in attracting customers. In addition to collecting the objective data and determining the unique selling point of each site, it was important to look at each site from the perspective of a consumer.

Table 3-1: Web Site Analysis Template

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Name of e-commerce web site	
URL	Web site address	
Type Of Site	Which type of site it is: retailer, auction, price comparison, etc.	
Product Categories	The number of different categories for products on the site: books, music, electronics, etc.	
Login Services	What types of personalisation services are available to consumers, such as personal accounts, member registration, etc.	
Security Policy	Security rating based on system outlined in Table 3-2	
Customer Service Methods	What types of online services are available to customers that need assistance, such as live help, site instructions, or community sections, etc.	
Order Confirmation	How a customer is notified that an order has been placed, and whether or not the customer is able to track the status of their order	
Delivery Policy	Whether or not the site outlines any information regarding the delivery of a customer's order	
Return Policy	What, if any, return policies are outlined on the web site	
FAQ Availability	Whether or not the site has a section where customers can read answers to frequently asked questions	
Consumer Feedback	What types of methods the consumer has available to contact the company, such as e-mail addresses, phone numbers, fax numbers, and postal addresses	
Multimedia Applications	What types of multimedia applications are available, if any, on a web site; for instance, the ability to download songs, or to listen to music or watch videos in real time	
Unique Selling Point (USP)	A unique aspect of the web site that sets it apart from other web sites, and has the potential to draw customers in to purchase from that site	
Text Only Option	Does the site have the option to be viewed as text only	
Homepage Load Time	How long does it take for the home page to load	
Shopping Experience	Different members of the group visited each web site with the intent to purchase a specific item. Throughout the course of their "shopping experience", notes were made as to the ease of use of the site, the results returned, and the overall opinion derived from using the particular site to find an item.	
Pictures	Does the site have pictures of products, and if so, what type of pictures	
Item Descriptions	Is there a description for each item on the web site	
Reviews	Do the products have individual reviews, and who are the reviews by	
Shopping Basket	Is a shopping basket offered on the site	
Popularity	How popular is the site from Media Metrix information, and the surveys we conducted	

A “shopping experience” was created to record impressions regarding the web site from a consumer perspective. Multiple group members “shopped” for the same items at the different web sites. The novel *A Tale of Two Cities* by Charles Dickens was the target item for purchase at these web sites, and at web sites where no books were sold, *The Matrix* on DVD was the target item. Each group member used the same procedure to conduct each shopping experience. When the home page was loaded, the “shopper” would find the section containing books. Once a search engine for books was found, the title of the book was entered a search was conducted. When the search results were displayed, the number of results found in the search was recorded. The “shopper” would then click on a link to one specific book, and note the information found on the book’s page. This information included the existence of any pictures of the book, reviews of the book, and the information about the book, such as the publisher. For price comparison sites, the ability to sort results by different options was noted. In addition, group members made any comments that they felt were pertinent to the overall shopping experience.

The collected data from each web site was organised into an Excel spreadsheet, shown in Table 3-1. One of the site characteristics, entitled “security policy”, was rated on a scale of one to five, with five being the most desirable rating. Our group created this rating system for the web site analysis, and a table outlining the rating system can be seen in Table 3-2.

The spreadsheets were used to make comparisons among the sites studied. From the results of this data collection, common features among the popular and successful web sites were noted. Differences between US and UK based web sites were examined, and potential services that could be transported from the US to the UK were determined.

Table 3-2: Security Policy Rating System

5	Security policy seen when home page is loaded
4	Security policy found by scrolling down home page
3	Security policy offered, and is found after some searching
2	Security policy offered, but customer is not notified until purchasing
1	No security policy offered on site

3.1.3 Analysis of Web Site Data

Once all of this data was compiled, we were able to perform qualitative comparisons regarding some of the features and services offered on the sites. We compared the sites in terms of their security advertising in order to determine the most effective way of conveying that information to consumers. Other issues that were analysed included a comparison of the USPs and the shopping experience of each site.

In addition to analysing popular web sites in both the US and UK, an in depth analysis of ShopSmart's web site was also conducted. In addition to recording information in the standardised table shown in Table 3-1, we also compared ShopSmart to other price comparison sites in terms of how services they offer differ from ShopSmart. We also compared these sites by shopping experience and unique selling points. We determined what features ShopSmart was using that were appealing and features that may be beneficial to add to their web site.

3.2 Surveys of Students in the US and the UK

Another method of data collection was surveying students at WPI in Worcester, Massachusetts and at the School of Physical Sciences and Engineering (SPSE) at King's College in London, England. Students were chosen as our survey population because they

were readily available to us and because research has shown that consumers in this age bracket are more willing to accept changes (de Mooj 273). Research has also shown that e-commerce users tend to be young and affluent (Savage 4). Students with a technical background are likely to fit into both categories once they have graduated. Therefore, surveying students would provide insight into a population that is likely to become frequent users of e-commerce. Their opinions were most valuable in determining what needs had to be met in order to retain consumers. In addition, surveyed students who had not shopped online provided insight into the concerns that might need to be addressed to gain new customers. By surveying the students at the two universities, we were able to observe e-commerce usage among each population and compare them to each other. The comparison of e-commerce usage allowed us to assess whether differences might be a result of cultural differences, technological differences, or both. The following sections describe alternatives to surveying that were considered, the specific objectives and development of the survey, and analysis of the data obtained from the surveys.

3.2.1 Alternatives to Surveying

Although surveys were ultimately chosen as the best possible method for obtaining the desired information, focus groups and interviews were considered as alternative means of gathering this data. Of the available options, the survey was determined to be the most effective means to accomplish our goals. The survey allowed us to reach a large number of students and to understand their behaviour on the subject of e-commerce. Since we were dealing with students, the time that our chosen method would take was a key concern. We felt that the students would not be willing to spend the time that was needed to conduct

thorough interviews and focus groups. These time constraints, as well as our own, excluded the use of focus groups and interviews. Another disadvantage of focus groups was that they would not gain a true representation of the schools' populations of e-commerce users because they do not necessarily elicit individual opinions; one person's opinion can influence someone else's.

3.2.2 Survey Design

The survey was designed to be exploratory. The objective of an exploratory survey is to become familiar with a topic (www.au.af.mil/au/hq/selc/smplIntro.htm). We were interested in asking people their preferences concerning e-commerce web sites. Their preferences helped determine what the most important features are when using e-commerce web sites. A key aspect of the survey was that it provided respondents with anonymity. The survey was designed to fit on one page so that students would be more likely to complete the entire survey. It was intended to be as simple as possible while providing us with the detailed information needed to help formulate our recommendations. Six of the seven survey questions were close-ended questions. This type of questioning was designed to provide us with quantitative data regarding e-commerce usage, as well as various consumer preferences. Questions revealed information such as the location(s) that the respondents used to access the Internet and the number of times the respondents had shopped online. The respondents were asked to indicate all sites they had visited, purchased from, and would purchase from again. There were also questions through which the respondents could indicate aspects of e-commerce web sites that particularly appealed

to them, such as the appearance of certain sites, as well as the concerns that they had regarding shopping online, if any.

Once the preliminary design was completed, the survey was pre-tested in student residences at WPI. Based on the results of the pre-testing, we made changes to questions that were found to be potentially confusing to the respondents. Although no pre-testing was completed in the UK, changes were made to the version distributed there to reflect differences in terminology. For instance, the survey distributed in the US asked respondents to indicate their *major* while the survey given to students in the UK asked respondents to specify their *degree*. The survey questions differed only in the listing of e-commerce web sites at which the students may have shopped. The survey we administered at WPI is included as Appendix B. The corresponding survey administered at SPSE is included as Appendix C.

3.2.3 Sampling and Implementation of the Survey

Students at WPI and SPSE at King's College of London were selected because they were readily accessible to us. In addition, the students of these schools were more likely to have considerable exposure to computers and the Internet due to the technical nature of engineering programs.

To select the number of surveys that would be appropriate for each school, we used the following equation from the Air University Sampling and Surveying Handbook:

$$n = .25 \frac{N Z^2}{d^2 (N - 1) + .25 Z^2}$$

n = sample size required
 N = total sample size of population
 d = precision level
 Z = number of standard deviation units

The number n represents the sample size required for a given population. N represents the total sample size of the population, the number of students in each school we surveyed. Since any student enrolled at the school was a potential recipient of the surveys, the total size of the population at WPI was 2800 while at SPSE it was 1800. To determine z , the number of standard deviation units, we first needed to pick a confidence level. For our purposes, we chose to have a confidence level of 95%, which indicates a 95% probability that the data from the survey represents the school's population. After we chose the confidence level, we found a z of 1.96 standard deviation units from the mean, which corresponds to this confidence level. Next, we selected a desired precision level, d , of 5%, which represents the error associated with our confidence level. Using these numbers, the number of surveys to be completed at WPI and the SPSE was calculated as 337 and 317, respectively.

Since both schools had a similar number of students studying engineering and science, we attempted to mirror the sampling methods used at each school. At WPI, we surveyed students in four courses with a wide major and age distribution in order to get a broad representation of the school's population. We chose to go into classrooms because we would be distributing surveys to a "captive audience." Having such an audience not only allowed us to distribute surveys directly to students, but it also allowed us to collect them soon after they were completed. This method of distribution also eliminated the non-response bias associated with most methods of sampling. After distributing the surveys in

classrooms, we obtained 310 completed surveys. To obtain a similar number of completed surveys at SPSE, we used the same method. However, due to the program structure, we surveyed three classes with mixed Mechanical and Electrical Engineering majors in their 1st, 2nd, and 3rd year of study. This resulted in 120 completed surveys. To achieve a number closer to the desired sample population and to obtain other majors of SPSE, we performed surveys in the refectory as well as in general access computer labs. Only after students had confirmed they were part of SPSE were they given a survey to complete. This ensured that students who were not part of SPSE did not take the survey. Because King's College ended its semester after the week we performed the surveys, other classes could not be surveyed. After surveying the students in the refectory and in computer labs, we finished with 208 surveys. Since both of these numbers fell below our initial goals, we needed to check the demographic information to ensure that our information received represents as random a sample as our distribution method allows for. Once we found that we had received a wide range of age and majors, we concluded that enough surveys had been obtained for a 90% confidence level during the analysis of our collected data.

3.2.4 Survey Analysis

We used Microsoft Access and Microsoft Excel as tools to analyse our survey data. The data was entered into an Access database to allow for easy querying. Excel was used to perform analysis on how data variables related to each other as well as to create relevant tables and figures.

Two mathematical methods were utilised to compare and relate the data from the surveys conducted at WPI and SPSE. The two methods used were the null hypothesis and correlation coefficient. Each method is described below.

The null hypothesis was used to determine whether differences existed between the responses from WPI and SPSE students. Use of the null hypothesis allowed us to hypothesise that no difference existed between the percentage of WPI and SPSE students who responded to a particular question. After performing the null hypothesis using the equation shown below, a *z-value* was obtained. This *z-value* indicated that we could be 95% confident that no difference existed between the two populations if *z* was between +/- 1.96. If the *z-value* from the comparison exceeded +/- 1.96, then a difference existed between the two populations.

$$z = \frac{p1 - p2}{\sqrt{\frac{p1(1-p1)}{n1} + \frac{p2(1-p2)}{n2}}}$$

In the equation above, *p1* is the percentage of WPI respondents who were represented by the category analysed while *p2* was the percentage of SPSE students represented by the category analysed. *n1* is the sample size of WPI, 310, and *n2* is the sample size of SPSE, 208. Negative *z-values* indicated that more SPSE students were represented by the category than WPI students. In the same manner, positive *z-values* indicated more WPI students were represented than SPSE students by the category analysed.

The second method we used to compare data was the use of a correlation coefficient. Through calculation of the correlation coefficient, we determined the extent to

which the two data variables were related. The *r-value* we calculated fell within the range of +/- 1 and determined the strength of the correlation between the data. An *r-value* of negative one indicated that there was a strong inverse correlation between the data sets, while an *r-value* of positive one indicated a strong converse relationship. An *r-value* of zero indicated there no correlation existed between the data sets. The equation used to calculate the *r-values* is shown below.

$$r = \frac{(\sum xy)}{(\sqrt{\sum x^2} \sqrt{\sum y^2})}$$

In the equation above, *x* denotes the percentage of WPI students who were represented by the category while the *y* value denotes SPSE students who are represented by the category analysed. These two methods aided in the detailed analysis of the data from the surveys.

Analysis of the collected data focused on possible correlations between responses to particular questions. For example, we checked to see whether concerns students had regarding online shopping were related to the number of times they purchased items online. We determined which web sites were offering the best service in terms of how many people would make additional purchases from a site. The method of online retailing which was most popular among students was another area of interest. Our data detailed the web sites that respondents had visited and subsequently purchased items from. We were also able to observe if popular US based sites had similar popularity in the UK.

The ultimate objective of the survey analysis was to identify differences in the answers given by the WPI and SPSE students. We analysed these differences to see if they were a result of cultural differences or of the difference in technology between the US and the UK. Based on these variations, we made determinations as to which of the existing methods in the US might be effectively transferred into the UK. Although this survey did not allow us to generalise the e-commerce habits of all students in the US or the UK, it did provide an understanding of some of the differences that existed in the shopping styles of the surveyed students.

3.3 Interviews of Internet Café Patrons

With the growth of the Internet, growth in e-commerce is also expected. Thus, online retailers cannot be satisfied with only retaining their current customer base. Companies must act to gain new consumers willing to shop online. However, it is also important to maintain and enhance the loyalty of current customers. Therefore, we sought information from both e-commerce users and non-users in the UK, who were knowledgeable about the Internet and who were from a wide variety of backgrounds. This group was more likely to have familiarity with and have stronger opinions about e-commerce due to their familiarity with the Internet.

To gain information from these consumers, we conducted interviews. It was decided that the best location to reach a target population of people familiar with the Internet was Internet cafés. Internet cafés were chosen because we did not have access to information that would allow us to sample all residents of the UK who were knowledgeable about the Internet or e-commerce nor did we have the time to complete

interviewing of this magnitude. We interviewed Internet café patrons who had previously made a purchase online as well as those who had not participated in e-commerce. The purpose of interviewing non e-commerce users was to elicit reasons that they did not shop online. The views of this group of consumers were important to consider because, due to their familiarity with the Internet, they represent potential e-commerce users. For this reason they were able to provide valuable insight into aspects of shopping online that could be improved to attract new users. Current users of e-commerce were interviewed to establish consumer preferences among the sample population. These users also provided insight into how e-commerce web sites attracted them to make a purchase online.

3.3.1 Alternatives to Conducting Interviews

Alternatives to interviewing each of the target populations — e-commerce users and non-users — were considered, including focus groups and surveys. Interviews were chosen, in part, because they allowed for questions that were more open-ended. In this way, the interviewees could speak freely about their opinions regarding online shopping instead of being asked to categorise their feelings. The open-ended questions were used to determine the motivations behind the behaviours of Internet users, which would not have been accomplished as easily through other means of data collection.

We decided not to administer another survey to obtain the necessary information because a thorough analysis of two surveys focusing on different aspects of online shopping would be difficult to accomplish properly considering the period of time in which we were working. We also felt that people would be more reluctant to fill out a more lengthy survey.

Focus groups were also excluded as a possibility for gathering this data. During the course of a focus group, it is possible for the opinions of others to influence a respondent's answer, thereby biasing it. In addition, focus group response rates can be very low. This could possibly have caused problems for us in terms of having a sample representative of our target population.

3.3.2 Design of Interview Questions

The interviews were designed to allow consumers to provide their reasons for participating or not participating in e-commerce, as well as their preferences regarding a number of other areas such as methods of traditional shopping and advertising. The interview examined how often the sample population used the Internet and for what purpose(s). There was a focus on the shopping habits of interviewees and their familiarity with the concept of online shopping.

For those people who were aware of e-commerce and had looked at e-commerce web sites but had not made a purchase online, we ascertained the reasons that no purchase was made. Specific concerns regarding the concept of online shopping as well as explanations for not making a purchase were solicited. We also attempted to determine methods of online retailing that might attract each potential consumer's attention and draw them to e-commerce. The majority of the interview questions were open-ended questions that allowed respondents to provide individual answers. The reason for designing the questions in this way was to gain qualitative data regarding either the motivations behind consumers' use of e-commerce or the inhibitions some consumers had for not shopping online.

Interviewees who indicated that they had previously made a purchase online were given a separate set of questions designed specifically for e-commerce users. We believed that determining which web site was the favourite of each consumer would indicate sites that we should potentially look at more closely. It was also important to ascertain the reasons that a particular web site was a consumer's favourite. The reason for this line of questioning was to obtain the information that we would later need to establish a connection between the aspects that attract consumers to sites and the usefulness to ShopSmart of the corresponding services and utilities.

Both groups of interviewees were questioned regarding a number of other related topics in addition to that of e-commerce. One question asked the sample population if they liked to utilise a number of traditional methods to shop. Another question was asked to determine what methods of advertisement were likely to catch their attention.

After we designed the draft interview form, the questions were pre-tested with ten employees at ShopSmart Ltd. This testing was completed as if the employees were the Internet café patrons we would be interviewing. Their comments served to identify changes that needed to be made to the terminology and wording of questions. A sample of the interview in its final form is included as Appendix D.

3.3.3 Sampling and Implementation of Interviews

Participation in online shopping requires some degree of comfort with and knowledge of the Internet. For this reason, we chose to gain our sample population from among Internet café patrons. The obvious drawback to limiting ourselves to Internet café patrons is that the patrons did not constitute a random sample of Internet users in the UK,

which introduced biases to our data. Given that as of April 2000 there were 15.7 million Internet users in the UK and the constraints of our location in London, it was not feasible to conduct a random sampling of these users (<http://www.nua.ie>). However, the information obtained from the sample of Internet café patrons allowed us to draw conclusions about that specific population.

Interviews were conducted until a point was reached at which patterns in responses emerged from both sets of interviewees, patrons who had and had not shopped online. This indicated that a sufficient amount of data had been collected to begin drawing conclusions.

Two members of our group worked together to perform the interviews. Patrons were asked, either while entering or exiting the café, if they were interested in participating. Each potential interviewee heard the following introduction: “Hi, we are American students performing a study of UK residents’ use of e-commerce. Can you spare five minutes to answer some questions regarding this topic?” Patrons who indicated that they were not interested in participating were thanked and not bothered any further. Those who were willing to contribute were asked questions in the order that they appear on the interview form included as Appendix D, according to whether they had participated in e-commerce. However, potential interviewees were also asked if they were residents of the UK to ensure that the data we would be gathering would be relevant to the needs of ShopSmart. Fifty-six interviews were conducted and at no time was the connection between ShopSmart Limited and our research revealed.

3.3.4 Interview Analysis

The first part of our interview analysis was the creation of a database using Microsoft Access. This database allowed us to compile the data provided by Internet café patrons during the course of the interviewing process. Compiling the collected data made it easier to make queries and properly analyse the information.

Our interview analysis included comparison of the responses provided by Internet café patrons who had purchased online with the data obtained from patrons who had not purchased online. The conventional shopping methods that respondents indicated using were analysed to determine whether members of the sample were retaining the “social” shopping methods or using online retailing. For both e-commerce users and non-users, concerns regarding online shopping were analysed to see if there were differences between the concerns of the two groups. We also examined appealing methods of e-commerce to determine what methods appealed to each type of user.

Concisely, the interview analysis focused on identifying differences between e-commerce users and non-users. We analysed these differences to determine what appeals and concerns each sample group had. Although the data gathered did not allow us to generalise about all e-commerce users and non-users, it allowed us to draw conclusions regarding our sample population.

3.4 Analysis and Integration of Data

The data gathering methods for our project consisted of a web site analysis, surveys of students in the US and the UK, and interviews of Internet café patrons in London. We recognised the need to gain opinions from both types of consumers: e-commerce users and

non-users, in order to determine which services and utilities on e-commerce web sites were the most popular among e-commerce users, and most desirable among non-users. These opinions were collected through surveys and interviews. The surveys that were conducted provided an understanding of the general behaviour of e-commerce users, while our interviews attempted to determine the motivation behind these behaviours. Our recommendations to ShopSmart addressed the needs of people who did not use e-commerce as well as the services that appealed to the students and UK residents who already shopped online. It was necessary to perform an overall analysis once the data from each group had been fully gathered and organised. This integrative analysis served to determine which features of e-commerce web sites consumers found appealing as well as the most important concerns held by all of the target populations. Both of these issues influenced the content of the recommendations offered to ShopSmart. The following sections describe the way in which we integrated the data collected from each of the data gathering steps of the methodology. The first section details the relationships drawn between the surveys and the interviews; the next section describes how the surveys and interviews related to the web site analysis. The final section describes the conclusions we formulated among these comparisons.

3.4.1 Relationships Between Survey and Interview Results

During the drafting of the survey and interview questions, we included similar questions about a number of subjects. Some of the questions we asked on both the surveys and interviews were what concerns people had about buying products online and what reasons a person had for buying a product from a certain website. The question asking

people to list their concerns regarding shopping online was presented to both the WPI and SPSE students, as well as to all interviewed UK residents. In analysing the results to this question, we determined the greatest concerns among each sample population individually, and then made comparisons to determine whether there was one or several predominate concerns among all of these consumers. These analyses indicated to us whether the concerns were similar among the survey respondents and interviewees in the US and the UK.

The other questions that were asked in both the surveys and interviews regarded the online shoppers' favourite web sites and the sites that were purchased from. In analysing the responses to this question, we tabulated the sites visited most often and the favourite web sites among each sample population. We compared the data obtained from the SPSE students with the data from interviewed UK consumers in order to identify similarities or differences in the sites shopped at between these two consumers. A comparison of data from the WPI and the SPSE students showed us relationships between the types of sites shopped at by the similar consumers. Making a comparison between the sites shopped from at WPI and the combination of SPSE and UK residents established the differences and similarities held between the surveyed US students and the surveyed and interviewed UK residents.

3.4.2 Relationships Between Surveys and Interviews and the Web Site Analysis

The results obtained from the SPSE students and the Internet café patrons were grouped together to highlight similar trends between the two sample populations. The appealing features of their favourite web sites and also the concerns that both groups had

regarding e-commerce were grouped together to highlight common features among the two groups. After common features were determined between both UK sample populations, we compared the collective features to the opinions regarding WPI students.

We examined both the WPI and UK residents' favourite web sites and the reasons why those particular sites were among the favourites. When we located the web sites, we looked at the analysis in our web site data and compared the students' observations with our own. We then used information from Media Metrix and MMXI regarding the number of visitors who visited each site to determine whether this web site was appealing just to the surveyed students or to all residents in the respective countries. The reasons the site was more appealing than others was detailed and a determination of the appealing features of each site was made.

The concerns of WPI students and the UK residents were also addressed. If a student bought from a particular site and had concerns about shopping online, the preferred site was studied to observe how that site addressed the issues of concern. In examining these concerns, we compared the preferred WPI and SPSE sites, and how each site addressed these issues. From this comparison, we determined whether one site's method of handling the concerns might be more effective than that of another.

3.4.3 Formulation of Conclusions

The integrated analysis consisted of relating our surveys to our interviews as well as relating the surveys and interviews to the web sites analysed. From our surveys and interviews, we were able to determine the appealing features of web sites and concerns that existed among all survey and interview respondents. Once the appealing features and

concerns among the respondents were analysed, we related these items to the web sites the respondents shopped at. We examined the appealing features of each web site and compared them to our observational analysis of the site. In addition to examining the appealing features listed by students of each site, we also located other unique or interesting features that potentially make the web site attracting to consumers. We also examined how the given sites addressed the concerns of all survey and interview respondents. From this analysis, we were able to extract the most appealing features of the web sites, and the most effective ways to address consumer concerns.

Once these features and concerns were determined, we compared them to ShopSmart's web site to observe how ShopSmart addressed the features that were most popular among the analysed web sites. We sought to identify whether the appealing features found in sites would be useful for ShopSmart to implement on their web site. When we examined ShopSmart's web site, we were able to identify how they addressed the concerns of users in the UK. By taking into consideration how other web sites address these same concerns, we determined effective ways ShopSmart could address these concerns.

Below is a summary of the integrated analysis.

- Step 1: Relating surveys to interviews
 - Compared concerns among WPI students, SPSE students, and Internet café patrons
 - Compared differences in web sites shopped at by all students and interviewees
 - Compared reasons for a favourite web site among WPI students, SPSE students, and Internet café patrons
- Step 2: Relating surveys and interviews to web site analysis

- Compared the appealing features of web sites listed by WPI students, SPSE students, and Internet café patrons to our observational analysis of these web sites
 - Compared how the favourite web sites listed by WPI students, SPSE students, and Internet café patrons addressed the concerns of these respondents
 - Determined most appealing and unique features of the web sites listed by WPI students, SPSE students, and Internet café patrons
 - Determined the most effective ways these sites addressed the concerns of the respondents
- Step 3: Comparison to ShopSmart's web site
 - Compared ShopSmart's current web site to the most appealing web site features as determined by our surveys and interviews
 - Compared how ShopSmart addressed the concerns of survey and interview respondents with the most popular web sites listed by these respondents
 - Determined features on ShopSmart's web site that could be enhanced

Chapter Four: Results

In this chapter, the data gathered according to the methodology described in Chapter Three is presented. An extensive amount of data has been collected and displayed. It was necessary to interpret the collected data, so that appropriate analyses and comparisons could be performed.

4.1 Results of Web Site Analysis

Once all the web sites had been examined, the data was collected and put into tables as described in Section 3.1.2. A table for each web site was created, and each of these tables can be seen in Appendix E. In the following sections, the results of these analyses are explained.

4.1.1 Web Site Popularity

The first aspect of the web sites that was analysed was the popularity of each site. Web site popularity was determined by the method established in Section 3.1.1. ShopSmart Ltd suggested two US based web sites, bottomdollar.com and mysimon.com, and five UK based web sites, btspre.com, ebay.com, letsbuyit.com, shopgenie.co.uk, and valuemad.com, as sites of potential interest. In addition to these web sites, other sites were chosen based on popularity as determined from the results of a study conducted by Media Metrix, Inc., as well as from the results of the surveys conducted at WPI. The information available to the public from Media Metrix was a list of the top ten digital media shopping web sites in the US, shown in Table 4-1. The table includes the number of unique visitors to each web site listed in thousands. From the list, the popular web sites most applicable to

this project were selected for analysis. Sites were selected as applicable according to their contents; due to the nature of this project, web sites involved in e-commerce were of key interest.

Table 4-1: Media Metrix Information Regarding US Web Site Popularity

Rank	Top 10 Digital Media Shopping Sites	Unique Visitors (Thousands)
1	bluemountainarts.com	16,554
2	amazon.com	13,609
3	ebay.com	11,791
4	shop.aol.com	10,738
5	americangreetings.com	7,033
6	cdnow.com	5,690
7	barnesandnoble.com	5,176
8	mypoints.com	4,875
9	egreetings.com	4,161
10	coolsavings.com	4,038

Data collected from surveys conducted at WPI also contributed to the determination of which sites were appropriate to be included in our analysis; web sites that were listed as the favourite web site of eight or more survey respondents were of interest.

Table 4-2 details the most popular web sites among the surveyed students at WPI.

Table 4-2: Results of US Surveys Regarding US Web Site Popularity

Rank	Web Site	Visitors
1	amazon.com	36
2	ebay.com	35
3	buy.com	13
4	ticketmaster.com	11
5	cdnow.com	8

The number of respondents that listed each site as their favourite is shown in the right hand column of the table. A comparison of Tables 4-1 and 4-2 shows that commonalities exist between the web sites they detail; the web sites common to both tables

exhibit the same pattern of rank, from most popular\ at the top of each table to the least popular, in both tables. These common web sites, in order, are as follows:

- amazon.com
- cdnow.com
- ebay.com

A similar comparison was made among the UK based web sites that were chosen for our analysis. This comparison was likewise based on data from MMXI Europe, a subsidiary of Media Metrix Inc., and on information collected through the surveys conducted at the SPSE. Table 4-3 is a listing of the top UK retail sites, according to MMXI Europe, with the number of unique visitors to each site listed on the right, in thousands; only retail sites we analysed are shown in the table.

Table 4-3: Results of Media Metrix Information Regarding UK Web Site Popularity

		Unique Visitors (Thousands)
Rank	Retail Web Sites	3,386
1	amazon.co.uk	730
2	amazon.com	496
3	shopsmart.com	288
4	jungle.com	255
5	argos.co.uk	241
7	letsbuyit.com	215
8	bol.com	214
9	zoom.co.uk	208
10	infront.co.uk	185
17	cdnow.com	136
21	dabs.com	106

The data in Table 4-3 was compared with the results of the surveys from the SPSE, shown in Table 4-4. Popular e-commerce web sites common to Tables 4-3 and 4-4 were selected for analysis.

Table 4-4: Results of SPSE Surveys Regarding Favourite E-Commerce Web Site

Rank	Web Site	Students
1	amazon.co.uk	12
2	jungle.com	5
3	amazon.com	4
4	cdnow.com	4
5	dabs.com	3
6	insight.com	3
7	trainline.co.uk	2
8	uk.yahoo.co.uk	2

As was the pattern among the data concerning sites in the US, there were UK based web sites that appeared in both data sets. In addition, the rank, in terms of the number of people favouring these sites, is nearly identical between the data sets. The relationship between the orders of popularity rankings between the data is an indication that the information gathered through the surveys is not atypical. After utilising each of our selection processes, several web sites were chosen to be included in our analysis. The US based sites that were analysed are:

- amazon.com (retail)
- barnesandnoble.com (retail)
- buy.com (price comparison/portal)
- cdnow.com (retail)
- ebay.com (auction)
- mercata.com (group buying)
- mysimon.com (price comparison/portal)
- ticketmaster.com (retail)

The UK web sites chosen through the same processes were:

- amazon.co.uk (retail)
- argos.co.uk (retail)
- blackstar.co.uk (retail)
- uk.bol.com (retail)
- btspre.com (price comparison/portal)
- dealtime.co.uk (price comparison/portal)

- ebay.co.uk (auction)
- infront.co.uk (retail)
- jungle.com (retail)
- letsbuyit.com (group buying)
- qxl.com (auction)
- shopgenie.co.uk (price comparison/portal)
- shopsmart.com (price comparison/portal)
- valuemad.com (price comparison/portal)

The selected web sites were analysed according to Table 3-1 and the format described in Section 3.1.2. The complete results can be found in Appendix E. The following sections describe useful results of these analyses. The following sections detail some of the results of the web sites.

4.1.2 Security Policy Rating of Investigated E-Commerce Web Sites

The results of the surveys conducted at WPI and at the SPSE indicate that the largest concern regarding e-commerce among respondents was Internet security. Table 3-2, in Section 3.1.2, outlined a security rating system that was used to measure the effectiveness with which each site advertised its security policy. Of the US sites, 38% were given the highest security awareness rating during the course of our analysis while 60% of examined sites in the UK received the highest rating. Our data also indicated that e-commerce sites offering online auctions were the most likely type of site to receive the highest rating; 100% of investigated auction sites clearly specified their security policy while 70% of direct retailers and 29% of portal/price comparison sites were found to do the same. Group buying sites were the least likely to receive a security advertisement rating of five; none of the group buying sites included in our analysis obtained this rating.

Complete results of this information can be found in Appendix E.

4.1.3 Unique Features of Investigated E-commerce Web Sites

Another element of our web site analyses was the determination of any unique features, or selling points of each web site. We recognised that identification of these characteristics was subjective. Therefore, to determine these elements as accurately as possible, various members of our group examined each web site individually. This was done to ensure that the data we were collecting was not biased. Through this process, we ascertained that not all of the web sites in our analysis had a unique selling point; some web sites had interesting characteristics that could potentially draw customers, while other web sites did not offer anything unique as determined by any member of the group.

One feature offered by several sites was the ability for each consumer to personalise the site to reflect his or her own taste. When a user personalises a web site information such as shipping address and credit card number can be saved for use by the web site during subsequent visits. This option can potentially make future visits more convenient for consumers, in that they will not have to re-enter the stored information to complete an order. In addition to saving personal information, certain web sites can also track a user's purchasing habits, or personal preferences in the items they purchase. With this information, a web site can make recommendations to individual users regarding products that might suit their interests. For example, if a customer regularly purchases classical music from a web site, that web site could recommend additional classical music selections for the user to purchase during future visits.

Multimedia applications were found on some of the analysed web sites. The majority of the sites offering applications of this nature sold music and videos. These multimedia applications included the ability to download songs from a web site without

incurring a charge, and the ability to listen to certain songs through a real time audio player. This allows customers to preview a song before making a purchase, and can lessen the impersonal nature of the online shopping experience.

Another feature that can help to make online shopping less of an impersonal, solitary event is the customer interaction provided by some web sites. Some web sites provided forums, in which customers communicated with each other about their online shopping knowledge. In this way, first time customers can learn the opinions of more seasoned online shoppers to aid in their e-commerce decisions.

A unique feature of a small number of the web sites that were studied in our analysis was the concept of mobile WAP compatibility. One particular web site that has introduced mobile WAP compatibility is amazon.co.uk. Using these applications, consumers can access amazon.co.uk's web site and purchase products from their mobile WAP phone.

An additional feature common to a number of the web sites involved in our research was bargains and sales. Specifically, those web sites that offered personal accounts and membership services tended to offer special deals to members only. Some web sites also offered discounted prices for best-selling items. An analysis of these results is discussed in Chapter 5, including a more in depth analysis when integrating this information with the survey and interview results.

4.2 Survey Results

As part of the data gathering steps of our methodology, we distributed 518 surveys to students enrolled in technical programmes of study in both the US and the UK. At WPI,

310 surveys were collected from students in a variety of classrooms. Similarly, 208 surveys were collected from students of SPSE at King's College of London. Due to the way in which they were distributed, and the captive audience that our method gave, the response rate for the surveys in each location was 100%. The following sections detail the principal results that were gathered from these surveys. The complete results of the surveys conducted in the US and the UK can be found in Appendices F and G respectively. This chapter only details the results; the complete analysis of these chapters where comparisons between the two populations were made is included in section 5.2.

4.2.1 Results Obtained from Surveys Distributed in the US

The survey conducted in the US consisted of seven questions. Each respondent answered three of these questions while the other four questions were directed specifically at those students who had made an online purchase.

4.2.1.1 Demographic Data Regarding Survey Participants in the US

The first survey question gathered the essential demographic information. All demographic comparisons between the surveys and actual WPI figures corresponded to the 1998 enrolment figures posted at <http://www.wpi.edu/Admin/Registrar/Factbook>. Although the figures have changed since this last study, it is very likely that they have not changed dramatically. From this question, we observed that the sample population was made up of 229 male respondents and 81 female respondents. This represents a sample population that was 74% male and 26% female. The gender breakdown in the survey is

representative of WPI's gender breakdown in that the school's population consisted of 22% females.

The completed surveys also specified the majors of the respondents. The three most popular majors among the respondents were mechanical engineering, computer science, and electrical engineering, in that order. A comparison of these majors among survey respondents and actual percentage of WPI students is shown in Table 4-5.

Table 4-5: Percentage of Students With Top Three Majors at WPI

Major	Survey Respondents (%)	Overall Students (%)
Mechanical Engineering	16	20
Computer Science	14	18
Electrical Engineering	13	16

An examination of the chart shows that the data gathered was representative of the major classification at each school. From our survey results, we also found that we received a wide variety of ages among the survey recipients. Of our survey respondents, 28% were aged 18 or below, 32% were aged 19, 22% were aged 20, and the remaining 18% were aged 21 or above. Although we did not have access to corresponding ages for these figures, we realised that the variety of ages given among the respondents was an indicator that a wide breakdown of the school's ages had been surveyed. Given our sample population in regards to age, gender, and major demographics, we concluded that our sample population was a good representation of the entire WPI population as a whole.

4.2.1.2 Results Obtained from all WPI Survey Respondents

All respondents, whether or not they had participated in e-commerce, also answered the second question, 'From where do you access the Internet?' Four possible

locations as well as a 'none' option and blank spaces to offer additional locations were offered on the survey. The respondents were asked to select as many options as applied to them. A majority of the respondents, 83%, access the Internet from a computer on campus at WPI. In addition, 67% of the surveyed students accessed the Internet through their permanent residence, and 59% accessed the Internet from their student residence.

The only other question that was answered by all survey participants was the question positioned last on the survey form. The respondents were asked, 'Do you have any concerns regarding online shopping?' The contributors were presented a list of eight popular concerns as well as an area to write their own unique concerns. The data obtained from this question is shown in Table 4-6.

Table 4-6: Concerns Regarding E-commerce Among WPI Survey Respondents

Concern	Students (%)	Concern	Students (%)
Internet security	49	Price	13
Difficult to return items	46	No interest	12
Slow delivery	28	No/slow access to Internet	10
Do not trust retailers	25	Shipping Costs	3
Impersonal	14	Other	2

The left most column of Table 4-6 indicates the concern identified by the survey participants. The middle column indicates the number of respondents who listed each concern, while the right column gives the percentage of respondents who thought the item was of concern, out of the total 310 respondents to our survey. From this table, we can distinguish that the main concerns among students included Internet security, the difficulty in returning items, slow delivery, and not trusting retailers. These concerns were mentioned by 49%, 46%, 28%, and 25% of respondents respectively. Additional items were of concern to fewer than 15% of the population.

4.2.1.3 Results Obtained from E-Commerce Users Only at WPI

Only members of the sample population who had purchased one or more items online answered the remaining four questions. The first of these questions was ‘How often do you purchase items online?’ The respondents could choose from four standard answers. They could classify themselves as having shopped online one to two times ever, one to two times a year, two to five times a year or more than five times in one year. The percentage of the population that had made an online purchase was 74%. Items purchased once or twice ever represented 23% of the students while purchases of more than two times a year represented 44% of the students.

The next question looked at the sites e-commerce users had visited, purchased from and would purchase from again. The sample population was presented next with a list of twelve of the most popular e-commerce web sites among American Internet users. There were also blank slots in which the respondent could place the URL of a site that they had purchased from but was not included in the standard list. They were asked to check a box next to each of the e-commerce sites that they had visited. Additional boxes were used to represent a purchase from each site and whether or not the respondent was satisfied enough with their experience to purchase from that site again. The most frequently visited sites and the percentage of students who visited them is shown in Table 4-7.

Table 4-7: E-Commerce Web Sites WPI Students Have Visited

E-Commerce Web Site	Students (%)
amazon.com	81
cdnow.com	46
ebay.com	70
retail stores	65
ticketmaster.com	57

In Table 4-7 we identified the top five e-commerce sites WPI students visited. We then examined the sites students had visited most often to determine how many of these students were actually purchasing items from the site and examined whether or not they would return to the site to purchase items again. The percentages for the students who had purchased an item from that site are based on the number of students who had visited the web site. The percentages for students who would purchase from the web site again are based on the number of students who had purchased from the web site. This information is shown in Table 4-8.

Table 4-8: E-Commerce Web Sites WPI Students Have Purchased From and Would Purchase From Again

E-Commerce Web Site	Students Visiting Site Who Have Also Purchased From Site (%)	Students Purchasing From Site Who Would Purchase From Site Again (%)
amazon.com	52	86
Cdnow.com	46	83
Ebay.com	43	88
retail stores	48	76
ticketmaster.com	63	81

Examination of Table 4-8 shows that over 50% of WPI students who visited ticketmaster.com and amazon.com would also purchase from these sites. We can also observe that most of the sites left customers satisfied enough for the customers to make a purchase in the future, as over 75% of the students said they would do so. The sites most students would purchase from again are amazon.com, ebay.com, and cdnow.com.

The fifth and sixth questions on the survey were closely related. Question five asked the sample population ‘What is your favourite site for purchasing items online?’ while the subsequent question inquired ‘Why is this site more appealing than other online shopping web sites?’ This open-ended response question was answered by only 71% of e-

commerce users, which represents 164 out of the 230 e-commerce users. The two most popular sites selected as favourites were amazon.com, with 36 of the students selecting the site, and ebay.com, with 35 of the students mentioning the site. Table 4-9 lists the top five sites students selected as favourites. The column labelled *NUM* indicates the number of students out of the 230 e-commerce users, who specified the site in the left column as their favourite. The abbreviations for the reasons are shown in Table 4-10.

Table 4-9: WPI Students Favourite Web Sites and Reasons

Site	NUM	CUS	EU	POP	PRC	PSA	SEC	WSA
Amazon.com	36	7	24	12	23	8	12	10
Ebay.com	35	4	24	13	30	9	9	6
Buy.com	13	4	6	5	13	5	6	7
Ticketmaster.com	11	1	10	--	5	--	3	3
Cdnow.com	8	3	6	--	6	1	2	2

Table 4-10: Key to Abbreviations Used in Table 4-9

CUS = customer service	PRC = price of items
EU = ease of use	PSA = personal accounts
NUM = number of respondents with site as favourite	SEC = security offered
POP = popularity	WSA = web site appearance

For an example to interpreting this table, thirteen respondents designated Buy.com as their favourite web site. The reasons that were listed by each of these thirteen participants are given in the ten columns to the right of the *NUM* column. In this example, seven of the thirteen respondents who chose buy.com as their favourite site thought that one of the appealing features was the web site appearance while all thirteen found the price to be an appealing aspect. Although the reasons for a favourite site varied between the respondents, the two most consistently popular reasons were price of item and ease of use of the web site.

4.2.2 Results Obtained from Surveys Distributed at the SPSE

The survey conducted in the UK also consisted of seven questions, with the exact same wording and options as those asked of the surveyed population at WPI in the US. The standard responses that were provided differed since the web sites that the respondents at the SPSE were likely to have visited were different from those at WPI. The survey made a distinction between those respondents that had shopped online and those that had not made a purchase online. All respondents answered three of the survey questions while only students who had participated in e-commerce answered the other four questions. The following section only describes the results from the SPSE survey responses; the surveys will be compared and analysed later on in the report in Section 5.2.

4.2.2.1 Demographic Data Regarding SPSE Survey Respondents

As with the survey conducted at WPI, the first question of the SPSE survey served to gather essential demographic information. This question determined that the sample population was made up of 82% male and 18% female students. The age breakdown was found to consist of 13% aged 18 or below, 19% aged 19, 23% aged 20, and 45% aged 21 or older.

The surveys indicated that 31% of the sample population was enrolled at the SPSE as general engineering students while 29% of the survey participants were mechanical engineering majors. Computer science and electrical engineering were each listed as majors by 14% of the survey respondents. The participants listed fourteen unique majors. Official enrolment figures were not available from the SPSE. The demographic

information that would be required to verify that the sample population was representative of the SPSE student population as a whole is not information that King’s College distributes. However, the sampling techniques utilised at WPI and the SPSE were quite similar. Approximately 12% of each student body was administered and responded to our survey. Section 4.2.1.1 details the representative nature of the sampling that was achieved at WPI. While the same cannot be proven at SPSE, it is reasonable to expect similar representation at SPSE given the similarity in distribution methods.

4.2.2.2 Results Obtained from all SPSE Survey Respondents

The second question on the survey administered at the SPSE was identical to the second question on the survey given at WPI: ‘From where do you access the Internet?’ A majority of the respondents, 92%, access the Internet from a computer on campus at King’s College of London. A permanent residence was chosen by 63% of the surveyed students as a location from where they accessed the Internet and student residences were used by only 22% of the sample population.

Each respondent also answered the final question of the survey. The respondents were asked, ‘Do you have any concerns regarding online shopping?’ The percentage of respondents who chose each concern is given in Table 4-11.

Table 4-11: Concerns Regarding E-Commerce Expressed Among UK Survey Respondents

Concern	Students (%)	Concern	Students (%)
Internet security	62	No/slow access to Internet	15
Difficult to return items	40	Impersonal	15
Do not trust retailers	32	Price	11
Slow delivery	21	No interest	10

As shown in Table 4-11, the top four concerns among SPSE students were Internet security, difficulty in returning items purchased online, lack of trust in Internet retailers (i.e. fear of fraud, uncertainty of retailer reputation), and slow delivery. These aspects were concerns for 62%, 40%, 32%, and 20% of respondents respectively.

4.2.2.3 Results Obtained from SPSE E-commerce Users Only

Only respondents who had participated in e-commerce answered the remaining four questions. The first of these questions was ‘How often do you purchase items online?’ Among SPSE students, only 47% of had made an online purchase. Among all students, 19% shopped less than once a year while 20% shopped over two times a year.

The next question looked at the sites e-commerce users had visited, purchased from and would purchase from again. The most frequently visited sites by the SPSE students as well as the percentage of students who visited them are shown in Table 4-12.

Table 4-12: E-Commerce Web Sites SPSE Students Have Visited

E-Commerce Web Site	Students (%)
amazon.co.uk	81
uk.yahoo.com	45
egg.com	29
bol.com	28
shopsmart.com	18

From Table 4-12, we identified the five most frequently visited sites by the SPSE students. We next examined these sites to determine how many of these students were actually purchasing items from the site and investigated whether or not they would return to the site to purchase items again. The percentages for the students who had purchased an item from that site are based on the number of students who had visited the web site. The

percentages for students who would purchase from the web site again are based on the number of students who had purchased from the web site. This information is presented in Table 4-13.

Table 4-13: E-Commerce Web Sites SPSE Students Have Purchased from and Would Purchase From Again

E-Commerce Web Site	Students who Have Purchased From Site (%)	Students who Would Purchase From Site Again (%)
amazon.co.uk	59	89
uk.yahoo.com	30	77
egg.com	29	50
bol.com	44	83
shopsmart.com	11	100

Table 4-13 shows that amazon.co.uk had 59% of the students visiting the site purchasing a product from the web site while bol.com placed second with 44% of its visitors purchasing from the site. Shoppmart.com had all students who had purchased an item online indicate they would purchase from the site again, however only two students have purchased from the site. Amazon.co.uk placed second in terms of satisfying students for future purchases with 89% of amazon.co.uk shoppers indicating they would purchase from the site again.

The fifth and sixth questions on the survey were closely related. Question five asked the sample population ‘What is your favourite site for purchasing items online?’ while the subsequent question inquired ‘Why is this site more appealing than other online shopping web sites?’ Among the e-commerce users, only 66% listed a favourite site. Table 4-14 lists the top five sites SPSE students selected as favourites, and the reasons why the site was selected. The column labelled *NUM* indicates the number of students out of the 98 e-commerce users who specified the site in the left column as their favourite.

Table 4-14: SPSE Students Favourite Web Sites and Reasons

Site	NUM	CUS	EAU	POP	PRC	PSA	SEC	WSA
amazon.co.uk	12	4	7	4	11	3	4	3
jungle.com	5	1	4	3	5	2	1	4
amazon.com	4	1	3	3	1	1	3	1
cdnow.com	4	0	1	0	4	1	0	1
dabs.com	3	1	2	0	3	0	0	0

Table 4-15: Key to Abbreviations Used in Table 4-14

CUS = customer service	PRC = price of items
EAU = ease of use	PSA = personal accounts
NUM = number of respondents who listed site as favourite	SEC = security offered
POP = popularity	WSA = web site appearance

In this example, four of the five respondents who chose Jungle.com as their favourite site asserted that one of the appealing features was the web site appearance while all five found the price to be an appealing aspect. A complete comparison of the surveys can be found in section 5.2.

4.3 Interview Results

As described in Chapter Three of this report, we chose interviews as a method from which we would determine not only the motivation some e-commerce users had for shopping online but also the concerns that prevent some Internet users from shopping online. Additionally, through conducting interviews, we were able to obtain data from a broader range of the UK's population than we did from the surveys. We were able to obtain fifty-six completed interviews at Internet cafés in London. The following sections detail the principal results that were gathered during the interviewing process. The complete results of the interviews are located in Appendices H, I, and J.

4.3.1 Demographic Data from Interviewees in the UK

The demographic information that we asked of interview participants, sought the age, gender and occupation of interviewees. The interview sample consisted of 69% males and 31% females. In addition, most of the interview respondents were between the ages of fifteen and thirty-four. The breakdown of the percent of interviewees with age brackets is shown in Table 4-16.

Table 4-16: Percentage of Interview Respondents for Each Age Bracket

Age Bracket	Interviewees (%)
15 – 24	38
25 – 34	43
35 – 44	5
45 – 54	11
Over 55	3

During the course of our interviewing, we experienced a response rate of about 43%. While this is a good response rate, there is still the possibility of some non-response bias. The non-respondents might disproportionately represent certain attitudes or behaviours. The interview consisted of either eighteen or seventeen questions, depending on whether or not the interviewee had made an online purchase. The only drawback to our interviews was that the interviewees were not likely to be representative of Internet users as a whole.

4.3.2 Results Obtained from All Interviewees

The first eight questions of the interview form were standard for all fifty-six interview respondents. A preliminary question served to determine whether potential respondents were residents of the UK. This was because we were concerned particularly

with the opinions and concerns of potential ShopSmart users. Internet café patrons that did not live in the UK were not interviewed.

The second question was ‘How long have you been using the Internet?’ Most of the interviewees were comfortable using the Internet and had been using the Internet for over two years. The percentage of interviewees and amount of time they have been using the Internet is shown in Table 4-17.

Table 4-17: Length of Use of the Internet Among All Interviewees

Length of Internet Use	Interviewees (%)
Less than 2 years	25
2 – 5 years	57
More than 5 years	18

The third question asked was ‘How often do you access the Internet?’ The question was asked to see how often people actually used the Internet. The listing of use amounts and the percentage of interviewees who fell within the categories are shown in Table 4-18.

The fourth question asked ‘From where do you have access to the Internet?’ All respondents used Internet cafés and 25% accessed the Internet from their home. The third most common place to gain Internet access was at work, from where about 23% of the sample population accessed the Internet.

The fifth question asked ‘What are your main purposes for using the Internet?’ Among the interviewees, 80% named e-mail as a reason that they went online. Research, in a variety of areas, was the second most common response with 32% of respondents citing it, while other popular responses included surfing and work.

Table 4-18: Access of the Internet Among All Interviewees

Access to the Internet	Interviewees (%)
Once a day	52
1 – 2 times a week	18
3 – 6 times a week	25
Less than once a week	5

The next question examined the traditional shopping methods that attract the consumer. For each of the five traditional shopping methods – street markets, small shops, large shops, factory outlets, and catalogue shopping -- the interviewees were asked if the methods if they enjoyed doing each type of shopping. We found that the three most popular methods were small shops, large retail shops, and street markets in which 71%, 61%, and 57% of all respondents said they enjoyed using those methods.

The remaining two universally answered interview questions were regarding e-commerce. The first served to determine the level of familiarity with e-commerce among the participants. Of the interviewees, 68% said they were familiar with e-commerce while 32% of the interviewees were not familiar with e-commerce. When asked whether they had purchased an item online, only 43% of interviewees had actually purchased an item online. The remaining 57% had never purchased products over the Internet. After determining which patrons were e-commerce users and which were not, the interviews took two different forms. The results of the interview questions specific to e-commerce users are located in Section 4.3.3, while the results outlined in Section 4.3.4 are those obtained from non e-commerce users.

Following the questions focusing on e-commerce use, a question was asked regarding methods of advertising that might possibly be used by e-commerce companies. For each of the six advertising options -- billboards, radio spots, TV spots, Internet

advertisements, newspapers and transportation (i.e., the tube and/or buses) ads -- the interviewees were asked if the methods attracted their attention. The top two methods of advertising among our sample population were newspaper ads and billboards. Newspaper ads attracted 70% of all respondents, whereas billboards were shown to attract 68% of all respondents. The advertising method that was least likely to catch the attention of our respondents was radio spots, which were found to be unappealing to around 62% of respondents.

The next question inquired about methods of e-commerce. We were interested in determining which types of online retailing the respondents were either aware of or had used for online purchases in the past. Price comparison shopping on the Internet was the most familiar to our respondents. Approximately 46% of all participants were familiar with or had taken advantage of the price comparison method of online retailing. Auctions and portals were also familiar to 30% and 23% of interviewees respectively. When asked which of these was the most appealing, price comparison utilities came out on top with 25% of all participants. Portals were the most appealing method for 10% of interviewees.

An area of interest to ShopSmart was whether shopping for products via a mobile phone over the Internet would be of interest to consumers. This question was asked of all interviewees, and it was found that 48% of the sample population had some interest in using their phones to access the Internet.

The final question that was asked of our sample population was regarding concerns that they had about e-commerce. Internet security was the main concern as it was mentioned by 59% of interviewees. Lack of trust in retailers was mentioned by 20% of the interviewees and placed second. No interest in e-commerce placed third with 14% of the

interviewees citing the reason. Complete details of these results of this and all other universally asked questions are available in Appendix H.

4.3.3 Results Obtained from E-commerce Users

After determining if interviewees had purchased an item online, we asked ‘What sites have you purchased an item from?’ Some people could not name any specific sites but knew what types of items they shopped for online. The most popular site was amazon.co.uk, while travel related sites were mentioned by 42% of e-commerce users, and online bookstores had 38% of interviewees citing the category. Other sites of interest included music stores, which attracted 17% of online shoppers.

From the question ‘Which of the sites that you have bought from is your favourite?’ only seven people specified a favourite site. Amazon.co.uk, easyjet.com, and uk.yahoo.com each had two customers indicate them as favourites. The most common reasons for these sites were the price of the items, the products offered, the easy of use of the site, and personalisation.

For those users who did not specify a favourite site, they were allowed to specify reasons why they tended to purchase from the sites they shopped at. Price and convenience were the most popular responses with 31% of e-commerce users mentioning each reason. The products offered by a site were also mentioned, being cited by 25% of e-commerce users. The complete responses to these questions are summarised in Appendix I.

4.3.4 Results Obtained from Non E-commerce Users

Those interviewees who indicated that they had not purchased items online were asked a series of four questions that differed from those asked of e-commerce users. The full results of these questions are located in Appendix J; highlights of pertinent results are presented here. An inquiry was made as to whether members of this group of respondents had ever visited an e-commerce web site. Approximately half of the respondents who had not shopped online had visited an e-commerce site. This portion of people was asked where they heard about the site that they visited as well as the reason that they did not purchase an item online. The percentage of respondents who indicated hearing about sites by word of mouth from friends and through advertisements is 25% and 13% respectively.

Non e-commerce users, who indicated that they had not visited an e-commerce web site, were asked their reason for not visiting. The most popular response, with 43% of interviewees mentioning it, was that of no interest in e-commerce. Other popular responses included 21% of people who were not familiar with e-commerce, and 14% of people who would rather shop at stores themselves.

From these results presented in this chapter, we performed detailed analyses of the data. The analysis of the web sites, surveys, and interviews as well as the integrated analysis we performed will now be discussed.

Chapter Five: Analysis

This chapter details the analyses conducted of the results presented in Chapter Four. A detailed analysis was conducted of the data gathered from the web site analyses, WPI and SPSE surveys, and interviews conducted of UK residents. An integrated analysis was also performed which brought together the data collected during each step of our methodology. The conclusions and recommendations specified in Chapter Six are based on the results of these analyses.

5.1 Web Site Analysis

Following the collection and examination of all of the web site data, an analysis was conducted of the results. A number of the aspects of e-commerce web sites that were studied during the data collection were compared to determine areas of strength, weakness, as well as to discover any unique areas that may have been particularly interesting and appropriate to the formulation of our conclusions. The bases for some of these comparisons were established by the results of other analyses, including those of surveys and of interviews.

5.1.1 Analysis of the Clarity of Security Policies of Analysed E-Commerce Sites

From the results presented in Section 4.1.2, it was determined that the UK sites tended to be more aware of issues surrounding Internet security than the US sites. Our average security policy rating, described in Section 3.1.2, for e-commerce web sites in the UK was 4.07 while US based web sites earned an average rating of 3.75. Of the fifteen UK based web sites that were analysed, seven sites earned a security policy rating of five

by placing their security policy link at the top of the first page of their web site. Only three US based web sites earned a security policy rating of five. This might indicate that Internet security is better recognised as a concern of UK residents than of US residents.

The next step was an examination of the clarity of security policies on web sites offering various methods of e-commerce. Table 5-1 shows the methods of e-commerce and the percentage of sites offering those methods that earned a security rating of five.

Table 5-1: Clarity of Security Policies on a Variety of E-commerce Web Sites

Type of E-Commerce Site	Sites with a Rating of Five (%)
Auction	100
Retailer	70
Price Comparison/Portal	29
Group Buying	0

According to our research, auction sites were the most direct in conveying their security policies. Auction sites involve a large amount of consumer-to-consumer commerce. Internet users might tend to be apprehensive about purchasing from an unknown merchant; therefore, an auction site that guarantees the security of the participating merchants could potentially avoid losing customers concerned with security. This is a possible explanation as to why the auction sites that were analysed earned such a high security policy rating.

Retail sites also earned a high security policy rating. By offering the security of the web site up front, retail sites are able to win over potential new customers. Loyal customers that are familiar with the web site are likely to be aware of the retailer's security policy, and need not be continually concerned with whether the site is secure.

Not all portals and price comparison sites sell directly to the consumers. For these sites, a high security policy is not a major concern because consumers are likely to associate security with the location they purchase items from. For a web site that sells directly to the consumer, providing assurance that consumers are protected when purchasing an item from them is a key factor in maintaining customers and gain new customers.

5.1.2 Shopping Experiences on Sites Offering Different E-Commerce Methods

As part of the web site data collection, at least two members of our group probed each web site from a consumer perspective by completing a simulated shopping experience. This analysis was used to obtain an idea of how simple each web site was to use, as well as to record any impressions users may have had of the shopping experience from a consumer perspective. These impressions were recorded in terms of the different methods of online shopping, including auctions, portals, direct retailers, and group buying.

During the course of these shopping experiences, we discovered and recorded a variety of observations about a number of different types of e-commerce sites. We found that, in general, product searches conducted on portal and price comparison web sites were likely to yield several, useful results. An additional benefit of portal and price comparison web sites was the option to sort search results according to price, availability from retailers, and shipping time. There were several options provided by price comparison and portal shopping sites that allowed the consumer to be specific about the item they wished to purchase, such as the brand of an item the user was looking to purchase.

In contrast with the variety of products available through portals and price comparison, online auctions provided a limited variety of merchandise; due to constantly changing number and nature of the auctions taking place, these sites were often found to be offering a limited selection of products during any given visit. Additionally, the changing prices of items being auctioned was found to be a drawback, in that there was no guarantee that a price would stop increasing or that the users bid would be the highest, and therefore 'winning' bid. However, auction sites were found to provide an advantage where rare items or versions of items were concerned.

We also investigated direct online retailers as part of our shopping experiences. Direct online retailers included sites such as amazon.co.uk, argos.co.uk, and others. These sites did not re-direct consumers to other sites to purchase products. It was found that direct retail sites provided the consumer with a reasonably easy to use interface, directing the consumer to the desired product through a series of menus or through a search utility. However, the price of products offered on direct retail sites were not negotiable and did not always carry the biggest savings.

The final type of site that we investigated as part of our simulated shopping experiences was a group buying site. The investigated group buying web sites were observed as, generally, offering a limited variety of products. It was also found that group buying web sites were not helpful to consumers wishing to find products outside of categories such as appliances and electronics. For the most part, even these core group buying categories were not all inclusive; the products were limited in brand and model to those that were available to be deeply discounted. Therefore, these sites were likely to be

most useful for people interested in bargains but not necessarily looking for a specific brand or model.

5.1.3 Unique Selling Points and Appealing Services of E-Commerce Web Sites

Another aspect of our web site analysis was the determination of any unique selling points (USPs) of the evaluated web sites. These USPs were attractive ways in which the web sites maintained and attracted customers. Unique features offered on various sites are described on this section.

Amazon.com and barnesandnoble.com are two of the studied e-commerce sites that offer electronic cards (e-cards), online greeting cards, in addition to the other products they sell. These cards can be sent from the web site that offered them to any e-mail address specified by the user. In this way, consumers are able to send personalised online cards on occasions such as birthdays, holidays, or just to say hello. Btspre.com and uk.yahoo.com are examples of UK sites that have implemented e-cards.

Another interesting feature was that of community sections. These community sections allowed consumers to interact with each other and not just the web site. Methods in which this was accomplished included allowing consumers to write reviews of retailers and products offered on the web site. In addition, one particular site had a real time message board to allow consumers to chat with each other regarding shopping issues.

Amazon.co.uk was found to be WAP compatible. This allowed consumers to browse and purchase products from the web site by using their WAP enabled mobile phone. This added to the convenience offered by the site, as consumers did not have to be at home in front of their computer to purchase products.

A particular USP offered on barnesandnoble.com was e-books. With this option, a subscriber can download and view the entire contents of a book or magazine on a specially designed handheld device. This handheld device, called the Rocket Book, must be purchased from barnesandnoble.com before a book can be downloaded.

The opportunity for personalisation on a number of web sites was also found to be an attractive feature. One site that offered a unique personalisation of a shopping cart at the time of our study was uk.yahoo.com. This electronic shopping cart allowed customers to select products from several retailers' web sites, but to complete the purchase at uk.yahoo.com by entering order information only one time.

The US site, buy.com, offered a personalisation option in each of its product categories. Consumers were able to personalise each of these product categories to their individual preferences. The personalisation included a listing of favourite stores, and announcements regarding new products offered at those stores. This information could be beneficial to the consumer who favoured these products.

5.1.4 Analysis of ShopSmart's Web Site

To gain an idea of how ShopSmart's web site compared to the web sites included in our analysis, an extensive review and analysis of ShopSmart.com was performed. This section describes relevant features found on ShopSmart.com as well as features of other web sites that are absent from ShopSmart.com.

Reviews of new and popular items were found towards the middle of ShopSmart's web page. Each introductory review included a picture of the item, and offered the option to view the entire review, or compare prices for that particular item. These product

reviews were found to change frequently. No other price comparison or portal site offered this feature.

ShopSmart's home page also consisted of four items that were found on all pages within their web site. The product categories offered by ShopSmart were listed on the left hand side of the web page, while bestseller lists in three categories appeared on the right hand side of the site. In addition, a search utility was available to find specific retailers listed in the portal. This utility accepted either the full name of retailers or partial titles to aid consumers unsure of specific names. The fourth item that was always accessible to consumers was the price comparison agent.

The first of the items described above, the product listing, was available to ShopSmart.com's visitors from any page of the web site. This contributed to ease in navigation through the web site. Although there were over 1900 retailers listed in fourteen categories on ShopSmart's web site as of May 2000, new retailers were being added daily. The readily available product listing served to bring users to retailers carrying items in the selected category. This made the shopping experience simpler and therefore, more convenient. In addition, the list of retailers was sorted according to the ranking each site earned from ShopSmart's standardised rating system

Bestsellers lists were offered for books, videos, and albums. In addition, links to a complete list of bestsellers for each category were included. These lists offered additional information about specific items and price comparisons could be conducted for each of the best-selling items.

At the time of our research, May 2000, the price comparison agent performed comparisons in four different categories: books, music, DVD & video, and video games.

There were nine shops participating in book price comparisons, four shops in the DVD and video category, six in the music category, and seven shops participated in video game comparisons.

ShopSmart also offered assistance to new or inexperienced users of their web site. A unique feature called *Live Assistant* – a tool to aide users of the web site in finding the item that they were looking for – served this purpose. When consumers had an enquiry about where to find a specific item or type of item, they chatted, in real time, with a ShopSmart employee with knowledge of the shops listed on ShopSmart.com. The employee was on hand to walk consumers through troubles they encountered while visiting ShopSmart. Another feature geared towards the inexperienced Internet user was a site tour. This tour served to familiarise consumers with the web site itself.

Although ShopSmart was found to offer an effective web site with an extensive number of features, some possible negative aspects were encountered during our analysis. The main disadvantage of ShopSmart's web site was the number of product categories in which price comparisons could be performed. While ShopSmart offered four categories in their price comparison program, the other price comparison web sites analysed were found to compare prices in up to thirteen product categories. Users that desired to find an item that did not fall into one of the four price comparison categories could only be directed to online retailers. The result was the consumer searching for the lowest price among retailers listed in the directory. Another weakness of ShopSmart's web site was the lack of options for personalisation. Many of the web sites involved in our analysis offered users the opportunity to register or become a member of their web site. Some of these sites offered benefits to registered users, including discounts and email notification of new

products. Personalisation of a web site could result in the web site treating each user as an individual and thus lessening a user's perception of online shopping as impersonal. After performing the web site analyses, similarities and differences among the surveyed populations were examined.

5.2 Survey Analysis

The purpose of conducting surveys at WPI in the US and SPSE in the UK was to gather information that would be comparable in some way. We made comparisons regarding similarities and differences between the data from the schools. To make this type of comparison, it was necessary to ensure that the sample populations were related. The sample size that we obtained from both WPI and the SPSE indicated that we could be 90% certain that any correlations made between the data sets were representative of the entire population at each school respectively.

5.2.1 Analysis of Demographics

The demographics described in Sections 4.2.1.1 and 4.2.2.1 indicated to us that, for the most part, the data collected via the surveys was representative of the respective school's population. At each university, respondents were likely to have been exposed to technology due to the fields in which they were studying. However, not all of the student respondents were enrolled in a major which would give them direct exposure to technology; in addition, no definite resolution of a question as to whether all students in a particular major were comfortable using computers or related technologies was possible.

Another limitation of the surveys, due in part to the nature of the universities we

sampled from, was that the surveys respondents from both schools were over 75% male. Although this is representative of student enrolment at WPI and the SPSE, it may have added some amount of bias when the survey questions were analysed. Research has shown that males have a greater tendency to shop online than females; thus our largely male sample populations could potentially have boosted the number of e-commerce users at the schools.

A third limitation of the surveys was that they were asked of people who were not likely to have a significant income at the time. Thus, students with financial limitations may not have purchased online as often during their college years as they would after graduation. Students, who responded that they had not purchased an item online, were not asked if they had ever visited an e-commerce web site.

5.2.2 E-commerce Usage at WPI and SPSE

To become familiar with the differences of e-commerce usage among respondents from both schools, we examined how often students at each school had purchased an item online. The frequency of e-commerce usage is shown in Table 5-2.

Table 5-2: Student Usage of E-commerce

Online Purchase Categories	WPI Students (%)	SPSE Students (%)
Never	26	53
1-2 times ever	23	19
1-2 times per year	8	9
2-5 times per year	22	11
Over 5 times per year	21	8

From the data in Table 5-2, we determined whether a correlation between the number of times students had shopped online and the university they attended existed. The

correlation coefficient calculation resulted in a value of 0.56. This value indicated that a moderate relationship existed between the schools students attended and their usage of e-commerce.

To clearly understand how the shopping frequency categories were related between the schools, we performed a significance test by testing the null hypothesis. After hypothesising that no difference existed between the student populations at WPI and SPSE, we calculated the *z* value for each shopping category based on the percentage of each school’s population within that category. Any *z* -value within the range of ± 1.96 indicated that we could be 95% certain that the difference between the two school’s populations was due to sampling error. If the *z* value was outside the given range, a genuine difference existed between the populations. The *z* values calculated for each online shopping frequency are shown in Table 5-3.

Table 5-3: Comparison of WPI and SPSE Online Purchases

Online Purchase Categories	Z value
Never	-6.35
1-2 times ever	1.15
1-2 times per year	-.18
2-5 times per year	3.13
Over 5 times per year	4.35

From Table 5-3, we see that SPSE has a significantly more number of students who have never purchased online. WPI has a larger student population who uses e-commerce over two times a year. For students who have purchased online once or twice ever or who have purchased items once or twice a year, there is no difference in the sampled population. These results are consistent with the information from our literature review that online shopping is more common in the US than in the UK.

5.2.3 Data Comparisons Regarding Internet Access

To understand the usage of e-commerce among the surveyed students, we analysed their access to the Internet. Since Internet technology has been in existence in the US for a longer period than in the UK, students in the US may have had more opportunities to access the Internet. The number of places that students can access the Internet, as shown in Figure 5-1, was divided into three categories of accessible places: none, one or two, and over two.

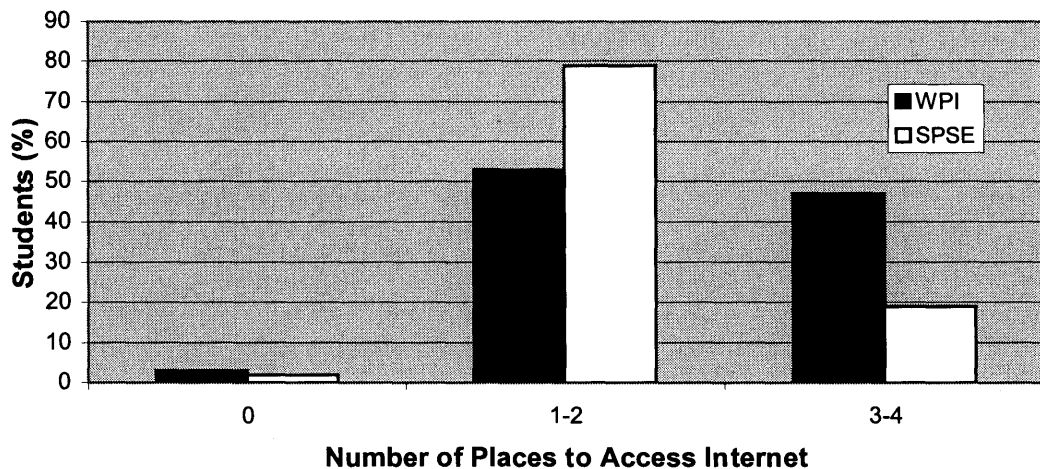


Figure 5-1: Number of Places to Access the Internet for WPI and SPSE Students

Figure 5-1 shows that a higher percentage of WPI students have three to four places to access the Internet while the majority of students at the SPSE have one or two places to access the Internet. We performed a correlation test between the percentage of students who fell into each access category and the school they attended. This test resulted in an r -value of .90 indicating that there was a strong relationship between the school affiliation and the ease of accessing the Internet. To determine whether each access category at WPI is similar or different to the same category at SPSE, we performed a null hypothesis test. The z values from this test are shown in Table 5-4.

Table 5-4: Z Values for Students' Access to Internet

Number of Places to Access the Internet	Z Values
0	- 1.59
1 – 2	- 6.47
3 – 4	5.05

Table 5-4 shows that there is a significant difference in the number of places students at WPI and SPSE have access to the Internet from. Most SPSE students have one or two places to access the Internet while the majority of WPI students access the Internet from three or four places. With the limited number of places from which they access the Internet, it seems reasonable that SPSE students might take part in e-commerce less often than WPI students.

5.2.4 Comparison of the Number of Concerns Expressed by Surveyed Populations

The next method by which we compared e-commerce among the schools was to examine the number of concerns the surveyed students expressed. We grouped the number of concerns into zero concerns, few concerns (one or two), and many concerns (three or more). The graph of this data is shown in Figure 5-2.

Figure 5-2 shows that a higher number of WPI students have fewer concerns regarding e-commerce than students at SPSE. This may come from having been exposed to the Internet and e-commerce for a longer period than the SPSE students. From the graph, it is evident that, overall, most students had some concerns regarding online shopping. This indicated that there could be a lot done to appease both the student users and non-users of e-commerce.

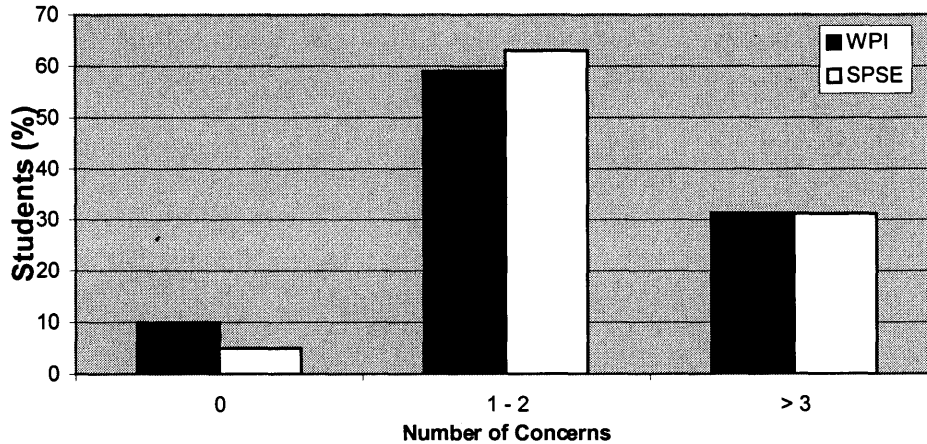


Figure 5-2: Number of Concerns of Students at WPI and SPSE

A comparison between WPI and SPSE students required verification of whether a difference existed between the schools' population. We used the null hypothesis to complete this verification. The calculated z values are shown in Table 5-5.

Table 5-5: Comparison of Number of Concerns for WPI and SPSE Students

Number of Concerns	Z Value
0	2.03
1 – 2	-.92
> 3	.01

Table 5-5 shows that the populations expressed concerns regarding online shopping differed only with the number of students who had no concerns regarding online shopping. For students who had concerns regarding online shopping, there was no difference between the two populations.

5.2.5 Analysis of Types of Concerns About E-Commerce

When analysing the concerns about e-commerce of WPI as well as the SPSE students, we looked to see if the concerns the students had about online shopping were

similar. A statistical test was conducted to see if the percentage of students with a specific concern was correlated with the school they attended. This test resulted in an r -value of .90. Given the number of students sampled, this indicates that a strong relationship exists between the students of each school and the concerns that they held. Figure 5-3, plots the percentage of students who indicated particular concerns about e-commerce.

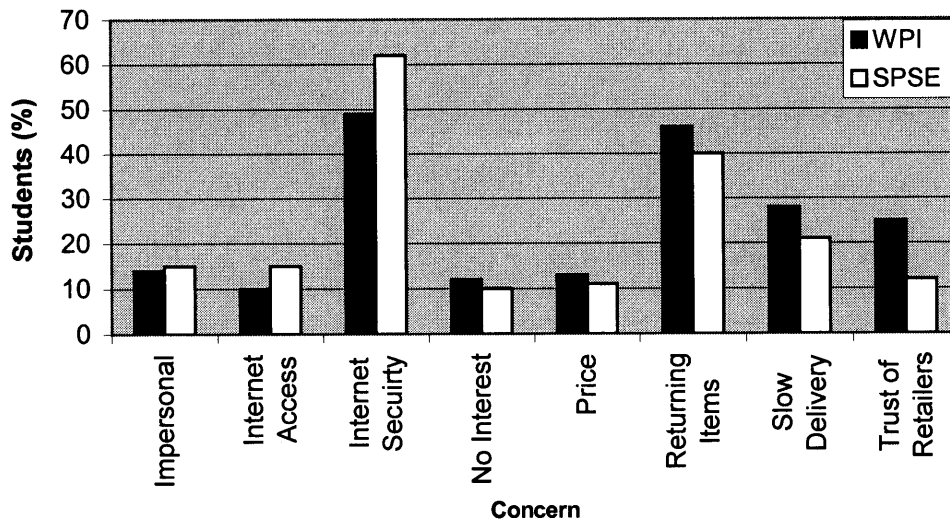


Figure 5-3: Concerns Among Students Regarding E-commerce

Figure 5-3 indicates that the top three concerns among respondents from each school were Internet security, difficulty in returning items and slow delivery. A null hypothesis was performed for each concern to determine if there was a significant difference in the number of respondents. The results are shown in Table 5-6.

Table 5-6: Comparison of WPI and SPSE Concerns

Concerns	Z value
Impersonal	- .33
Internet access	- 1.89
Internet security	- 2.95
No interest	.55
Price	.53
Returning items	1.40
Slow delivery	1.81
Trust of retailers	- 1.68

According to Table 5-6, the only concern that there existed a difference among between the surveyed populations was that of Internet security. SPSE students were more concerned with giving out their credit cards than WPI students. This could be another reason why WPI students have purchased products online.

5.2.6 Analysis of Popular US Based Sites in the UK

Although there are numerous e-commerce web sites in the US and the UK, we selected those sites that were most commonly known in the US and the UK. A comparison of the percentage of students who have shopped online and visited US based was conducted. The top four US web sites that also had a domain in the UK and the percentage of students who had visited the domain within their country is shown in Table 5-7.

Table 5-7: Percentage of Students Visiting US based sites

E-Commerce Web Site	WPI Students (%)	SPSE Students (%)
Amazon	81	81
Ebay	70	16
Cdnw	46	6
Yahoo	2	45

From Table 5-7, we see that Amazon has the same popularity in the UK as it does in the US. On the other hand, Yahoo has a stronger e-commerce presence in the UK than the US. The differences between the populations are shown in Table 5-8.

Table 5-8: Z Values of American Sites Implemented in the UK

E-Commerce Web Site	Z Value
Amazon	0
Ebay	14.84
Cdnw	12.21
Yahoo	-12.15

The z values, shown in Table 5-8, for each web site were calculated to test the null hypothesis. The only site that was found to have no difference in the percentage of the schools' populations that had visited it was Amazon. For the other three American based sites, a wide difference exists between WPI and SPSE students. Ebay and cdnow are much more popular in the US than in the UK. However, Yahoo was found to be a preferred e-commerce site among respondents in the UK. The large difference in usage of the site is interesting because US based sites offer more services in the US before they offer the same services in the UK.

5.2.7 Analysis of Reasons Particular Web Sites were Favoured by Respondents

To gain a better understanding of what makes students of each school prefer a certain e-commerce web site, we analysed the reasons each population gave for favourite web sites. The reasons obtained from each school are shown in Figure 5-4 and the abbreviated reasons are explained in Table 5-9.

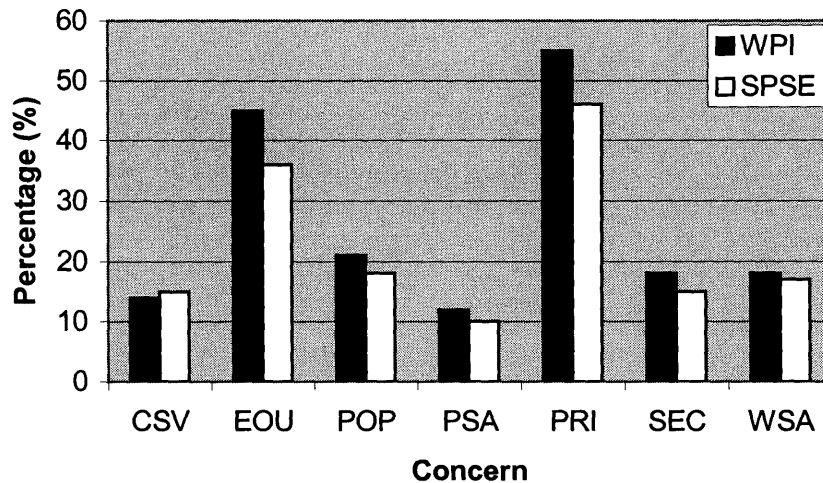


Figure 5-4: Reasons for a Favourite E-commerce Web Site

Table 5-9: Z Values for Favourite Web Site Reasons

Abbreviation	Reason for Favourite	Z Value
CSV	Customer service	-0.29
EOU	Ease of use	2.08
POP	Popularity	1.05
PSA	Personal accounts	1.15
PRI	Price of items	2.02
SEC	Security offered	0.91
WSA	Web site appearance	0.47

To understand whether a difference exists between the school populations, we performed a null hypothesis test. The results of this test are shown in Table 5-9.

It is clear from Table 5-9 that students of both schools have similar reasons that make a particular e-commerce web site their favourite. The reasons that were similar for both of the surveyed population were web site appearance, customer service offered on the site, and the security presented on the site. Features of a web site that were more popular among the WPI students were ease of use of web sites and sites that offered the students prices at which they were willing to purchase products.

5.2.8 Summary of Survey Analysis

To summarise, the key findings of the survey analysis are listed as follows:

- More WPI students use e-commerce and use it more often than SPSE students.
- WPI students had fewer concerns about online shopping.
- The top three concerns at both schools were Internet security, Difficulty in returning items, and not trusting retailers.
- The two most appealing aspects of web sites at both schools were price of an items and the ease of use of a site.
- Not all US based sites had the same popularity among SPSE students as they had among WPI students.

5.3 Interview Analysis

The interviews of UK residents provided us with a method through which we were better able to understand the interviewed population shopped online and how to best attract their attention. The interviews were limited in number, and we were unable to draw conclusions to link the interviewed sample to the overall population of the UK. However, the results of these interviews provided another method with which to support data obtained from surveys and web site analysis.

5.3.1 Purposes for Using the Internet

One method we used to determine what was important to the interviewed group was to establish what they used the Internet for. The respondents' usage of the Internet is shown in Table 5-10.

Table 5-10: Interviewees Reasons for Using the Internet

Purposes	E-Commerce Users (%)	Non E-Commerce Users (%)
Work	21	16
Shopping	4	3
News	8	16
E-mail	92	72
Research	29	34

Table 5-10 shows that the main purpose people had for accessing the Internet was e-mail. Members of the sample population who had been using the Internet for a short period utilised e-mail to become familiar with the Internet. Using the Internet for research purposes was a distant second for both groups. The next question we asked in the interviews was regarding methods of traditional shopping that appealed to the sample population.

5.3.2 Preferred Method of Shopping

One aspect of determining why people did or did not shop online was establishing general shopping preferences. A comparison of e-commerce users and non-users who indicated that they liked certain methods of shopping is shown in Table 5-11.

Table 5-11 Appealing Shopping Methods for E-Commerce Users and Non Users

Shopping Method	E-Commerce Users (%)	Non E-Commerce Users (%)
Street Markets	54	59
Small Shops	71	72
Large Retail Shops	58	63
Factory Outlet	23	22
Catalogue Shopping	12	13

Among both e-commerce users and non-users, the preferred shopping venue was small shops while the second most preferred shopping location was that of large retail shops. This seems to indicate that the interviewed people preferred store based shopping. The data in Table 5-11 also seems to show that newer methods of shopping, factory outlets and catalogue shopping, were not as well liked among respondents. As stated by de Mooj in Section 2.5.1, UK consumers prefer social methods of shopping. Popular e-commerce web sites in both the US and the UK have added features that make consumers feel as though the shopping experience at their web site includes elements of personal interaction with other consumers.

5.3.3 Appealing Methods of E-Commerce

To analyse consumer' knowledge about the various methods of e-commerce, we asked e-commerce users if they had used a particular method of e-commerce. Non e-commerce users were asked if they were aware of each particular method. The data from these questions is shown in Table 5-12.

Table 5-12: Use and Awareness of E-Commerce Methods by Online Shoppers and Non-Shoppers

Method of E-Commerce	Use Among Online Shoppers (%)	Awareness Among Non-Shoppers (%)
Auction	12	44
Forums	4	25
Group Buying	4	34
Portals	20	25
Price Comparison	44	47
Reverse Auction	8	25

Table 5-12 demonstrates that the main method of e-commerce that interviewees were either aware of or had used was price comparison. The next most familiar method differed between e-commerce users and non-users. E-commerce users indicated that portals were the second most utilised method of e-commerce while the second highest percentage of non e-commerce users was familiar with auctions as a method of commerce used on the Internet.

Only 42% of interviewees selected a method when asked which particular method of e-commerce was the most appealing to them. As stated above, the most popular method between both groups of interviewees was price comparison. People noted its convenience and price saving ability. Tied for second were auctions and portals. Portals were selected because the retailers offering the items consumers were looking for were all in one place. Auctions were selected because consumers could stop paying the price for the item when they wanted to.

5.3.4 Concerns About E-Commerce Among Internet Users

Based on the survey data, we understood that concerns about e-commerce existed among both users and non-users. A comparison similar to the one that was made for concerns among the surveyed populations was made between our groups of interviewees. Table 5-13 details the concerns among the interviewed population with the percentage of respondents expressing each concern.

From Table 5-13 we see the main concern among both e-commerce users and non-users is Internet security. It is also clear from Table 5-13 that there are differences between the concerns expressed by e-commerce users and non-users. When people had

purchased online, returning a product bought online was a concern held by a number of interviewees had. A number of interviewees who had not purchased an item online expressed that they simply had no interest in e-commerce.

Table 5-13: Concerns of Interviewed People

Concern	E-Commerce Users (%)	Non E-Commerce Users (%)
Internet security	56	59
No interest	0	25
Do not trust retailers	12	16
Slow delivery	12	10
Difficult to return an item	12	0

5.3.5 Mobile Phones in E-Commerce

The last issue that was analysed through the interview data was the usage of mobile phones to purchase items over the Internet. All interviewees were asked if they would be interested in using a mobile phone to purchase items over the Internet. Among e-commerce users, 63% of respondents showed interest, while 27% of non e-commerce users were interested in the use of mobiles phones for e-commerce.

The most common reason that interviewees were interested in using their mobile phones was the convenience it provided. Additional reasons included the fact that people could take advantage of the features available on phones that they already owned and that shopping over a mobile phone seemed easier than shopping on the Internet. Interviewees were also interested in being able to shop from any location while saving money.

Although there were not a large number of interviews, the interviews that were obtained helped to extend aspects of our analysis beyond the student populations that we surveyed.

5.3.6 Summary of Interview Analysis

To summarise, the key findings from our interview analysis are listed as follows:

- British Internet users' main purpose for using the Internet was for e-mail, while shopping online was not specified as being of significant importance
- The most appealing traditional shopping methods among interview respondents included small shops, large retail stores, and street markets
- The most appealing methods of e-commerce included price comparison agents, portals, and auctions
- 48% of interviewees had interest in using a mobile phone to purchase products over the Internet
- Concerns among all interviewees included security and distrusting retailers, while e-commerce users were also concerned with slow delivery and difficulty in returning items

5.4 Integrated Analysis

This section summarises the integrated portion of our analysis. The data obtained from our surveys and interviews were compared to each other. The data from the surveys and interviews were also related to the web site analyses we conducted. This integrated analysis was performed to determine methods used by web sites found to be appealing to consumers how they compared to ShopSmart.

5.4.1 Relating Surveys to Interviews

Certain questions were asked on both the surveys and interviews in order to support information obtained from surveys with information from interviews. By receiving the same responses from two different types of sample populations, we have confirmed that our data can be considered relevant to a larger sample than just the surveyed students or

interviewed café patrons. The following three questions were asked on both the surveys and interviews:

What sites have users purchased from?

What is the user's favourite web site?

What are the main concerns regarding online shopping?

The results to these questions were analysed collectively.

5.4.1.1 E-commerce Web Sites Utilised by Each Sample Population

A summary of the sites that UK residents indicated having bought from is shown in Table 5-14.

Table 5-14: Comparison of Sites Purchased From by UK Students and Café Patrons

Web Site	Number of Times UK Café Patrons Bought From Site	Number of Times SPSE Students Bought from Site
amazon.co.uk	6	47
uk.yahoo.com	3	13
Travel sites	10	12
Books/Music stores	7	8
Computer / Electronic stores	1	6

Evaluation of the data gathered from the UK Internet café patrons and SPSE shoppers revealed that both groups purchased most frequently from amazon.co.uk, while uk.yahoo.com was the second most popular site from which to purchase items. A significant number of students and Internet café patrons had purchased travel related items from a variety of sites. Another category from which a large amount of people purchased online was music items and books. Looking at the large number of students who have

purchased from amazon.co.uk, we see there is a tendency for people to purchase certain products online.

A comparison between students at WPI and all sample populations in the UK revealed that each group had purchased most frequently from a site run by Amazon (amazon.com in the US, amazon.co.uk in the UK). A comparison between the types of sites the populations tended to shop from showed that respondents in the UK were more likely to purchase from web sites that featured books and audio items and sites that offered travel related ticketing and reservations, while the information collected from students at WPI indicated a wider range of shopping styles.

In addition to the various items purchased online, WPI students used newer methods of e-commerce including auctions, reverse auctions, and group buying. There is a possibility that WPI students have a higher level of awareness of these methods. The top seven sites among respondents at WPI included an auction site (ebay.com), an audio store (cdnow.com), two direct retailers (amazon.com, buy.com), clothing stores (jcrew.com), an events ticket store (ticketmaster.com), and a reverse auction site (priceline.com). In addition, the number of WPI students who purchased from online department stores was significantly different from the number of UK consumers who did the same. While 31% of WPI students had purchased from an online department store, only 2% of the sampled consumers in the UK indicated purchasing from these sites. A possible explanation for this discrepancy could be the tendency of the British to do more interactive shopping, as seen in the number of sampled consumers who tended to buy products from small shops, large shops, and street markets.

5.4.1.2 Evaluation of Favourite Web Sites Among Each Sample Population

Comparing data obtained from the Internet Café Patrons and the SPSE students showed that both groups indicated Amazon.co.uk as their favourite site to shop from. However, SPSE students and interviewees had different opinions about favourite sites beyond amazon.com. Other favourite sites specified by Internet Café patrons included uk.yahoo.com, easyjet.com, and cheaptickets.com. UK.yahoo.com was ranked as the fifth favourite of SPSE students listing it as a favourite, while cheaptickets.com and easyjet.com did not come up on the surveys of students. However, it is possible that easyjet.com responses by interviewees were biased because we collected all of our interviews from easyEverything cafés, which offered easyjet.com as a free site. Since only twenty-four people who were interviewed had shopped online, and only seven people listed a favourite site we could not draw any strong conclusions about the differences between the two groups. It was noteworthy, however, that of the seven sites named by patrons, four were general shopping sites, and three were travel ticket sites.

Listing the reasons that amazon.co.uk and uk.yahoo.com were among their favourite sites, the interviewed patrons listed amazon.co.uk as their favourite site because of the price and the products offered. The interviewed patrons chose uk.yahoo.com as their favourite site because of the products offered and the personal accounts offered by the site. The students indicated favouring uk.yahoo.com due to an ease of use and the personal accounts offered. From these groups, we can identify the products offered, price of items, ease of use, and personal accounts as the most important features of these web sites to these users.

Comparisons involving WPI shoppers and UK shoppers revealed that the main difference between the groups was the versatility of the users. The surveyed students at WPI favoured sites that were general shopping (amazon.com, buy.com), clothing (jcrew.com), music (cdnow.com), and auction (ebay.com) sites. Sites featuring new methods such as reverse auctions and auctions also proved popular with WPI students. Our data showed that the WPI students were, in general, more experienced with a variety of aspects of online shopping than the sample of UK resident shoppers. WPI students bought more types of products online and liked to experiment with different methods of e-commerce in order to get the best deal. The most important features to WPI students choosing their favourite web sites were price of items and the ease of use of the web site.

5.4.1.3 Comparison of Concerns from Each Sample

Responses regarding online shopping concerns between the UK students and UK café patrons were similar. The major concerns regarding online shopping among SPSE students were found to be Internet security, a difficulty in returning items purchased online, general distrust in retailers, and slow delivery. Likewise, the four major concerns of interviewed café patrons were security, distrusting retailers, difficult to return items, and slow delivery. However, the difficulty in returning items proved to be more of a concern among the e-commerce users, as people who have not shopped online did not present that as a concern. Our data allowed us to target these four items as the main concerns among the SPSE students and the UK Internet café patrons.

Responses to the WPI survey showed that the four largest concerns among WPI students included Internet security, difficulty in returning an item, slow delivery, and

distrusting retailers. Table 5-15 summarises the percentage of each sample that listed particular concerns.

Table 5-15: Main Concerns About E-commerce Among All Interview and Survey Respondents

Concern	SPSE Students With Concern (%)	Internet Café Patrons With Concern (%)	WPI Students With Concern (%)
Internet security	62	59	49
Returning an item	40	5	46
Trusting retailers	32	20	25
Slow delivery	21	7	28

Table 5-15 details the main differences between the concerns expressed among our target populations. It is clear from the data in Table 5-15 that most of the concerns in the UK related to Internet security and trust of retailers, while WPI students tend to be concerned not only with security but also with returning items, and delivery. This might be another indication of WPI students being more experienced and knowledgeable regarding online shopping.

5.4.1.4 Summary of Surveys and Interview Results

The key findings obtained from the comparison of survey and interview results include:

- Consumers within the sampled populations in the UK have a tendency to purchase from stores offering books, music, travel, and computer items online.
- WPI consumers purchase products from a wider variety of stores and used a wider variety of methods than the people we sampled in the UK.

The main concerns among the sampled populations in both the US and the UK include security, distrusting of retailers, difficulty in returning items, and slow delivery.

5.4.2 Relating Surveys and Interviews with Web Site Analyses

In comparing the surveys to our web site analysis, we compared two significant aspects of our data. The first associated the favourite web sites of students along with the reasons the sites were favourites. The second aspect was an analysis of the relationship between the concerns held by students and the ways in which the sites that concerned students shopped at, addressed these concerns.

5.4.2.1 Aspects of Web Site Analysis Relevant to WPI Student Consumers

The favourite web site with the highest number of respondents among the WPI users was amazon.com. Over 50 % of people who named it as their favourite site listed the ease of use of the web site and the price of the items offered as the appealing features. The second most appealing reason for amazon.com, with 33% of the students listing the option, was the security offered on the site. Personal accounts were next with 25% of the students mentioning as a reason amazon.com was their favourite web site. From our observational analysis of the site, amazon.com proved to be one that stood out from the others. The site was very easy to use, offered fifteen different product categories, and had a wide variety of services, namely auctions and other retailers, known as Z-shops. In searching for the book *A Tale of Two Cities*, over 150 results were found, all at different prices. Since so many results were given, it was relatively easy to find one at a price that we wanted to pay. Even though so many different products were offered on the site, it was relatively easy to locate and then buy the desired product. The site offered both consumer and editorial reviews of the product we searched for, which was found to be useful. The site also offered a

community section, where customer-to-customer communication was allowed. If the product was not found on Amazon's page, a search could be conducted on one of their Z-Shops.

The second favourite site among WPI users was ebay.com. Of the thirty-five people that listed the site as their favourite, 80% of the students listed price, 69% listed the ease of use, and 26% listed personal accounts as reasons ebay.com was their favourite site to purchase products from. Ebay.com is an auction site that offered a large selection of products and had a community section where consumers could consult about products and other information with each other. We found the site to be excellent for obtaining a great bargain on certain products and finding rare products that people do not sell in stores. The interaction between buyers and sellers made the site worthwhile for getting a bargain on products. The site was very easy to navigate through and search for items; however, the product descriptions as given by each individual person could be confusing. We gave the site a security policy rating of five, as the security policy was noticed right on the first page. Personal accounts were required for consumers to trade online and stored the consumer's history and personal settings.

The third favourite site among student consumers was buy.com. Of the thirteen people who found buy.com to be their most appealing site, all thirteen also noted that price was the most appealing feature. Around 50 % of the users noted web site appearance, while 38% selected personal accounts, as a reason buy.com was their favourite web site. Buy.com is a retail site. The search on buy.com's site was very easy to navigate and the organisation of the site was orderly. When searching for a book, the results could be customised by format, availability, and price. This made it easy to locate the lowest price

for an object and determine whether the item was in stock. The consumer reviews aided in the determination of assessing the quality of each product. All of this information proved to be very useful in determining what product to purchase. The site was only given a security policy rating of three. The site also allowed for a personal account where it stored previous logins and personal information about the consumers. A unique feature about buy.com was Buytravel. This feature allowed consumers to personalise the category based on their travel habits. Some of the drawbacks to the site were that pictures and item descriptions were not available for certain products.

The next favourite web site among WPI students was ticketmaster.com. Of the eleven people who chose this as their favourite site, 91% listed the ease of use of the site, while just under 50 % listed price as the most appealing feature of the site.

Ticketmaster.com allows consumers to purchase tickets in the sporting events, music, arts, and family entertainment categories. The site proved to be very easy to use if type of tickets to be searched for were known. It can also be very informative if you want to know what tickets are available for certain events. The site can be very useful in that one does not have to go to the box office to be assured of getting tickets.

The fifth most popular web site among WPI consumers was cdnow.com. Of the eight people who listed this site as their favourite, 75% listed both price and ease of use as appealing features of the site. The layout of the site was well organised and the search was easy to navigate. The movie *The Matrix*, was searched for and results returned in both DVD and VHS. Item descriptions and customer reviews were available for the item. The site offered personal accounts through which orders could be traced and account history

could be found. The site offered a large amount of products in the areas of CDs, DVDs, and movies. An account must be created to purchase from the site.

5.4.2.2 Aspects of Web Site Analysis Relevant to Consumers in the UK

The favourite site of SPSE users was amazon.co.uk. Of the twelve people who listed this as their favourite site, 92% mentioned the price of items as an appealing feature of this site. Ease of use placed second with 58% of the students mentioning the feature and personal accounts was third with 25% of the students selecting the feature. The UK version of the amazon.com site is an online retail site, with merchants and independent merchant shops. Overall, observational analysis of the site was positive. The site was organised very well and navigation was easy. The search engine was used to find results on the book, *A Tale of Two Cities*, and eighty selections were returned. The search returned various publishing dates and versions and they could all be organised according to price, availability, and format. Consumer and editorial reviews were found for the products to be purchased. The site was also WAP compatible so it can be accessed through a mobile phone. The site required personal accounts to shop, which are useful in keeping account history of customers. In this UK version of amazon.com, Z-Shops were also available allowing for more retailers.

The second most favourite site among UK students was jungle.com. Of the five people who listed this site among their favourite, 100% listed price as appealing, 80% listed the web site appearance and ease of use, 40% listed personal accounts. Our observational analysis of this site conflicts with the apparent popularity among the UK residents. This site was found to be somewhat difficult to find items that we were looking

for. The item searched for on this site, *The Matrix*, yielded no results in one case, and took six times to register in the other case. Although the site contained the movie, no results were returned. This information mix up gave us all a bad impression of the site. A lot of information was hidden on the site.

The third and fourth most popular sites among the UK consumers were two US sites, amazon.com and cdnow.com, which were analysed in the WPI section of 5.4.2.1. The fifth most popular site was uk.yahoo.com. The site was named as a favourite in both the SPSE surveys and in the UK resident interviews. The reasons they named this site appealing included the ease of use, products offered, and personalisation of site. In addition to being a search engine, uk.yahoo.com also acts as a portal. When searching for *A Tale of Two Cities*, the site gave four results with links to the retailers web sites that were selling the product as well as the price of each item. While the results proved to be more expansive than could be found on other sites, the site was very easy to use due to the implementation of the personal accounts. The site could be personalised for news, emails, as well as shopping. The convenience in this case seems more important than the price of the item. A feature unique to uk.yahoo.com's web page was a shopping cart, which allowed consumers to store purchase products from multiple retailers through one credit card transaction on uk.yahoo.com's web site.

5.4.2.3 Concerns of WPI Students Regarding E-Commerce

The concerns among WPI e-commerce users were Internet security, difficulty in returning items, slow delivery, and not trusting retailers. Amazon.com, the most popular site among surveyed students at WPI, was given a security policy rating of three according

to the security policy rating system detailed earlier. Although the site does not have security advertised directly on the front page, the site is the second most popular in US Media Metrix Studies. The popularity of the web site helps make other people comfortable with the site. It also makes them feel as though they can trust the site. As for their delivery policy, Amazon gives a full refund within thirty days and allows three to seven days for standard delivery. Most of their items are shipped out within twenty-four hours so consumers receive their purchases quickly.

Ebay.com, the second most popular site among the sample at WPI, obtained a security policy rating of five. Merchants advertised on ebay.com's site have their own delivery policy. In addition, since consumers on ebay.com's web site do not buy products from ebay.com directly, they must be wary of the actual retailer that is selling the product. Most merchants leave contact information and arrange to conduct business themselves. The returning of items is unique to all merchants but the low price paid for items outweighs all of the negatives.

Buy.com was the third most popular site among WPI students. While the web site obtained a security rating of three, a privacy policy on the first page that details the information consumers must disclose to obtain a personal account. They have both a summarised list of highlights from their privacy policy and use an extended version for those people who want to know more about the policy. They ship their products within twenty four to forty eight hours if the product is available and allow for full money back guarantee within thirty days.

Ticketmaster.com was the fourth most popular site among WPI students. Although we also rated the site's security policy a three, they have a link to a privacy policy on the

first page, which again, details what information they receive from users, and what they use it for. A cookie explanation is given on this page and it includes a link to their security policy. Due to their business, they do not allow tickets to be refunded and delivery can take up to two weeks after the product is ordered, although express delivery is available if needed.

The fifth most popular site among WPI residents was cdnow.com. This site was given a five by our security rating. When reading the security policy, detailed information is given regarding the security policy as well as the privacy policy. This privacy policy details the information required of consumers and what that information is used for. [Cdnow.com](http://cdnow.com) uses the thirty day money back guarantee, and their products can be shipped out within twenty-four hours if available, but may take up to two weeks to arrive at the destination.

5.4.2.4 Concerns of Sampled Populations in the UK Regarding E-commerce

The concerns identified by the most UK residents included Internet security, distrust of retailers, and difficulty in returning items. The most popular web site among the UK residents, amazon.co.uk, was given a security rating of five by our system. The first sentence on the home page contained a link to a safe shopping guarantee policy, and a privacy policy. The safe shopping guarantee outlined the security used by the site, while the privacy policy gave information on what type of information they collect from the user and how they use that information. The UK version of amazon.com allows a thirty day money back guarantee on all products, will ship out items in twenty-four hours, and delivers product in three to five days, with quicker deliveries optional.

The second most popular site among the SPSE students, jungle.com, was given a security rating of five. Jungle.com contained a link on the front page to their security standard, while the information on their privacy policy is somewhat hidden and hard to find. They allow for a fourteen-day return policy, but delivery is free and takes up to two business days to reach the buyer.

UK.yahoo.com was the fifth most popular site among SPSE students and listed by interviewed consumers. The security policy was rated a four according to our standards, as it was located on the home page but it was found by scrolling down. However, in the security policy, the privacy statement and security statement were clearly stated. An emphasis was placed on providing consumers the comfort that the retailers could be trusted. Since the site is a portal site, both the delivery policy and the return policy were unique to the merchant.

5.4.2.5 Summary of Integrated Analysis

- Most important reasons students listed for choosing these favourite sites were price of item, ease of use, web site appearance, and personal accounts.
- Many of these sites contained methods to personalise the site, and almost all required a personal account to purchase from the site
- Most of these sites had features that added to their identity as a retail site including: Z-shops, community sections, personalisation of categories, and WAP compatibility
- Additional features found to be useful on these sites were amount of products offered, item descriptions, delivery information, and editorial and consumer reviews
- Most of these sites addressed the concerns of consumers by detailing their security policy, privacy policy, and allowing for a money-back return on items.

5.4.3 ShopSmart's Current Situation

Analysis of the concerns of the SPSE students we surveyed and the UK residents we interviewed identified Internet security, distrust of retailers, and difficulty in returning items as major concerns among British consumers. Other concerns of British e-commerce users discovered during our research for the literature review, included preferred personal sizing in clothing and high shipping costs (Savage 2). While examining ShopSmart's web site, we noted that the web site addresses security clearly, and up front. However, ShopSmart's privacy policy regarding how safe the merchant sites advertised on ShopSmart's web page was not advertised as well as other price comparison or portal sites we analysed such as dealtime.co.uk or mysimon.com. Each of these sites advertised a privacy policy and explained that consumers could trust any of the retailers listed on their respective web sites.

Through our simulated shopping experience on ShopSmart, we were able to find the desired products easily. The information from the price comparison search could be sorted by item price, delivery price, or total price. Although the price comparison is a good tool to find the lowest prices for most items, ShopSmart's agent did not allow for price comparisons in as many categories as seen on other sites, such as mysimon.com or valuemad.com.

ShopSmart's web site also had no personalisation options for consumers to associate themselves with the site. Consumers were directed towards the retailer sites on ShopSmart's site. If the consumer found one of these retailers appealing to them, it was likely that the consumer would return to the retailer's web site without ShopSmart's aid.

Almost all of the sites analysed in our integrated analysis offered personal accounts and required them to purchase products.

Many of the sites analysed in our integrated analysis offered additional features to the site to attract a wide range of consumers. Many of these features were deemed a USP and added to the identity of the site. Other services found to be of use to consumers on these sites included editorial and consumer reviews. ShopSmart's site only contains editorial reviews of retailers.

From our analysis of ShopSmart's site, we identified the following areas that could be improved upon:

- An updated privacy statement.
- An extension of categories involved in price comparisons.
- A new way of giving personalisation options to customers to return to ShopSmart's web site.
- Adding consumer reviews for retailers and products on web site.
- Adding new features to provide an added identity to ShopSmart's web site

ShopSmart could benefit from improving these areas in addition to implementing new services currently popular on other sites.

Chapter Six: Conclusions and Recommendations

After reviewing the data collected from web site analyses, surveys of WPI and SPSE students, and interviews of UK residents, we formulated our conclusions and recommendations for ShopSmart. These conclusions and recommendations have been formulated in such a way that they will allow ShopSmart to retain its position as an impartial shopping guide for consumers. The conclusions sections detail the key findings of our research, which led us to our recommendations.

6.1 Conclusions

The following section summarises the key findings from the collective steps of our methodology. The findings are presented in three categories: preferences of online shoppers, differences between US and UK users, and main concerns of existing consumers.

- Preferences of online shoppers
 - Online shoppers in both the US and the UK listed price, ease of use, popularity of the site, and web site appearance as appeals of their favourite sites.
 - Our integrated analysis of the most popular sites listed by respondents indicated the importance of personal accounts as an appealing feature.
 - Our research showed that British consumers tend to purchase books, music, computers, and travel tickets online.
- Differences between users in the US and UK
 - We found that Internet users in the US tended to use e-commerce more regularly than users in the UK users.
 - WPI e-commerce users were taking advantage of newer methods of e-commerce such as auctions, reverse auctions, forums, and group buying.
 - Of the e-commerce methods listed above, UK e-commerce users were found to be familiar only with auctions.

- Concerns among all survey and interview respondents
 - The main concerns of all interviewees and surveyed students, as revealed by our research, were Internet security and distrusting retailers.
 - Other concerns, such as difficulty in returning items and delivery of items ordered online, were more of a concern for e-commerce users than non e-commerce users.

6.2 Recommendations

For ShopSmart to retain their position as an industry leader, it is essential that they maintain existing customers while also attracting new customers to their web site. The recommendations detailed below were based on data collected from Media Metrix studies, web site analyses, surveys of WPI and SPSE students, and interviews of UK residents who frequented Internet cafés. These recommendations are broken down into three key areas:

- Modifications of existing Unique Selling Points (USPs)
- Adjustments to maintain existing customers
- Alterations to attract new customers

These recommendations are our interpretations of methods that might help ShopSmart retain their industry leading position.

6.2.1 Modifications of Existing Unique Selling Points (USPs)

For ShopSmart to retain their position among the top e-commerce companies in the UK, continual updates must be made to their site to meet the needs of all consumers. In addition to modifying services currently available on their web site, ShopSmart must be capable of adding new features to broaden the capabilities of their web site.

To expand the features offered on ShopSmart.com, we recommend that ShopSmart Ltd consider adding one of these new features to their site.

- Auction
- Community Section
- E-cards
- Incentives for Visiting Retailers

Although we realise that adding any one of these new features would involve a major corporate decision, we feel that it is important for ShopSmart to consider taking advantage of these opportunities. Adding one of these features would enhance ShopSmart's identity among online retailers. The implementation of any one of these recommendations would cause the movement of ShopSmart out of being an exclusively portal and price comparison site and into a more dynamic role. We have described the feasibility and the drawbacks of implementing each one of the given methods. The descriptions below detail existing USPs from e-commerce web sites, based in both the US and UK, as well as modifications that would allow them to be more appropriately implemented on ShopSmart's web site.

One feature that could be added on ShopSmart's web site is an **auction**. Based on the research we conducted regarding auction sites, it was found that auctions were a good way to find rare and interesting items at, generally, reasonable prices. Our interview data showed that auctions were the second more appealing method of e-commerce among our sample population, tied with portals. In addition, it was worthwhile to note the immense popularity ebay.com experienced in the US, it ranked third in the US Media Metrix digital media shopping site listing for February of 2000. This demonstrates the potential of

auction sites to gain popularity in the UK. Amazon.co.uk and amazon.com have both added auctions as a feature available on their site. An examination of other site in the UK revealed the rising popularity of qxl.com and ebay.com in the UK based Media Metrix study. All of the gathered information suggests that adding auctions would be beneficial to ShopSmart's site.

Another USP that could be implemented on ShopSmart's web site is a **community section**. Two of the most popular e-commerce sites in the US, amazon.com and ebay.com, were found to provide consumers with the ability to communicate with other users of the site. These communities were similar to forums in that they allowed customers to share information and experiences they had regarding retailers and shopping with each other. Through our interviews and background research, we ascertained that Britons preferred traditional methods of shopping, such as going to street markets, small shops, or large shops. These shopping methods allowed consumers to interact with other consumers, as well as retailers, and made shopping a more social experience. Web site communities can offer an interactive experience that is not likely to be experienced through most of the e-commerce web sites that we analysed.

E-cards are electronic cards that can be sent from a web page to an email address. E-cards are tremendously popular in the US; data in Table 4-1 shows that five of the top ten visited digital media sites in the US offered e-cards to consumers. These sites were bluemountainarts.com, egreetings.com, americangreetings.com, amazon.com and barnesandnoble.com. Three of these five sites offer e-cards exclusively. Uk.yahoo.com and btspre.com are UK based sites that have implemented e-cards. Analysis of data from MediaMetrix studies shows that bluemountain.com and egreetings.com are beginning to

show signs of growth in the UK. Between October 1999 and March 2000, the audience reach percentage of bluemountain.com more than doubled from 2.2% to 4.5%. We know from our interview data that 80% of the sampled population used the Internet for e-mail. Since e-cards are sent via e-mail, our results suggest that UK residents would be comfortable with utilising e-cards.

The final USP we investigated was found on mypoints.com. Mypoints.com was in the US Media Metrix information as one of the top ten visited sites. Mypoints.com offers an **incentive program for visitors**. Points were earned for visiting other retailers, purchasing items from retailers, referring other people to mypoints.com, and filling out surveys. Mypoints.com users can then redeem the points for gift certificates, discounts on merchandise, or free merchandise. With the large number of retailers featured on ShopSmart's web site, implementing a points scheme would provide consumers a reason to visit multiple retailers in ShopSmart's retailer directory. Consumers would have a reason to revisit ShopSmart's site to receive incentives provided.

6.2.2 Recommendations to Maintain Existing Customers

To further ShopSmart's goal of maintaining their industry leading position in the UK, they must have the ability to maintain their existing customer base. Our research showed that two possible methods that could be used to aide ShopSmart in maintaining their current customer base were personal accounts and consumer reviews of products and retailers.

An area in which ShopSmart lacks appeal to consumers is personalisation. From our surveys and interviews, the personal account was not as important as price or

convenience a site offered; however, it was an important reason why people chose to purchase products from the most popular sites they shopped from. Most of the US and the UK sites we analysed required a personal account before a product could be purchased. Some accounts implemented on these sites kept account history, provided recommended selections, and stored delivery and billing information.

We recommend ShopSmart offer its customers a personal account to add some amount of personalisation to their web site. Once a customer has used ShopSmart's web site to find a retailer offering the desired product, subsequent purchases can be made by going directly to the retailer. To keep these customers coming back to ShopSmart, consumers must be made to feel welcome. Personalising a web site accomplishes this, and it was determined through our survey and interview results that customers favour personal accounts.

One means in which the personal account could be implemented is through a **shopping cart** similar to the one found at uk.yahoo.com. This feature allowed consumers to freely navigate the web sites of retailers involved in the portal and add items to a shopping cart. After completing all of their shopping, a single credit card transaction purchased the items from the various retailers. This ensured that customers would keep coming back to uk.yahoo.com for their shopping experiences because uk.yahoo.com was the final agent through which the purchases were made. ShopSmart could benefit from the addition of this feature because this would bring consumers back to their web site for their final purchases. With the large number of sites available through ShopSmart, consumers would likely be able to find and purchase any item without leaving ShopSmart's web site.

Another feature to add to the personal accounts is the **personalisation of specific categories**. A site that currently offers this feature to consumers is buy.com. Buy.com offers consumers the option of personalising the site to each individual's preferred product categories. By adding profiles in categories that a consumer shops from frequently, the consumer can obtain detailed information on the products offered within each category. ShopSmart can benefit by using this feature to give customers advice on the products and retailers offered in each product category. ShopSmart can also provide e-mails when special deals are offered in the consumer's selected categories.

The results of our integrated analysis showed that customer reviews were available for many products offered on competitor web sites. This option was found on the most popular web sites based in both the US and the UK. These reviews were found to be very useful when selecting a product to purchase online.

We recommend that ShopSmart add consumer reviews of retailers and products listed on their web site. By allowing customers to write reviews for different products, it provided consumers with more information on the products offered on certain web sites. ShopSmart currently provides consumers with only editorial review of each retailer; adding a consumer review of both products and retailers would allow for more of an interaction and to take away from the business aspect of the review. The addition of consumer reviews would allow ShopSmart's web site to offer advice on products or retailers while maintaining their impartiality. These reviews also allowed consumers to spend more time on the site, as they could be drawn back to give reviews on products or retailers.

6.2.3 Recommendations to Attract New Customers

To increase the popularity of ShopSmart's web site and ensure they retain the leading position in their industry, ShopSmart must attract new customers. To attract these visitors, ShopSmart should address the concerns of non e-commerce users and add new, appealing products to their price comparison program.

The main concerns that were revealed through our surveys, interviews and background research were Internet security, distrust of retailers, difficulty in returning items, high shipping costs, and personal sizing in clothing. ShopSmart has the ability to address Internet security, and distrust of retailers directly. Their Internet security policy is well defined, but they lack a well-defined privacy policy.

We recommend ShopSmart update their privacy policy to provide potential consumers with the assurance that their transactions are secure and that retailers will not abuse the information consumers provide. Although the ShopSmart currently reassures customers about the security associated with purchasing items from retailers' web sites, they do not address the issue of consumers giving their personal information to retailers. The privacy statements offered on sites such as dealpilot.com and mysimon.com detail how the retailers on their site must be trusted. Reassuring consumers that no web site listed with ShopSmart will abuse their personal information would provide added security to the consumer. Added security provides potential for attracting new e-commerce users. In addition to altering their own privacy policy, **we recommend that ShopSmart offer their highest shop ranking only to the web sites thoroughly and prominently detailing their security and privacy policies.**

ShopSmart could also attract new customers by continually adding to the products offered in the price comparison program. Price comparison was the most popular e-commerce method among interviewed café patrons because it provided the lowest price without a great deal of effort and time spent on the Internet. A study conducted by NetValue, released in March 2000, revealed that the most popular items that residents of the UK were likely to purchase online were books, music, and travel tickets. Our background research also suggests that British consumers often purchased computer products online. Surveys of SPSE students and interviews conducted of Internet café patrons corroborated this in that consumers within these sample populations bought travel tickets and computers related items online more often than other types of items.

We recommend adding travel tickets and computer items to the price comparison agent to make the program more beneficial to consumers. While the retailer directory on ShopSmart's web site offers fourteen distinct product categories, the price comparison program only offers four. Other sites such as valuemad.com and mysimon.com included more than four product categories in their price comparisons at the time of our research. Adding more categories in which consumers could compare prices would increase the breadth of shopping possibilities, give consumers more products to choose from, and thus ShopSmart would have more items to attract new customers. Our results indicate that ShopSmart can immediately make their site more attractive to a wider variety of consumers by adding price comparison capabilities for these products.

The research we have conducted and the data that we have analysed during in completion of this project has strongly suggested that the successful implementation of any of these recommendations would help ShopSmart to achieve its goal of attracting new

users while maintaining the loyalty of their current customers. Our recommendations are intended to allow ShopSmart to continue to retain its industry leading position in the UK as well as to preserve ShopSmart's corporate image as an impartial online shopping guide for consumers.

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Appendix A: Web Site Analysis Table

Services of E-Commerce Web Sites		Number of Pages from Homepage
Category	Description	
Site Name		
URL		
Type of Site		
Product Categories		
Login Services		
Security Policy		
Customer Service Methods		
Order Confirmation		
Delivery Policy		
Return Policy		
FAQ Availability		
Consumer Feedback		
Multimedia Applications		
Unique Selling Point (USP)		
Text Only Option		
Homepage Load Time		
Shopping Experience		
Pictures		
Item Descriptions		
Reviews		
Shopping Basket		
Popularity		

Appendix B: Survey of E-commerce Usage - WPI

We are a group of students completing the Interactive Qualifying Project. This survey is designed to gather information that will be helpful in determining cultural differences of student users of e-commerce. Our group would appreciate your participation in this survey.

1.) Please Print

GENDER: _____ MAJOR: _____ AGE: _____

2.) From where do you access the Internet? (Check all that apply).

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> On Campus | <input type="checkbox"/> Work |
| <input type="checkbox"/> Permanent Residence | <input type="checkbox"/> None |
| <input type="checkbox"/> Student Residence | <input type="checkbox"/> Other _____ |

If you have never purchased an item online, skip to question 7.

3.) How often do you purchase items online?

- | | |
|---|---|
| <input type="checkbox"/> 1 – 2 times ever. | <input type="checkbox"/> 1 – 2 times a year. |
| <input type="checkbox"/> 2 – 5 times a year | <input type="checkbox"/> more than 5 times a year |

4.) For the following web sites, check all boxes that apply.

Web Site	I have visited this site	I have purchased from this site	I would purchase from this site again.
amazon.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
bottomdollar.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
buy.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
cdnow.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
dealpilot.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ebay.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
mercata.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
mysimon.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
priceline.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Retail Stores Online	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ticketmaster.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ubid.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other : _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5.) What is your favourite site to purchase items online?

6.) Why is this site more appealing than other online web sites? (Check all that apply).

- | | |
|--|---|
| <input type="checkbox"/> Web site appearance | <input type="checkbox"/> Price of item |
| <input type="checkbox"/> Ease of use | <input type="checkbox"/> Customer Service |
| <input type="checkbox"/> Popularity | <input type="checkbox"/> Security offered by site |
| <input type="checkbox"/> Personal Accounts | <input type="checkbox"/> Other _____ |

7.) Do you have any concerns regarding online shopping? (Check all that apply).

- | | |
|---|--|
| <input type="checkbox"/> Do not trust retailers | <input type="checkbox"/> Price |
| <input type="checkbox"/> Impersonal | <input type="checkbox"/> Slow Delivery |
| <input type="checkbox"/> Internet security | <input type="checkbox"/> Difficult to return an item |
| <input type="checkbox"/> No/Slow Access to Internet | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> No interest | <input type="checkbox"/> _____ |

Appendix C: Survey of E-commerce Usage - King's College

This survey is designed to gather information that will be helpful in determining cultural differences of US and UK student users of e-commerce. Our group would appreciate your participation in this survey.

1.) Please Print

GENDER: _____ DEGREE: _____ AGE: _____

2.) From where do you access the Internet? (Check all that apply).

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> On Campus | <input type="checkbox"/> Work |
| <input type="checkbox"/> Permanent Residence | <input type="checkbox"/> None |
| <input type="checkbox"/> Student Residence | <input type="checkbox"/> Other _____ |

If you have never purchased an item online, skip to question 7.

3.) How often do you purchase items online?

- | | |
|---|---|
| <input type="checkbox"/> 1 – 2 times ever. | <input type="checkbox"/> 1 – 2 times a year. |
| <input type="checkbox"/> 2 – 5 times a year | <input type="checkbox"/> more than 5 times a year |

4.) For the following web sites, check all boxes that apply.

Web Site	I have visited this site	I have purchased from this site	I would purchase from this site again.
amazon.co.uk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
british-shopping.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
btspre.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
dealttime.co.uk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ebay.co.uk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
egg.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
intersaver.co.uk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Retail Stores online	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
shopgenie.co.uk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shopsmart.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
uk.yahoo.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
valuemad.com	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other : _____

5.) What is your favourite site to purchase items online?

6.) Why is this site more appealing than other online web sites? (Check all that apply).

- | | |
|--|---|
| <input type="checkbox"/> Web site appearance | <input type="checkbox"/> Price of item |
| <input type="checkbox"/> Ease of use | <input type="checkbox"/> Customer Service |
| <input type="checkbox"/> Popularity | <input type="checkbox"/> Security offered by site |
| <input type="checkbox"/> Personal Accounts | <input type="checkbox"/> Other _____ |

7.) Do you have any concerns regarding online shopping? (Check all that apply).

- | | |
|---|--|
| <input type="checkbox"/> Do not trust retailers | <input type="checkbox"/> Price |
| <input type="checkbox"/> Impersonal | <input type="checkbox"/> Slow Delivery |
| <input type="checkbox"/> Internet security | <input type="checkbox"/> Difficult to return an item |
| <input type="checkbox"/> No/Slow Access to Internet | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> No interest | <input type="checkbox"/> _____ |

Appendix D: Interview Questions – Internet Users

Hi, we are American students performing a study of UK residents' use of e-commerce. Can you spare five minutes to answer some questions regarding this topic?

1.) Do you live in the United Kingdom? If no, these people will not be interviewed.

2.) How long have you been using the Internet? _____

3.) How often do you use the Internet? _____

4.) From where do you access the Internet?

Home Y Work Y School Y
Internet Cafés Y Library Y

5.) What are your main purposes for using the Internet?

Work Shopping News
E-mail Research _____

6.) Do you like to shop at

Street Markets	YES	NO	SOMETIMES
Small Shops	YES	NO	SOMETIMES
Large Retail Shops	YES	NO	SOMETIMES
Factory Outlets	YES	NO	SOMETIMES
Catalogue Shopping	YES	NO	SOMETIMES

7.) Are you familiar with e-commerce? YES NO

8.) Have you ever purchased an item online? YES NO

Ask at end of Interview:

Gender _____

What is your age? _____

What is your occupation? _____

For people who have shopped online:

9.) What web sites have you purchased an item from? (Check off web sites they mention)

amazon.co.uk	Retail Stores online
british-shopping.com	shopgenie.co.uk
btspre.com	Shopsmart.com
dealttime.co.uk	uk.yahoo.com
ebay.co.uk	valuemad.com
egg.com	intersaver.co.uk
Other:	

10.) Which of the sites you have bought from is your favourite?

11.) Where did you hear about the web site from?

If they have a favourite site:

12.) Are any of the following reasons that _____ is your favourite?

Web site appearance	Price of item
Ease of use	Customer Service
Popularity	Security offered by site
Personal Accounts	Other _____

If they do not have a favourite site:

13.) Why do you purchase products from those particular sites?

14.) There are several methods of advertising e-commerce sites use. Do any of the following methods attract your attention?

Billboards	YES	NO	SOMETIMES
Radios spots	YES	NO	SOMETIMES
TV spots	YES	NO	SOMETIMES
Advertisements on the Internet	YES	NO	SOMETIMES
Newspapers	YES	NO	SOMETIMES
Buses	YES	NO	SOMETIMES

15.) Have you used any of these methods of online retailing?

Price Comparison: Ability to check the price of an item from many retailers web sites simultaneously YES NO

Auctions: Consumers declare a price that they want to pay for an item and if another consumer does not outbid them, the item is sold to the most recent bid YES NO

Group Buying: Price of item decreases, as the number of people buying the item increases YES
NO

Reverse Auction: Consumer sets a price and retailers either accept or decline it YES NO

Forums: Areas for consumers to consult with each other about products, retailers and other aspects of shopping YES NO

Portals: Directory of online shops YES NO

16.) What is the most appealing method of online retailing? Why?

17.) Would you be interested in using a mobile phone to purchase products? YES NO

If so, why? _____

18.) Do you have specific concerns regarding online shopping? Any others?

Do not trust retailers

Price

Impersonal

Slow Delivery

Internet security

Difficult to return an item

Access to Internet

No interest

Other:

For people who have not shopped online:

9.) Have you ever visited an e-commerce web site? YES NO

If they have visited e-commerce web sites:

10.) Where did you hear about the web site from?

11.) Why did you decide not to purchase the item online?

If they have not visited e-commerce web sites:

12.) Why haven't you looked at these sites?

13.) There are several methods of advertising e-commerce sites use. Do any of the following methods attract your attention?

Billboards	YES	NO	SOMETIMES
Radios spots	YES	NO	SOMETIMES
TV spots	YES	NO	SOMETIMES
Advertisements on the Internet	YES	NO	SOMETIMES
Newspapers	YES	NO	SOMETIMES
Buses	YES	NO	SOMETIMES

14.) Are you aware of any of these methods of online retailing?

Price Comparison: Ability to check the price of an item from many retailers web sites simultaneously YES NO

Auctions: Consumers declare a price that they want to pay for an item and if another consumer does not outbid them, the item is sold to the most recent bid. YES NO

Group Buying: Price of an item decreases as the number of people buying the item increases? YES NO

Reverse Auction: Consumer sets a price and retailers either accept or decline it YES NO

Forums: Areas for consumers to consult with each other about products, retailers and other aspects of shopping YES NO

Portals: Directory of online shops YES NO

15.) What is the most appealing method of online retailing? Why?

16.) Would you be interested in using a mobile phone to purchase products? YES NO

If so, why? _____

17.) Do you have specific concerns that prevent you from shopping online. Any others?

Do not trust retailers

Price

Impersonal

Slow Delivery

Internet security

Difficult to return an item

Access to Internet

No interest

Other:

Appendix E: Tables of Web Site Information

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Amazon	0
URL	www.amazon.com	0
Type of Site	Retail site, with Auctions and Independent Merchants	0
Product Categories	15	0
Login Services	Personal accounts required	1
Security Policy	3	--
Customer Service Methods	Help Desk	2
Order Confirmation	E-mail confirmation when order is placed	2
	E-mail confirmation when order is shipped	2
Delivery Policy	Standard 3-7 days; 1 and 2 day delivery more expensive. Order can be shipped within 24 hours if available.	2
Return Policy	30 day full refund	2
FAQ Availability	FAQ Section	2
Consumer Feedback	E-mail	2
	Phone	2
Multimedia Applications	Listening to sound samples and song downloads	2
Unique Selling Point (USP)	Z-Shops	0
	Listening to sound samples and song downloads	2
	Community, containing message boards and customer to customer communication	1
Text Only Option	Yes	0
Homepage Load Time	7 seconds	--
Shopping Experience (dmb)	Search was simple; over 150 results; customer reviews along with publisher, price and date; of 5 options investigated: all had photos, all had shipping time info	--
Shopping Experience (cjo)	Search displayed most popular results, fully detailed, with the option of sorting full results by several methods. Large, clear picture available of the book, along with editorial reviews and customer reviews. The shopping experience provided more information than expected, but it was all useful.	--
Pictures	Start out as thumbnails, can be made larger and clearer	--
Item Descriptions	Available for all items	--
Reviews	Editorial and customer	--
Shopping Basket	Yes	--
Popularity	2nd in overall US Media Metrix; 2nd in UK Media Metrix; 1st among WPI students;	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Amazon	0
URL	www.amazon.co.uk	0
Type of Site	Online retail site, with auctions and independent merchant shops	0
Product Categories	5	0
Login Services	Personal accounts required	1
Security Policy	5	--
Customer Service Methods	Help Desk	2
Order Confirmation	E-mail confirmation for online orders	1
Delivery Policy	Product can be shipped within 24 hours if product is available, 3-5 days for delivery. 1 and 2 day options exist.	2
Return Policy	30 day full refund policy	2
FAQ Availability	FAQ section available	1
Consumer Feedback	E-mail	2
	Phone	2
Multimedia Applications	None	--
Unique Selling Point (USP)	Z-Shops	0
	WAP compatible	0
Text Only Option	Yes	--
Homepage Load Time	6 seconds	--
Shopping Experience (dmb)	Large amount of text; pictures included; results information gave publisher, date, price and shipping time; somewhat cluttered with text	--
Shopping experience (bww)	Searched for book <i>A Tale of Two Cities</i> : Results came up with 80 selections and reviews by people who have already read the book. Lots of different publishing dates, different types of book; all at different prices. A padlock was put right next to where the item was to be purchased, re-emphasising the security policy.	--
Pictures	Start as thumbnails, can be enlarged to become large, and clear	--
Item Descriptions	Available for all items	--
Reviews	Editorial and customer reviews for all products	--
Shopping Basket	Yes	--
Popularity	1st among retailers in UK Media Metrix studies; 1st among SPSE students,	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Argos	1
URL	www.argos.com	0
Type of Site	Online Retailer	0
Product Categories	14	1
Login Services	Not Available	--
Security Policy	3	2
Customer Service Methods	Help Section	2
Order Confirmation	On-screen notification	2
Delivery Policy	Delivery information outlined	2
Return Policy	16 day refund policy	2
FAQ Availability	FAQ available	2
Consumer Feedback	E-mail	1
	Phone	1
	Mail	1
Multimedia Applications	None	--
Unique Selling Point (USP)	None	--
Text Only Option	No	--
Homepage Load Time	2 seconds	--
Shopping Experience (dmb)	Familiar with shops so more comfortable with online version, graphic heavy and animated; lots of product categories but not a large selection in each. Product listings did have pictures but they were very slow and the limited descriptions were in distracting dark blue text and poorly formatted	--
Shopping Experience (cjo)	Very easy to navigate through categories, attractive menu buttons, good clear pictures of products, prices displayed, and info about products available.	--
Pictures	Large clear pictures; slow to download	--
Item Descriptions	Yes	--
Reviews	No	--
Shopping Basket	Yes	--
Popularity	5th among UK retailers in UK Media Metrix	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Barnes and Noble	0
URL	www.barnesandnoble.com	0
Type of Site	Online retailer	0
Product Categories	7	0
Login Services	Personal accounts available	0
Security Policy	5	0
Customer Service Methods	Help Desk	2
Order Confirmation	Thank you page and a conformation e-mail	3
Delivery Policy	Standard shipping takes 3-6 days; 1 and 2 day delivery available for a more expensive price. Available books can be shipped in 24 hours.	3
Return Policy	Full refund within 30 days. Music, video, and software may not be refunded but may be exchanged.	3
FAQ Availability	FAQ Section Available	2
Consumer Feedback	E-mail	--
	Phone	--
Multimedia Applications	Can listen to song downloads with Real Audio player	--
Unique Selling Point (USP)	eBooks: let the user download books or magazines to B&N's Rocket e-book	--
	Use B&N through the Palm Pilot	--
Homepage Load Time	5 seconds	--
Text Only Option	No	--
Shopping Experience (dmb)	Search was very simple and very fast, right from top of homepage to my results in fewer than 5 seconds. Plenty of options; slightly difficult to read due to results blending but all pertinent information was given: price, publisher, year, and typical shipping times. Of 5 results investigated: all included pictures and 4 had some helpful reviews	--
Shopping Experience (bww)	Search engine was located on the front page, easy to locate. Returned 96 results. Could be sorted by title, publisher, date, and best selling with availability listed. Would have been nice to list by price, too. Options allowed for gift-wrapping and coupons. Item very quick and easy to find.	--
Pictures	Thumbnails, can become a little bit larger and clearer	--
Item Descriptions	Available for all items	--
Reviews	Editorial, from the publisher as well as customers.	--
Shopping Basket	Yes	--
Popularity	7th in overall US Media Metrix studies	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Blackstar	0
URL	www.blackstar.co.uk	0
Type of Site	Online retailer	0
Product Categories	Videos only	0
Login Services	Personal accounts available	0
Security Policy	5	0
Customer Service Methods	Online Helpdesk	0
Order Confirmation	Order status section on site	2
Delivery Policy	Postage is free; products can be shipped within 24 hours.	0
Return Policy	Blackstar will take anything back for whatever reason	1
FAQ Availability	FAQ section	1
Consumer Feedback	Address	2
	E-mail	2
	Phone	2
	Fax	2
Multimedia Applications	None	--
Unique Selling Point (USP)	None	--
Text Only Option	No	--
Homepage Load Time	3 seconds	--
Shopping experience (dmb)	Exclusively a video store; lots of text but nicely coloured and well organised so as not to be confusing; 4 of 7 results did not have a price - instead 'deleted'- not available in the UK; those that were available had photos, running time, summary, format, director, stars - very useful information.	--
Shopping experience (bww)	Searched for <i>The Matrix</i> , 4 results were returned. They all cost the same amount. Site allowed for a search by director, actor, and video title. Also allowed item to be gift wrapped at no additional charge. Every item was returnable.	--
Pictures	Relatively large and clear	--
Item Descriptions	Available for all items	--
Reviews	None available	--
Shopping Basket	Yes	--
Popularity	22nd among retailers in UK Media Metrix study; 6th among SPSE students	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	BOL	0
URL	www.bol.com	0
Type of Site	Online retailer	0
Product Categories	3	0
Login Services	Customisable personal accounts	0
Security Policy	5	--
Customer Service Methods	Help Centre	1
Order Confirmation	Order status can be checked out in personal account, confirmation e-mail	1
Delivery Policy	Item can be delivered in 1-2 days if item is available. If item is in stock, it can be sent within 24-48 hours.	2
Return Policy	30 day return policy	2
FAQ Availability	FAQ section available	1
Consumer Feedback	E-mail	2
Multimedia Applications	Can hear songs in Real Audio	--
Unique Selling Point	Bestsellers 50% off	--
Text Only Option	No	--
Homepage Load Time	3 seconds	
Shopping Experience (dmb)	Search was very simple and fast; results were concise and multicoloured; included price, publisher, date, shipping times (which were all unnecessarily long)	--
Shopping Experience (bww)	Searched for <i>A Tale of Two Cities</i> , returned 38 results. A lot of different products were returned, but were relatively expensive.	--
Pictures	Available for some items	--
Item Descriptions	Available for all items	--
Reviews	Customer reviews available for some items	--
Shopping Basket	Yes	--
Popularity	8th among retailers in UK Media Metrix studies, 4th among SPSE students	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Btspre	0
URL	www.btspre.com	0
Type of Site	Price Comparison/ Shopping Portal	0
Product Categories	20	0
Login Services	None	--
Security Policy	4	--
Customer Service Methods	Unique to merchant	--
Order Confirmation	Unique to merchant	--
Delivery Policy	Unique to merchant	--
Return Policy	Unique to merchant	--
FAQ Availability	FAQ Section	1
Consumer Feedback	E-mail	1
Multimedia applications	None	--
Unique Selling Point (USP)	None	--
Text Only Option	No	--
Homepage Load Time	3 seconds	--
Shopping Experience (cjo)	Book was not available in the UK, but the site offered a US search as well, and the book was found in the US. Directory very difficult to use, many empty links, but search tool was useful.	--
Shopping Experience (dmb)	First impression of site was not good. Site took a very long time to navigate. Searched for <i>A Tale of Two Cities</i> , returned garbage, books with no relevance. The book was only found in the US bookstores. Result had a picture and synopsis, but the site was overall disappointing.	--
Pictures	Unique to merchant	--
Item Descriptions	Unique to merchant	--
Reviews	Unique to merchant	--
Shopping Basket	Unique to merchant	--
Popularity	No information available	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Buy	0
URL	www.buy.com	--
Type of Site	Shopping portal and Price comparison	0
Product Categories	10	0
Login Services	Personal accounts available	0
Security Policy	3	--
Customer Service Methods	Customer Service Centre	1
Order Confirmation	Order confirmation, and order tracking	2
Delivery Policy	Standard 3-10 days, with 1 and 2-day deliveries more expensive; order can be shipped 24-48 hours after ordered if available	2
Return Policy	30 day refund	2
FAQ Available	Yes	2
Consumer Feedback	E-mail	2
	Phone	2
	Mail	2
Multimedia Applications	Can download samples from some songs	--
Unique Selling Point (USP)	Unique golf category	0
	Clearance category allows for low prices on quality items	0
Text Only Option	No	--
Homepage Load Time	4 seconds	--
Shopping Experience	Search was easy and effective. Results were returned in a variety of media (books, audio, video) and choosing desired media returned additional results. Of five results investigated: 4 included clear pictures, 2 included a synopsis but none had customer reviews. Friendly text colours and well-organised information.	--
Shopping Experience (bww)	Searched for <i>A Tale of Two Cities</i> ; 50 various results were returned (paperback, hardcover, audio cassettes). Search could be customised by price, availability, format, and title; information makes it easy to find lowest price, or whether the item is in stock. The search was very quick and informative and easy to find product. However, the item did not have a review of it, and the product did not have a large, clear picture. There was no option to enlarge the picture.	--
Pictures	Thumbnails available for some items, not enlargeable	--
Item Descriptions	Available for some items	--
Reviews	Editorial and customer for some items	--
Shopping Basket	Yes	--
Popularity	3rd among WPI students	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Cdnow	0
URL	www.cdnow.com	0
Type of Site	Retailer	0
Product Categories	3	0
Login Services	Account login	1
Security Policy	5	2
Customer Service Methods	Online Help Desk	1
Order Confirmation	Order Status available is checked through personal accounts	2
Delivery Policy	If item is in stock, it will be shipped within 24 hours, but may take up to 2 weeks for delivery. 2 and 1-day delivery options available.	2
Return Policy	30 day unconditional money-back guarantee	2
FAQ Availability	Help desk contains FAQ	1
Consumer Feedback	E-mail	2
	Fax	2
	Phone	2
Multimedia applications	Free music downloads: Mpeg and Real Audio	--
Unique Selling Point (USP)	None	--
Text Only option	No	--
Home page load time	5 sec.	--
Shopping Experience (cjo)	The site was not difficult to navigate, and a search for <i>The Matrix</i> was successful for VHS and DVD.	--
Shopping Experience (bww)	Searched for <i>The Matrix</i> ; returned 10 results. Movie available in both DVD and video and both were in stock. Item was found very quickly and easily. Lots of detailed information about the movie, such as actors, reviews, and synopsis. In order to purchase the item, however, an account must be created.	--
Pictures	Large and clear	--
Item Descriptions	Available for some items	--
Reviews	Customer reviews available for some items	--
Shopping Basket	Yes	--
Popularity	6th in US Media Metrix; 4th among WPI students	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Checkaprice	0
URL	www.checkaprice.com	0
Type of Site	Price comparison	0
Product Categories	8	0
Login Services	User registration	1
Security Policy	1	--
Customer Service Methods	Unique to merchant	--
Order Confirmation	Unique to merchant	--
Delivery Policy	Unique to merchant	--
Return Policy	Unique to merchant	--
FAQ Availability	None	--
Consumer Feedback	E-mail	1
Multimedia Applications	None	--
Unique Selling Point (USP)	None	--
Text Only Option	No	--
Homepage load time	4 seconds	--
Shopping experience (dmb)	While attempting to search for a book, directed to shopgenie.com; at that point, shopgenie did not work and I was unable to proceed	--
Shopping experience (cjo)	Checkaprice does not search all product categories itself. Many of the product searches are just links to other price comparison web sites; not an impressive web site. Additionally, when I tried to use one the links, the site would not work.	--
Pictures	Unique to merchant	--
Item Descriptions	Yes	--
Reviews	No	--
Shopping Basket	Unique to merchant	--
Popularity	No information available	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Dealtime	0
URL	www.dealtime.co.uk	0
Type of Site	Price comparison	0
Product Categories	12	0
Login Services	Personal Account available	1
Security Policy	3	--
Customer Service Methods	Unique to Merchants	--
Order Confirmation	Unique to Merchants	--
Delivery Policy	Unique to Merchants	--
Return Policy	Unique to Merchants	--
FAQ Availability	FAQ section available	1
Consumer Feedback	E-mail	1
Multimedia Applications	None	--
Unique Selling Point (USP)	None	--
Text Only Option	No	--
Homepage Load Time	3 seconds	--
Shopping experience (dmb)	Aesthetically pleasing site; all search options were on one page and search proceeded slowly, but with less clicking; results listed title, publisher, date, and ISBN but no price comparison based on which result was chosen; easy to interpret price results with links directly to the retailers web sites	--
Shopping experience (cjo)	Easy to use, displayed several options, and sorted results based on price.	--
Pictures	Unique to Merchants	--
Item Descriptions	Unique to Merchants	--
Reviews	Unique to Merchants	--
Shopping Basket	Unique to Merchants	--
Popularity	No information available	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	eBay	0
URL	www.ebay.com	--
Type of Site	Auctions	0
Product Categories	14	0
Login Services	Registration Required to Trade	0
Security Policy	5	--
Customer Service Methods	Help Section	1
Order Confirmation	Unique to merchants	2
Delivery Policy	Unique to merchants	2
Return Policy	Unique to merchants	2
FAQ Availability	Yes	2
Consumer Feedback	No contact info	2
Multimedia Applications	None	--
Unique Selling Point (USP)	Community Section	0
	Large selection of items and can find a lot of rare items at cheap prices. Bargains.	0
Text Only Option	No	--
Homepage Load Time	5 seconds	--
Shopping Experience (dmb)	Due to schedules maintenance during early morning hours on Fridays, site was unavailable for a time; wide variety of options, prices, some with pictures (varying degrees of quality), slightly overwhelming number of options, distracting blue text	--
Shopping Experience (bww)	Original layout of site favourable, site easy to read and navigate. Searched for <i>A Tale of Two Cities</i> , 45 items returned. Many different formats offered, ranging from audiocassettes to paperback to comic books. No description at original product list; hard to determine what the product actually was. Web site good for getting a bargain on certain items (if the auction is won) and finding rare items.	--
Pictures	Unique to Merchants	--
Item Descriptions	Available for most items	--
Reviews	Seller determines information that is put forth and independent reviews are not available	--
Shopping Basket	No	--
Popularity	3rd in overall US Media Metrix, 2nd among WPI students	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	eBay (UK)	0
URL	www.ebay.co.uk	0
Type of Site	Auctions	0
Product Categories	12	0
Login Services	Registration required to bid	1
Security Policy	5	--
Customer Service Methods	Help Section	1
Order Confirmation	Unique to merchant	--
Delivery Policy	Unique to merchant	--
Return Policy	Unique to merchant	--
FAQ Availability	Q & A Boards	1
Consumer Feedback	Feedback Forum	2
Multimedia applications	None	--
Unique Selling Point (USP)	Community Section	--
Text Only Option	No	--
Homepage Load Time	5 seconds	--
Shopping Experience (dmb)	Search utility was prominently displayed and brought results quickly. Results were VERY limited (2 selections) and not at all what I was looking for. Too much information on the results page- it was crowded and unnecessarily so. Option to sort results by relevancy, auction start and end dates, as well as price may have been useful if there were any practical results.	--
Shopping Experience (cjo)	Searched for a DVD player, and several results were returned, with the option to sort by several methods. The menu driven search can be confusing, unless you know exactly what you are looking for.	--
Pictures	Unique to merchant	--
Item Descriptions	Yes	--
Reviews	No	--
Shopping Basket	No	--
Popularity	No information available	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Streets Online UK	0
URL	www.infront.co.uk	0
Type of Site	Online Retailer	0
Product Categories	5	0
Login Services	Personal accounts available	0
Security Policy	5	0
Customer Service Methods	Customer Service Department	1
Order Confirmation	E-mail confirmation following order	2
Delivery Policy	Delivery policy details on site	2
Return Policy	30 day refund policy	3
FAQ Availability	FAQ Section	2
Consumer Feedback	Phone	2
	Fax	2
	Mail	2
Multimedia Applications	None	--
Unique Selling Point (USP)	None	--
Text Only Option	No	--
Homepage Load Time	5 seconds	--
Shopping Experience (dmb)	Search was simple and results were well organised and easy to read. Each included a picture as well as publisher, price, date, format, and a summary plus a 'more' section that highlighted additional info such as ISBN and consumer reviews	--
Shopping Experience (bww)	Site could be personalised. Searched for <i>A Tale of Two Cities</i> . Returned 268190 items. Books all have reviews. Did not have pictures of all items, some were just alphabet street logos. After page 4, no books were displayed indicating there were only 50 options; not 268190	--
Pictures	Yes	--
Item Descriptions	Yes	--
Reviews	Yes	--
Shopping Basket	Yes	--
Popularity	No information available	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Jungle	0
URL	www.jungle.com	0
Type of Site	Retailer	0
Product Categories	4	0
Login Services	Member login service	1
Security Policy	5	0
Customer Service Methods	Customer care hotline	1
Order Confirmation	E-mail confirmation	3
Delivery Policy	Delivery guide	4
Return Policy	14 day refund policy	4
FAQ Availability	FAQ Available	3
Consumer Feedback	E-mail	1
	Telephone	1
	Mail	1
	Fax	1
Multimedia Applications	None	--
Unique Selling Point	None	--
Text Only Option	No	--
Homepage Load Time	8 seconds	--
Shopping experience (dmb)	Six searches before <i>The Matrix</i> was found. General searches from the home page returned nothing and even the first search within the 'Jungle vision' section of the page returned no results because the word "the" was included. Did not have anything in stock and a disclaimer said that it could take up to a week for the product to be shipped, results were well-organised and easy to read. Clicking gave a slightly larger but somewhat distorted picture	--
Shopping experience (cjo)	Site not as easy to use as others. Initial search for <i>The Matrix</i> yielded no results, yet I found <i>The Matrix</i> on their best-seller list. A lot of information is hidden on this web site.	--
Pictures	Yes	--
Item Descriptions	Yes	--
Reviews	No	--
Shopping Basket	Yes	--
Popularity	4th among retailers in UK Media Metrix	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Let's Buy It	0
URL	www.letsbuyit.com	0
Type of Site	Aggregate buying site (group buying)	0
Product Listings	8	0
Login Services	Member login	1
Security Policy	1	--
Customer Service Methods	Help Section	1
Order Confirmation	E-mail when order is placed	--
Delivery Policy	UK delivery only	2
Return Policy	30 day refund policy	2
FAQ Availability	FAQ section available	2
Consumer Feedback	Phone	2
	E-mail	2
Multimedia Applications	None	--
Unique Selling Point (USP_	E-mail confirmation	--
Text Only Option	No	--
Homepage Load Time	7 seconds	--
Shopping experience (dmb)	Limited opportunity for purchase unless interested in large appliances; search was ineffective in that it returned very few results, clicking on one of the highlighted products told the price and had extensive information about its capabilities. No explanation of the way the process of group buying works was evident from the first. well organised site but a little graphic heavy and slightly slow; membership required for a lot of options	--
Shopping experience (cjo)	Limited number of products available, so by either a search or menus, one can locate a specific product that is available; Not difficult.	--
Pictures	Yes	--
Item Descriptions	Yes	--
Reviews	No	--
Shopping Basket	No	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Mercata	0
URL	www.mercata.com	0
Type of Site	Group Buying	0
Product Listings	9	0
Login Services	Personal account available	0
Security Policy	3	--
Customer Service Methods	Customer service centre to manage and track personal accounts	1
Order Confirmation	E-mail confirmation	2
Delivery Policy	Standard delivery in 3-7 days from when shipped, with 1 and 2 day delivery available. Orders shipped out within 24-48 hours.	2
Return Policy	Can return a product in 30 days for a refund or an exchange.	2
FAQ Availability	FAQ section available	2
Consumer Feedback	E-mail	2
	Phone	2
	Fax	2
	Address	2
Multimedia Applications	None	--
Unique Selling Point (USP)	Group Buying; offer "Powerbuys" which are good deals on quality items.	--
Homepage Load Time	4 seconds	--
Shopping Experience (dmb)	Well rounded product categories, search was simple and fast, returning easy to read results with pictures and links to more information, text was friendly and there was an explanation of the 'powerbuy' approach directly from the top of the homepage which was helpful. They also sold products at a reduced rate without group buying so that allows for more options.	--
Shopping Experience (bww)	Searched for DVD players. Site was not easy to search for at all. Many options at some good prices, but the site appearance was not attractive. No place to search for items. An account had to be set up before the item was even purchased.	--
Pictures	Thumbnails, can be enlarged, some clearer than others	--
Item Descriptions	Available for all items	--
Reviews	Detailed information on the given products.	--
Shopping Basket	Yes	--
Popularity	No information available	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	My Simon	0
URL	www.mysimon.com	0
Type of Site	Comparison shopping; Portal	0
Product Categories	14	0
Login Services	Member login available	0
Security Policy	3	1
Customer Service Methods	E-mail	2
Order Confirmation	Unique to merchant	--
Delivery Policy	Unique to merchant	--
Return Policy	Unique to merchant	--
FAQ Availability	None	--
Consumer Feedback	E-mail	2
Multimedia Applications	Unique to merchant	--
Unique Selling Point (USP)	Great deals for members of Mysimon	0
Text Only Option	No	--
Homepage Load Time	6 seconds	--
Shopping experience (dmb)	Very long list of options; very small but pleasingly coloured text; listed type of book (hard, soft, audio) as well as price, date published, publisher; searched retailers, auctions and classified ads for new and used books; too many options to choose before comparison completed; somewhat confusing results (lots of different texts colours, sizes); included shipping and products price with total and delivery method; of 5 options investigated: nine had cover photos, one did not even bring up the book (retailers homepage only)	--
Shopping experience (cjo)	Searched for <i>A Tale of Two Cities</i> . 16 results were returned. Search was not organised by the lowest price so it was hard to determine which one actually had the lowest price. Shipping information was also given but results were not organised. When attempting to buy the book, the link specified just led to the site and forced to search again for the book. The search took too much time than it was worth.	--
Pictures	Unique to merchant	--
Item Descriptions	Available for all items	--
Shopping Basket	N/A	--
Reviews	Unique to merchant	--
Popularity	No information available	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	QXL	0
URL	www.qxl.com	0
Type of Site	Online Auctions	0
Product Categories	9	0
Login Services	Personal account available	0
Security Policy	5	0
Customer Service Methods	Member support section	1
Order Confirmation	Unique to merchant	--
Delivery Policy	Unique to merchant	--
Return Policy	Unique to merchant	--
FAQ Availability	FAQ Available	1
Consumer Feedback	Phone	1
	Fax	1
	E-mail	1
	Mail	1
Multimedia Applications	Animated graphic links	--
Unique Selling Point (USP)	Featured auctions	--
	My QXL	--
Text Only Option	No	--
Homepage Load Time	4 seconds	--
Shopping Experience (dmb)	Search was simple and fast; limited but promising results; login and password required for any information more than highest bid, bid increments, end of auction and quantity desired	--
Shopping Experience (cjo)	Search did not yield any results for <i>A Tale of Two Cities</i> . Consumer was limited to whatever products were being offered. A good site to use if you are looking for hard to find items.	--
Pictures	Unique to merchant	--
Item Descriptions	Yes	--
Reviews	No	--
Shopping Basket	No	--
Popularity	1st among UK auction sites in UK Media Metrix	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	ShopSmart	0
URL	www.shopsmart.com	0
Type of Site	Portal, Price Comparison Agent, Retailer rating system	0
Product Categories	14	0
Login Services	None	--
Security Policy	5	0
Customer Service Methods	Live Assistant	0
Order Confirmation	Unique to Merchant	--
Delivery Policy	Unique to Merchant	--
Return Policy	Unique to Merchant	--
FAQ Availability	FAQ section available	2
Consumer Feedback	Mail	1
	Phone	1
	Fax	1
	E-mail	1
Multimedia Applications	None	--
Unique Selling Point (USP)	Live Assistant- real time assistance for web site users	0
Text Only Option	No	0
Homepage Load Time	Data not able to be obtained	0
Shopping experience (dmb)	Search was simple and quick; results blended together; chose from list of initial results and reached a jump page to the comparison page then received zero results	--
Shopping experience (cjo)	Search was fast and effective. Many results were returned, and a price comparison could be conducted for each one. The number of shops searched was listed, as well as the shops that provided no results. Results could be sorted by several variables.	--
Pictures	Unique to Merchant	--
Item Descriptions	Unique to Merchant	--
Reviews	Unique to Merchant	--
Shopping Basket	Unique to Merchant	--
Popularity	3rd among UK retailers in UK Media Metrix.	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Ticketmaster	0
URL	www.ticketmaster.com	0
Type of Site	Online ticket sales	0
Product Categories	1	0
Login Services	Personal Accounts Available	0
Security Policy	3	2
Customer Service Methods	Customer Service Area	1
Order Confirmation	E-mail conformation within five minutes of ordering product	2
Delivery Policy	Allow at least 14 days from mail delivery. Express delivery can be arranged for a higher price.	3
Return Policy	No refunds or exchanges	3
FAQ Availability	FAQ Available	2
Consumer Feedback	E-mail	2
	Phone	2
Multimedia Applications	None available	--
Unique Selling Point (USP)	Extensive tickets can be found for sports, concerts, arts, and family	--
Shopping Experience (cjo)	If you know what you want, searching is easy. Seating charts of venues is helpful.	--
Shopping Experience (bww)	Searched for concert tickets to Bruce Springsteen. Very quick and easy to find: listed all concerts and whether or not tickets were available. Site is very useful for finding tickets to the events that use Ticketmaster. Easier than going to box office.	--
Pictures	Not needed	--
Item Descriptions	Yes	--
Reviews	N/A	--
Shopping Basket	N/A	--
Popularity	3rd among WPI students	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Valuamad	0
URL	www.valuamad.com	0
Type of Site	Price Comparison	0
Product Categories	12	0
Security Policy	5	0
Login Services	Registration for weekly updates	--
Customer Service Methods	Advice section	1
Order Confirmation	Unique to merchant	--
Delivery Policy	Unique to merchant	--
Return Policy	Unique to merchant	--
FAQ Availability	FAQ section	1
Consumer Feedback	E-mail	1
Multimedia Applications	Animated search robot	--
Unique Selling Point (USP)	Hot Deals	--
Text Only Option	No	--
Homepage Load Time	3 seconds	--
Shopping Experience (dmb)	Very small, pale text; search took over two minutes but there was an amusing animation during that time; brought back a large number of results and then went on to compare prices; search took over 2 minutes. Results included price, format, delivery time, and whether or not the retailer was in a partnership with Valuamad; easy to read results.	--
Shopping Experience (cjo)	Search was very long compared to other sites. Results were displayed, and specific items could be selected and prices compared. Items could be sorted by several categories. Approved partners of Valuamad were listed.	--
Pictures	Unique to merchant	--
Item Descriptions	Unique to merchant	--
Reviews	Unique to merchant	--
Shopping Basket	Unique to merchant	--
Popularity	No information available	--

Services of E-Commerce Web Sites		Number of pages from home page
Site Name	Yahoo Shopping	0
URL	www.uk.shopping.yahoo.com	0
Type of Site	Store Directory; Price Comparison	0
Product Categories	10	0
Login Services	Registration available for future sign-ins	1
Security Policy	4	--
Customer Service Methods	Shopping Help Section	1
Order Confirmation	Unique to merchant	--
Delivery Policy	Unique to merchant	--
Return Policy	Unique to merchant	--
FAQ Availability	FAQ section available	1
Consumer Feedback	E-mail	1
Multimedia Applications	None	--
Unique Selling Point (USP)	Shopping Basket allows for purchases from many retailers through one transaction	--
Text Only Option	Yes	--
Homepage Load Time	2 seconds	--
Shopping Experience (cjo)	After clicking on books link, title was entered and four results were returned quickly but there were no options to sort results. When a result was clicked on, directed to the merchants web site with the book selected for ordering. A fast and effective searching tool, however UK Yahoo is very limited in the number of merchants they search, and their store directory is also very small.	--
Shopping Experience (bww)	Searched for <i>A Tale of Two Cities</i> ; search was very quick. Only four results were returned, most of them were relatively expensive. After selecting a product, brought directly to the retailers web site. Purchase was made through Yahoo. Yahoo had a deceiving amount of products available in their categories. A lot of their categories had little to no items in them.	--
Pictures	Unique to merchant	--
Item Descriptions	Unique to merchant	--
Reviews	Unique to merchants	--
Shopping Basket	Yes	--
Popularity	2nd among SPSE students.	--

Appendix F: US Survey Results

Survey Totals for the US - Total Surveys: 310

Age:

Age	No.	Perc. Total (%)
17	3	0.97
18	83	26.77
19	99	31.94
20	69	22.26
21	29	9.35
22	16	5.16
23	5	1.61
24	3	0.97
25	1	0.32
27	1	0.32
32	1	0.32

Major:

Major	No.	Perc. Total (%)	Major	No.	Perc. Total (%)
ME	50	16.13	ECE	8	2.58
CS	44	14.19	MGE	8	2.58
EE	41	13.23	UND	8	2.58
BBT	30	9.68	BC	4	1.29
MIS	25	8.06	MA	4	1.29
CE	21	6.77	CH	2	0.65
BE	19	6.13	ED	1	0.32
CM	19	6.13	MFE	1	0.32
BBI	14	4.52	PH	1	0.32
IE	10	3.23			

Internet access available at:

Location	No.	Perc. Total (%)
On campus	258	83.23
Permanent	207	66.77
Student	184	59.35
Work	72	23.23
Friend's	3	0.97
None	1	0.32

Gender:

Gender	No.	Perc. Total (%)
Male	229	73.87
Female	81	26.13

Frequency of online purchases:

No. of times	No.	Perc. Total (%)
Never	80	25.81
1-2 time ever	71	22.90
1-2 times/year	24	7.74
2-5 times/year	67	21.61
More than 5	68	21.94

Web site statistics:

Web Site	Visited this site	Purchased from this site	Purchase from this site again.
amazon.com	186	97	83
ebay.com	160	68	60
Retail Stores online	150	72	55
ticketmaster.com	131	83	67
cdnow.com	105	48	40
buy.com	87	36	28
priceline.com	63	12	10
ubid.com	37	7	3
mercata.com	24	1	1
mysimon.com	14	2	1
ricewatch.com	8	7	6
bottomdollar.com	7	1	1
jcrew.com	5	5	5
yahoo.com	5	5	5
dealpilot.com	4	2	1
ecampus.com	4	4	3
onsale.com	4	4	4
egghead.com	3	3	2
accessmicro.com	2	2	2
animentation.com	2	2	2
bigstar.com	2	2	1
bigwords.com	2	2	2
expedia.com	2	2	2
flowers.com	2	2	2
outpost.com	2	2	2

victoriasecret.com	2	2	2
varsitybooks.com	2	2	2
800.com	2	2	2
Other	45	45	38

Concerns:

Concern	No.	Perc. Total (%)	Concern	No.	Perc. Total (%)
Internet Security	152	49.03	No interest	36	11.61
Difficult to return	143	46.13	No/Slow Access	30	9.68
Slow Delivery	87	28.06	Shipping Costs	8	2.58
Do not trust retailers	78	25.16	Other	6	1.94
Impersonal	43	13.87	No credit cards	4	1.29
Price	39	12.58			

Favourite web sites:

Site	NUM	WSA	EAU	POP	PSA	PRC	CUS	SEC	PR O	OTH	OTH
amazon.com	36	10	24	12	8	23	7	12	4	2 (FSD)	1(SPC)
ebay.com	35	6	24	13	9	30	4	9	3	1(BID)	
buy.com	13	7	6	5	5	13	4	6	2	--	1
ticketmaster.com	11	3	10	--	--	5	1	3	1	--	--
cdnow.com	8	2	6	--	1	6	3	2	1	1(DIS)	--
jcrew.com	7	2	5	2	--	1	2	1	2	--	--
pricewatch.com	4	--	1	--	--	4	--	--	--	--	--
bandn.com	3	--	1	--	--	2	--	--	1	--	--
ecampus.com	3	1	2	2	--	4	1	--	--	--	--
priceline.com	3	1	2	2	--	3	1	--	--	--	--
ubid.com	3	1	1	--	--	2	1	1	--	--	--
victoriasecret.com	3	2	2	2	2	2	1	1	--	1(CON)	--
onsale.com	2	--	1	1	1	2	--	--	--	--	--
outpost.com	2	--	1	--	--	2	--	--	--	--	--
varsitybooks.com	2	--	1	--	--	2	1	1	--	--	--
Other	29	6	13	6	5	20	5	3	6	1(DIS)	--

Key:

BID = bidding	POP = popularity
CON = convenient	PRC = price of items
CUS = customer service	PRO = products offered
DIS = discounts/coupons	PSA = personal accounts
EAU = ease of use	SEC = security offered
FSD = fast delivery	SPC = shipping costs
NUM = number of respondents who listed site as favourite	WSA = web site appearance

Appendix G: UK Survey Results

Survey Totals for the UK - Total Surveys: 208

Age:

Age	No.	Perc. Total (%)
16	1	0.48
18	25	12.02
19	39	18.75
20	48	23.08
21	35	16.83
22	18	8.65
23	15	7.21
24	9	4.33
25	5	2.40
26	5	2.40
27	4	1.92
28	1	0.48
29	1	0.48
30	1	0.48
36	1	0.48

Degree:

Major	No.	Perc. Total (%)	Major	No.	Perc. Total (%)
ENG	64	30.77	MAN	4	1.92
ME	61	29.33	CH	3	1.44
CS	30	14.42	CE	2	0.96
EE	30	14.42	PH	2	0.96
MA	9	4.33	F3GS	1	0.48
MEE	5	2.40	MSC	1	0.48
MGE	5	2.40	UND	1	0.48

Gender:

Gender	No.	Perc. Total (%)
Male	170	81.73
Female	38	18.27

Internet access available at:

Location	No.	Perc. Total (%)
On campus	191	91.83
Permanent	130	62.50
Student	46	22.12
Work	13	6.25
Mobile	3	1.44
Café	1	0.48
None	1	0.48

Frequency of online purchases:

No. of times	No.	Perc. Total (%)
Never	110	52.88
1-2 time ever	39	18.75
1-2 times/year	17	8.17
2-5 times/year	24	11.54
More than 5	18	8.65

Site Statistics:

Web Site	Visited this site	Purchased from this site	Purchase from this site again
amazon.co.uk	79	47	42
uk.yahoo.com	44	13	10
egg.com	28	8	4
bol.com	27	12	10
Shopsmart.com	18	2	2
ebay.co.uk	16	1	1
blackstar.co.uk	11	2	1
Retail Stores online	8	2	2
jungle.com	7	6	5
cdnow.com	6	6	5
insight.co.uk	5	5	5
shopgenie.co.uk	5	2	0
dabs.co.uk	4	4	4
trainline.co.uk	4	3	2
britishshopping.co.uk	3	1	1
dealttime.co.uk	3	0	0
III.co.uk	3	2	2
buzzaway.com	2	2	2
britishairways.com	2	2	2
simply.co.uk	2	2	2
valuemad.com	2	0	0
Other	35	33	31

Concerns:

Concern	No.	Perc. Total (%)	Concern	No	Perc. Total (%)
Internet security	129	62.02	Price	23	11.06
Difficult to return	83	39.90	No interest	21	10.10
Do not trust retailers	67	32.21	Other	5	2.40
Slow delivery	43	20.67	Unsure of product	4	1.92
No/Slow access	32	15.38	Tax	2	0.96
Impersonal	31	14.90			

Favourite Web Sites:

Site	NUM	WSA	EAU	POP	PSA	PRC	CUS	SEC	OTH	OTH
amazon.co.uk	12	3	7	4	3	11	4	4	1(FSD)	1(PRO)
jungle.com	5	4	4	3	2	5	1	1	--	--
amazon.com	4	1	3	3	1	1	1	3	--	--
cdnow.com	4	1	1	0	1	4	0	0	--	--
dabs.com	3	0	2	0	0	3	1	0	--	1
insight.com	3	0	2	1	1	3	1	0	1(CON)	--
trainline.co.uk	2	0	2	0	0	1	0	0	--	--
uk.yahoo.com	2	0	2	1	0	0	0	0	--	--
Other	30	9	14	7	3	18	6	6	1(FSD)	1

Key:

BID = bidding	POP = popularity
CON = convenient	PRC = price of items
CUS = customer service	PRO = products offered
DIS = discounts/coupons	PSA = personal accounts
EAU = ease of use	SEC = security offered
FSD = fast delivery	SPC = shipping costs
NUM = number of respondents who listed site as favourite	WSA = web site appearance

Appendix H: Results Obtained from All Interviewees

These results were summarised out of 56 Interviews.

Gender

M	69%
F	31%

What is your age range?

15-24	38%
25-34	43%
35-44	5%
45-54	11%
55+	3%

1.) Do you live in the United Kingdom? If no, these people will not be interviewed.

2.) How long have you been using the Internet? _____

Less than six months	7%
6 months – 1 year	7%
1-2 years	11%
2-5 years	57%
Over 5 years	18%

3.) How often do you use the Internet? _____

Less than once a week	5%
One-two times a week	18%
Three-six times a week	25%
Every day	52%

4.) From where do you access the Internet?

Internet Cafés	100%
Home	25%
Work	23%
School	9%
Other	5%

5.) What are your main purposes for using the Internet?

E-mail	80%
Research	32%
Work	18%
Surfing	14%
News	12%
Travel	5%
Communicating, personal messages	5%
Other	2%

6.) Do you like to shop at

Street Markets	YES	57%	NO	32%	SOMETIMES	11%
Small Shops	YES	71%	NO	20%	SOMETIMES	9%
Large Retail Shops	YES	61%	NO	29%	SOMETIMES	10%
Factory Outlets	YES	23%	NO	64%	SOMETIMES	13%
Catalogue Shopping	YES	13%	NO	82%	SOMETIMES	5%

7.) Are you familiar with e-commerce?

YES	68%
NO	32%

8.) Have you ever purchased an item online?

YES	43%
NO	57%

9.) There are several methods of advertising e-commerce sites use. Do any of the following methods attract your attention?

Billboards	YES	68%	NO	29%	SOMETIMES	3%
Radios spots	YES	38%	NO	54%	SOMETIMES	8%
TV spots	YES	63%	NO	27%	SOMETIMES	10%
Advertisements on the Internet	YES	36%	NO	52%	SOMETIMES	12%
Newspapers	YES	70%	NO	15%	SOMETIMES	15%
Buses	YES	63%	NO	25%	SOMETIMES	12%

10.) Are you aware any of these methods of online retailing?

Price Comparison: Ability to check the price of an item from many retailers' web sites simultaneously

YES	46%
NO	54%

Auctions: Consumers declare a price that they want to pay for an item and if another consumer does not outbid them, the item is sold to the most recent bid

YES 30%
NO 70%

Group Buying: Price of an item decreases as the number of people buying the item increases

YES 21%
NO 79%

Reverse Auction: Consumer sets a price and retailers either accept or decline it

YES 18%
NO 82%

Forums: Areas for consumers to consult with each other about products, retailers and other aspects of shopping

YES 16%
NO 84%

Portals: Directory of online shops

YES 23%
NO 77%

11.) What is the most appealing method of online retailing? Why?

Price Comparison	25%
Portal	10%
Auction	10%
Reverse Auction	4%
Group Buying	2%
None	49%

12.) Would you be interested in using a mobile phone to purchase products?

YES 48%
NO 52%

13.) Do you have specific concerns regarding online shopping? Any others?

Internet Security	59%
Do not trust retailers	20%
No Interest	14%
Impersonal	7%
Slow Delivery	7%
Difficult to return an item	5%
Price	4%
Access to Internet	2%

Appendix I: Results Obtained from E-commerce Users

Results were taken out of twenty-four responses.

9.) What web sites have you purchased an item from?

Travel related	10
Music related	7
Amazon	6
UK.yahoo	3
Barnes and Noble	1
Egg	1
Boo	1
Tesco	1

10.) Which of the sites you have bought from is your favourite?

Amazon	2	Reasons included price and the products offered
UK.yahoo	2	Reasons included the products offered and personalisation of site
easyJet	2	Reasons included price and being quick, easy to use
Cheaptickets	1	Reason indicated was ease of use and price of flights

11.) Where did you hear about the web site from?

Advertisements from magazines, tubes, newspapers, etc.	52%
Word of mouth	17%
Do not remember	26%
Other	5%

If they do not have a favourite site:

Responses taken out of seventeen people who did not specify a favorite site

12.) Why do you purchase products from those particular sites?

Price	31%
Convenience	31%
Products	25%
Other	13%

Appendix J: Results Obtained from Non E-commerce Users

Results tabulated out of thirty-two people who have shopped online.

9.) Have you ever visited an e-commerce web site?

YES	50%
NO	50%

If they have visited an e-commerce site:

Results tabulated out of sixteen people who have visited an e-commerce site.

10.) Where did you hear about the web site from?

Advertisements (Magazines, TV, etc.)	53%
Word of Mouth	27%
Do not remember	20%

11.) Why did you decide not to purchase the item online?

Security	33%
Like to shop themselves	20%
Just looking	20%
No Interest	13%
Other	13%

If they have not visited an e-commerce site:

Results tabulated out of sixteen people who have not visited an e-commerce site.

12.) Why have you not looked at these sites?

No Interest	43%
Not familiar with it	21%
Like to shop themselves	14%
Security	7%
Other	14%