“Product Information Search By Online Customers”

By

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THIS PAPER IS MY CONTRIBUTION TO THE NEW ERA OF INTERNET BUSINESS WHICH, IN MY OPINION WOULD GO A LONG WAY TO INFLUENCE BUSINESS ACTIVITIES IN GHANA AND OTHER AFRICAN COUNTRIES. STUDENTS OF MARKETING AND E-COMMERCE AND OTHER YOUNG PEOPLE OF AFRICA WHO WANT TO CASH IN THE BILLIONS OF DOLLARS THAT THE INTERNET BRINGS IN GLOBALLY.
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Abstract
An important aspect of consumer behaviour in today’s electronic environments is the search habits consumers adopt when gathering information before making a purchase decision. The aim of this study was to gain a better understanding of how consumers search for product information online. More specifically, this study further tries to explore the factors that influence consumers in their product search activities online, as well as the preferred search tools and search habits utilized. In addition, the problems associated with product information search online, and the potential shortcuts employed by most customers, were points of focus. The empirical data was gathered through a group of consumers on the mailing list of the researcher, having being on the Internet for sometime as an online marketer, the researcher has currently got his own websites (www.geemarketing.com) selling various items online. The list therefore included his exiting customers, potential customers and other online marketers. These mailing lists are people from different parts of the world, however, majority of the respondents were from Europe and United States of America and few from Africa and Asia. The findings and conclusions of this study indicated that there are several factors that influence consumers search activities online. In addition, a few different search tools used for product information search online were detected, as well as, a few different problems associated with searching on the Internet. Finally, it was found that information seekers utilize mental shortcuts in order to reduce the amount of information searched online.
Preface

The work presented in this dissertation was carried out over a period between winter 2003 and summer 2004 as an MBA programme with Oaklands University in the USA. During this time and all my studies period I had help form several different people that I would like to thank. First, I would like to thank my lecturer Jeremy French, administrators Hamza and Nikos at City Banking College in London and Phillip Samuels at the School of Management Studies, Oaklands University for their support and helpful advice during my period of studies.

Secondly, I would like to thank all the participants on my name list for taking the time to participate in this study. I would also like to thank my family, my wife Mrs Beauty Ekeha, my mum Agnes Obri, who was looking after my kids during the period of my studies and all my kids, Norris Walter, Bright Mawusi, Urielle Jorgbenue and Suzzy Ekeha for their support during my studies. Finally, I would like to thank my Administrative Director at my work place, Mr. Samuel Boakye and all members of the Accounts Department at Ghana Statistical Services, Ministry of Finance.

Throughout the period of my studies and work with this dissertation, I have gained a lot of knowledge, experience, and insight of good business management and the area of online marketing, and this would also helped me contribute to the future research within this area and other managerial processes both in public and private sectors.

August 2004

GEORGE EKEGEY EKEHA
1. Introduction
This chapter discusses the background to the problem area. It is followed by a problem discussion and an overall purpose. From the purpose specific research questions are posed for this dissertation. Finally, the demarcations and the disposition of the dissertation are presented.

1.1 Background
With increased globalisation of the world economies, for most commercial enterprises, market opportunities seem to be endless these days (Paul 1996). Much of this is due to the development of the communication technology called the Internet. With over 50 million people connected within only five years, the Internet has become the fastest growing communications medium ever (Kalakota & Robinson, 1999). This rapid evolvement has a lot to do with the development of graphical interfaces on the Internet, allowing even those who are technologically unsavvy to utilize the Internet. Part of this development has included the advent of the World Wide Web, which provides a virtual connection among independent computers located around the world (Breitenbach & Van Doren, 1998).

The Web represents an extremely efficient medium for accessing, organizing, and communicating information. As such, the Internet covers various facets of communication technologies ranging from the written and spoken word to visual images, (Yelkur & Manuela, 2001). More and more businesses today are discovering the Internet as a fundamental communication tool for conducting daily business. Large and small companies are embracing the Web in order to communicate with current and potential customers abroad with the same cost and ease as in their home countries. The fact is that the Internet has made it so possible that every business today can be run with computers in two worlds: a physical world of resources that managers can see and touch and a virtual world made of information (Kiani, 1998).

The buying and selling over this digital media is called electronic commerce, or e-commerce (Kalakota & Robinson, 1999). E-commerce is not just a single technology but also a combination of technologies, applications, processes, business strategies, and practices, necessary to do business electronically (McIvor, Humphreys & Huang, 2000). E-commerce has experienced rapid growth during its infant years and the pace is not expected to slow down (Ward and Lee, 2000). In 1999, e-commerce transactions accounted for over $150 billion in sales and it is predicted that this amount will increase to $3 trillion by the year 2003 (Yelkur & Manuela, 2001).
Today, it is very possible to sell anything on the internet using some online shopping malls such as Yahoo or Ebay and/or a personal website. Because the Web presents a significantly different environment for marketing activities, traditional media and conventional marketing activities are being transformed, as they are often difficult to implement in their present form (Hoffman & Novak, 1996). According to Hoffman and Novak (1996) virtually every aspect of Web-based marketing strategy differs from the manner in which firms are used to doing business.

Besides changing the components of the traditional marketing mix, some of the most intriguing effects of the Internet will come in how the trade-off between components of the marketing mix operate. Traditionally the amount of products a retailer could carry in one place was more than the amount of information they could present about the product in their promotions. The Internet has eliminated that trade-off and today, Internet retailers can offer many more products than the largest bricks and mortar retailers and provide detailed product information at the same time. Warehousing and distribution are no longer part of navigation and selection. Therefore, manufacturers are no longer limited in the size of their market and the amount of information they can present to consumers through promotions (Allen & Fjermestad, 2001)

Promotion is one of the key 4Ps in the marketing mix and as such has a key role to play in marketing success (Rowley, 2001). The role of promotion is to coordinate all seller-initiated efforts to set up channels of information and persuasion to sell goods and services or promote an idea (Belch & Belch, 2001). In addition, promotion encompasses all the various activities an organization undertakes to communicate its products’ merits and persuade target customers to buy from them (Kotler 2003; Allen & Fjermestad, 2001). A challenge faced by all marketers is how to influence the purchase behaviour of consumers in favour of the product or service they offer. While their ultimate goal is to influence consumers’ purchase behaviour, most marketers understand that the actual purchase is only part of an overall process. Therefore, in order to develop lasting promotion strategies companies need to have an understanding of how consumers behave (Belch & Belch, 2001). This is supported by Arens (1996) who says that an understanding of consumer behaviour helps advertisers bring products into the collective consciousness of prospective customers.
Consumer behaviour is important from a number of different points of view. From the perspective of marketing and especially promotion, the study of consumer behaviour is important in helping to forecast and understand consumer demand for products as well as brand preferences. Consumers also need to gain insight into their own behaviour if they are to spend their income optimally. From the perspective of science, the study of consumer behaviour is a rich domain in which to test economic, cognitive, economic–psychological and social–psychological theories (Kotler 2003; Antonides & Van Raaij, 1998). In addition, an understanding of consumer behaviour on the Internet is increasingly important because the amount of previous studies are limited, due to the fact that e-shopping is only just beginning to penetrate mass markets (Rowley, 2000a).

Unfortunately, there is no single theory of consumer behaviour that can explain why consumers behave as they do. Instead, there are numerous theories, models, and concepts making up the field. One of the theories that are important to understand is that of the consumer decision-making process (Kotler 2003; Peter & Donnelly, 2000). In this process a consumer decides to make a purchase and then goes through a series of steps in order to make it. These steps can be described as a series of actions and are presented in Figure 1.1. below. (France, Yen, Wang & Chang, 2002)
1.2 Problem Discussion
An important aspect of consumer behaviour on the Internet will be the search habits that consumers adopt in gathering information to inform their buying decisions (Rowley, 2000a). This is the second stage of the decision-making process, consumer information search behaviour, which has emerged as an important field of study. This is not surprising given that information search is an integral aspect of consumer decision-making. Hence, understanding information search is crucial for designing effective marketing communication campaigns because it represents the first stage at which marketing can provide information, and therefore influence consumers’ decisions (McColl-Kennedy & Fetter Jr., 2001). In other words, this is the stage where promotional messages should reach the intended consumer (Rowley, 2001).
Sometimes consumers will actively seek out information with the idea of using it to make a decision (directed or purposeful searching). On other occasions users browse through information sources gathering information that they may use immediately or later (Rowley, 2000a).

Information sources can roughly be broken down into two kinds: internal and external. As a result of prior experience and simply living in a consumer culture, consumers often have some degree of knowledge about many products already in memory. When confronted with a purchase decision, consumers may engage in internal search by scanning their own memory banks to assemble information about different product alternatives. Usually, though, even the most market-aware consumer needs to supplement this knowledge with external search, where information is obtained from advertisements, friends, or just plain people watching (Solomon et al., 1999). Ultimately, consumers are likely to gather information from a variety of different sources in the process of making consumer decisions. The information available over the Web is only one of those sources, and cannot be viewed in isolation. Often, the first place that consumers look to solve a problem is internally.

Consumers may derive solutions from their own experience. The available option and habits are most easily retrieved from memory. However, internal search processes are often not optimal, since some options may be forgotten. Experienced consumers may solve many problems using internal search, while consumers with little experience, or experienced consumers in new or changed situations, may use external search. (Antonides & Van Raaij, 1998). The knowledge of how consumers acquire and use information from external sources is important to marketers in formulating communication strategies (Kotler 2003; Belch & Belch, 2001). Although consumer information search has received considerable attention, both conceptual and empirical, in the marketing literature. However, the few studies that have been done within the area have a belief that the Internet has changed the way consumers search for information (Spink, Bateman & Jansen, 1999, and France et al. 2002).

On the Internet some of the factors become even more important. For example, users have a wide range of different educational backgrounds and levels of experience with the system. Users range from being subject domain novices and computer novices all the way to subject experts and computer experts. The degree of knowledgeability of the computer user and the domain experience will have an effect on the search activity undertaken. Moreover, on the Internet consumers will make a range of different types of
buying decisions, and it is to be expected, for example, that information-gathering habits will be different for different types of purchase decisions.

Consumer information search online has also been greatly affected by the amount of information available to the consumer (Maity, Zinkhan & Kwak, 2002). Through on the Internet, consumers can obtain product information and often make purchases with much less effort than through other distribution channels. Likewise, with the low cost of Web publishing, companies can offer more product information through this medium than most other. This results in more information being supplied to consumers than ever before. (Ward & Lee, 2000). Plentiful product information may not alleviate all the problems of consumer information search on the Web for two reasons (Ward & Lee, 2000). First, despite the increased availability of product information it is still not costless to obtain (Brynjolfsson & Smith, 1999).

According to Maity et al. (2002) the amount of information available on the Internet is abundant, and this affects the amount of information search that is ultimately undertaken by the consumer. Information overload acts as a factor that influences the pattern of search that occurs. The authors add, “too much information, in fact, acts as a deterring factor rather than an encouraging one” (ibid). This is since, consumers are only able to process a certain amount of information and as a result, people appear to utilize some sort of heuristics in order to keep the information processing to an amount that they can handle. (Payne, 1976). Heuristics can be defined as shortcuts or mental rules of thumb that lead to a speedy decision (Solomon et al., 1999).

One way to reduce the information processing online, for the consumer, is to rely on one of the search tools available (Rowley, 2000b). These tools support the decision-making process of consumers who are shopping on the Web. Some of them even support multi-attribute heuristics such as elimination by aspect and the conjunctive rule (Pereria, 1999). Internet-based services or search tools (e.g. search engines, shop bots, and directories) can provide one-click access to price and product information from numerous competing retailers. They take a query, visit shops that may have the product sought, bring back the results, provide lists of summary information, and present them in a consolidate and compact format that allows comparison – shopping at a glance whenever required by searchers. In doing so, they substantially reduce consumer cognitive burden of information search (Jiang, 2002).
1.3 Purpose
The purpose of this dissertation is to help the writer (a new online marketer) to gain good understanding with regards to doing full business online and specifically formulated as:

“To gain a better understanding of how consumers search for product information online”

1.4 Research Questions
The research questions are specifically formulated as:

Research Question 1: How can the factors influencing product search activity online be described?

Research Question 2: How can the preferred search tools for product information search online be described?

Research Question 3: How can the problems associated with product information search online be described?

Research Question 4: How can the shortcuts utilized for product information search online be described?

1.5 Demarcations
Because of the time constrains, this study has been limited. The study will focus on information search for physical products rather than services because a lot of the information found online is mainly focused on these types of products. The aim is to investigate product information search behaviour online, from a consumer perspective.

1.6 Disposition of the Dissertation
This dissertation is divided in six chapters. In this chapter, the reader has received an insight to the field of study, followed by the problem discussion, a presentation of the overall purpose of the study, the research questions posed, and the demarcations of the study. In the second chapter the reader is provided with a literature review of previous research conducted within the area of the overall purpose, which serve as theories for the study. The frame of reference, following the literature review, further specifies the theories that will be used. Chapter three describes and motivates the choices of methodology made for this dissertation. In chapter four, the collected empirical data is presented. The empirical data gathered is then analysed in chapter five. In the final chapter, Conclusions and Implications, general conclusions are
drawn based on the findings of the research conducted. At the end of this sixth chapter, implications for further research are presented. The disposition of the dissertation is illustrated in Table 1.1 below.

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**Table 1.1 Disposition of the Dissertation**
2. Literature Review
In the previous chapter an introduction and background to the research area of this study was presented, as well as the overall purpose and research questions. This chapter presents the literature review for the research.

2.1 Factors Influencing Product Search Activity Online
Factors influencing the search activity a consumer performs online can be found in a number of different theories both online and offline. These include market environment, situational variables, knowledge and experience, individual differences, and cost of search.

2.1.1 Market Environment
According to Jarvis (1998) the market environment includes aspects such as difficulty of the choice task, number of alternatives, and complexity of the alternatives.

Difficulty of the Choice Task
Research has indicated that differences in the nature of the search task may have important effects on Web searching strategies and results. Researchers have, for example, found differences in search strategies and results according to type of task (Ford, Miller & Moss, 2002). One helpful way to determine the difficulty of the choice task in the decision-making process is to consider the amount of effort that goes into the decision/choice each time it is made (Solomon et al., 1999 & Jarvis, 1998). The difficulty can also be perceived differently depending on the type of product the consumer is about to purchase (Arens, 1996).

Types of Decision-making
In general, there are three types of decision-making, which vary in terms of how complex or expensive a product is and how involved a consumer is in purchasing it (Peter & Donnelly Jr., 2000). Routine decision-making is the most common type and is the way consumers purchase most packaged goods (Peter & Donnelly Jr., 2000). Many purchase decisions are so routine that the consumer may not realize that they have made them until they look in their shopping carts. The development of habitual, repetitive behaviour allows consumers to minimize the time and energy spent on everyday purchase decisions (Solomon et al., 1999). Limited decision-making is more moderate but still involves some time and effort searching for and comparing alternatives (Peter & Donnelly Jr., 2000). Limited problem-solving is usually used for inexpensive, less complex products and more straightforward and simple. Buyers are not as motivated to search for information or to evaluate each alternative rigorously. People instead use
simple decision rules to choose among alternatives. *Extensive decision-making* requires the most time and effort, since the purchase involves a highly complex or expensive product that is important to the consumer. As a rule, purchase decisions that involve extensive search also entail some kind of perceived risk, or the belief that the product has potentially negative consequences (ibid).

**Product Classification**

According to Arens (1996) there are many ways to classify products. One way is to classify products by their rate of consumption and tangibility:

- **Durable goods.** Durable goods are tangible products that are long lasting and infrequently replaced. Examples of these types of products are cars, trucks, refrigerators, and furniture.
- **Non-durable goods.** Non-durable goods are tangible products that may be consumed in one or a few uses and usually need to be replaced at regular intervals. Examples of these types of products are food, soap, gasoline, and oil.
- **Services.** Services are activities, benefits, or satisfaction offered for sale. Examples of services are haircuts, legal and medical services, massages, and travel. (Ibid.)

**Number of Alternatives**

The complexity of an information source can be influenced by how many different types of sources are available for a particular product. When faced with more complex multiple sources of information consumers usually try to reduce the alternatives by elimination (Jarvis, 1998). Because of the myriad of alternatives available today through the Internet, consumers typically consider a much smaller subset of information sources in their purchase decisions. It is expected that careful consideration will not be given to all of the available alternatives or even to all of the familiar ones. Instead, the consumer is likely to engage in a multi-stage choice process whereby a small set of options is identified and a final choice is made after more detailed consideration through a process referred to as the phased narrowing of the consideration set (Pereria, 1999)

**Complexity of the Alternative**

The complexity of the alternative is increased, for example, when an information source must be judged based on accuracy, timeliness, completeness and ease of use (Jarvis, 1998). According to Ward and Lee (2000) accuracy of the information is a major influence on search activity on the Internet. More specifically, the posing of inaccurate information online causes problems for the consumers, who do not know what information to trust.
2.1.2 Individual Differences
Consumers differ in the amount of search they tend to undertake, regardless of the product category in
question due to individual differences. Two types of differences that can affect information search are
motivational factors and demographics (Solomon et al. 1999).

Motivational Factors
Little empirical effort has been devoted to motivational factors in consumer choice behaviour. This has
been particularly true in the study of information search behaviour. “A motivating variable is a variable
that activates behaviour and provides purpose and direction to that behaviour” (Beatty & Smith, 1987, p.
85). A particularly viable motivational construct that has not been empirically linked to external
information search is involvement (Ibid.). Consistent with a motivational perspective, product
involvement can be defined as “an internal state variable that indicates the amount of arousal, interest or
drive evoked by a product class” (Beatty & Smith, 1987, p. 85), which is consistent with definitions of
other consumer psychologists. The authors suggest that under low involvement conditions, individuals
engage in minimal search, while under high involvement conditions, individuals engage in extensive
search.

Demographics
According to Solomon et al. (1999) demographics are statistics that measure observable aspects of a
population. Examples of demographics are age, gender, income, occupation, family structure, race and
ethnicity, and geography (ibid).

Age. Consumers in different age groups have very different needs and wants. While people who belong to
the same age group differ in many other ways, they do tend to share a set of values and common cultural
experiences that they carry throughout life. (Solomon et al., 1999). According to Taylor (1998), age and
search effort are negatively related. More specifically, with increasing age, individuals accumulate a
wealth of information and also perceive less need to seek information from external sources, resulting in
an inverse relationship between age and search effort (ibid). All things being equal, younger, better
educated people who enjoy the shopping/fact-finding process tend to conduct more information search
(Solomon et al., 1999).

Gender. Women are more likely to search than men, as are those who place greater value on style and the
image they present (Solomon et al., 1999).
Family Structure. A person’s family and marital status is yet another important demographic variable, since this has such a big effect on consumers’ spending priorities (ibid).

Social Class and Income. People in the same social class are approximately equal in terms of their incomes and social status. They work in more or less similar occupations and tend to have similar tastes in music, clothing, and so on. They also tend to socialize with one another, and share many ideas and values.

Race and Ethnicity. As our societies grow increasingly multicultural, new opportunities develop to deliver specialized products to racial and ethnic groups, and to introduce other groups to these offerings (ibid).

Geography. Most of the evidence points to the fact that cultural differences persist in playing a decisive role in forming our consumption patterns and our unique expressions of consumption (ibid).

2.1.3 Situational Variables
Most theories, addressing the role of information search activities in the consumer decision-making process, assert that search is a means by which consumers reduce uncertainty and perceived risk (McColl-Kennedy & Fetter, Jr., 2001). Perceived risk refers to “the nature and amount of risk perceived by a consumer in contemplating a particular purchase decision” (Park & Stoel, 2002, p. 159). An important property of risk conceptualisation within consumer psychology is that risk is thought to arise only from potentially negative outcomes, in contrast to other disciplines such as behavioural decision theory and other areas of psychology where both positive and negative aspects are considered when evaluating risk (Dholakia, 2001).

2.1.4 Knowledge and Experience
According to Solomon et al. (1999) product experts and beginners use very different procedures during decision-making. While many studies have found positive effects of knowledge on search, several others have found negative effects, and still others suggest an inverted-U relationship (Fiske, Luebbehusen, Miyazaki, & Urbany, 1994, Solomon et al., 1999, Antonides & Van Raaij, 1994). According to Fiske et al. (1994) one needs to distinguish between two components of knowledge, which appear in discussions of the knowledge-search relationship. Usable Prior Information is a dimension of knowledge that refers to the quantity of directly relevant product information held in memory. The second dimension of knowledge is Prior Memory Structure, which refers to the consumer’s knowledge of the buying process and the knowledge associated with the product category in general.
2.1.5 Cost of Search
Information collection and processing often involves financial and time costs (Antonides & Van Raaij, 1998). The financial costs include travel and telephone costs among other things. The financial costs and behavioural costs are weighed against the expected advantages of a better decision (ibid). According to Smith (2000), decision makers may prioritise search according to anticipated “payoff”. First, market alternatives are gathered that offer the highest reward for search effort, and search continues until the sampled reward exceeds the expected rewards available elsewhere (ibid). High search cost situations have a notable effect: they reduce the number of potential products that may be searched within a limited time frame. Thus, buyers will rationally prioritise and limit search to more rewarding opportunities that should be present with higher priced products, and forgo search on less rewarding opportunities at lower price points. Consequently, when search costs are high, lower priced products will receive residual emphasis and priority.

According to Jiang (2002), the ability and the perceived reduction in time cost to search increase search activity. More specifically, the more accessible the information is in the environment, the lower the cost will be to search and process the information. Further, consumers form intentions for collecting information and the ease of collecting this information influences whether or not their intentions are fulfilled. Information accessibility was employed as a term to deal with the extent to which information is available and accessible to the consumer in a format that the consumer can use (ibid).

2.2 Preferred Search Tools for Retrieving Product Information Online
A Web search is the process of accessing information available in the global information system of the Web (France et al., 2002). The Web is a collection of information of all kinds. However, the selection, organization, and retrieval of Web materials are not standardized and wide variations exists in the access capabilities of Web search tools (Spink, Bateman & Jansen, 1999). The difficulty of finding information on the Web has been widely recognized, both directly and indirectly, in the production of a large number of tools to aid the search process. (Thelwall, Binns, Harries, Page-Kennedy, Price & Wilkinson, 2001)

2.2.1 Most Preferred Search Tools
There are many different types of search tools on the Internet today (Green, 2000), but what do consumers use the most are the search engines (Schefren 2006, Bruemmer, 2002). Search engines have
grown at a high rate during the past few years. This has been in response to a large number of companies going online (Maity et al., 2002). One of the most popular ways of finding product information on the Web is by using search engines like Google, Yahoo!, Hotbot/Lycos and Excite (Lindström & Andersen, 2000). According to Jupiter Media Metrix (2001), 47 percent of shoppers prefer search engines when searching for product information online. This is somewhat in accordance with Thelwall (2001) whose survey has shown that Web directories and search engines are amongst the most popular search tools on the Internet.

2.2.2 Tools Available For Consumers Online
There are other search tools that consumers may use to locate product information online. These are available in two categories: general-purpose search tools, such as search engines and browsers and specially designed tools, such as shopping bots. This section first considers the general search tools, partly because some product searching will be directly through such tools, but also because shopping bots are sometimes embedded in, or offered as a feature in, a search engine (Rowley, 2000a).

General Search Tools
According to Rowley (2000a) there are two approaches to searching: those offered by browsers, which exploit hyperlinks between documents or sites, and search engines, which perform searches on the basis of words or phrases, through the use of a large indexing of Web resources. Browsers rely on the network of hyperlinks that are embedded in documents. These links are created through a combination of:

- An addressing system that allows the location of any object stored on a networked computer to be uniquely identified by a uniform resource locator (URL);
- A mark-up language (HTML) that allows the authors of documents to identify a particular location within their documents as the source of links, and to specify the location of the target of those links;
- A transfer protocol (HTTP) that allows copies of target documents stored on remote servers to be retrieved and displayed;
- A client program, or Web browser such as Netscape Navigator or Internet Explorer that provides the user with control over the retrieval process and over the links to be activated (ibid).

Typically browsers are used in product searching when the shopper knows the URL of the site that they wish to visit. This will be the case if they have already established a relationship with the merchant, and
have visited the site before, or, if they have been subjected to positive word of mouth recommendations from family and friends, or strong promotional messages in electronic and other media. For example, many users when buying a book will immediately visit Amazon.com or Amazon.co.uk, because their awareness of the Amazon brand name has been raised through heavy investment in promotion. Comparison shopping is unlikely to be a feature when using browsers (Rowley, 2000b).

**Search Engines**

Search engines work as enormous databases, where the search is carried out by giving the search engine one or more keywords (Lindström & Andersen, 2000). Search engines are essentially query generators that use key words and logical relationships to find Web documents or files that meet the search requirements and create a "virtual" document (the search results) containing links to the documents found in the search. The uniform resource locator (URL) of the documents that have been found can then be used to link to those documents or files for viewing (France et al., 2002). The primary application of search engines is to provide access to the resources that are available on the Internet, and stored on many different servers (Rowley, 2000a). Most search engines are free, with their financial support coming from advertising revenue and through sales of the underlying technology.

Search engines provide three chief facilities:

1. they gather together (conceptually, anyway) a set of Web pages that form the universe from which a searcher can retrieve information;
2. they represent the pages in this universe in a fashion that attempts to capture their content; and
3. they allow searchers to issue queries, employing information retrieval algorithms that attempt to find most relevant pages from the universe.

Search engines differ somewhat from each other along all these dimensions (Gordon & Pathak, 1999). Search engines vary in coverage of sites, search facilities and process, and the presentation of the outcomes or results. It is also important to remember that some search engines are available in different versions for use in different countries. In addition, it should be noted that search engines not only exist as separate Web sites that search the entire Web, but also exist on specific e-retailers sites. E-retailers with large catalogues of products need a search engine to support users in finding their way through their product range. This is typically likely to be the case for retailers involved in selling books, CD-ROMs and music (Rowley, 2000a). Some search engines also offer advanced search facilities, enabling users to
submit complex queries. However, it has been found that relatively few searches actually include these facilities (Thelwall et al., 2001). One reason for the lack of use of the advanced queries has been suggested to be that they give only minor improvements in what is retrieved (Jansen, 2000).

**Web directories**

These are pre-defined list of Web sites, which is compiled by human editors and categorized according to subject/topic. Because humans compile Web directories, a qualitative decision concerning the content on each listed Web site has already been made. Consequently, Web directories are popular with Internet users looking for particular information because they feel that they have a head start in identifying “the best of the Web” for the topic they are interested in. In a broad sense, any Web site that comprises several pages of organized links can be considered a Web directory (Green, 2000).

**Newsgroup Searching**

While the Web is the primary repository of human knowledge on the Internet, it is not the only one. Newsgroups, are collections of individuals sharing their experiences, knowledge and opinions on a subject of common interest. The distinction between the Web and newsgroups is that the Web primarily represents a large body of explicit human knowledge whilst newsgroups primarily represent a large body of implicit knowledge (Green, 2000).

**Shopping bots**

Bot is an abbreviation for robot. Shopping bots are tools that help e-shoppers to identify, locate, and compare products available from e-retailers (Rowley, 2000b). They take a query, visit shops that may have the product sought, bring back the results, and present them in a consolidated and compact format that allows comparison shopping at a glance (Rowley, 2000a). There are a number of different kinds of bots designed to fulfil different purposes, such as software bots, stock bots, update bots, fun bots, chatter bots, and news bots (Rowley, 2000b). Customers can at some shopping bots specify a range of choices by checking off boxes. Other shopping bots can use a range of indicators to perform a personal life style analysis and use this as a basis for recommending specific products.

### 2.2.3 How Consumers Utilize Search Tools

Iivonen and White (2001) have found that previous studies about Web searching indicate that Web searchers prefer known sites, browse on the Web, and use rather simple searches if they use search engines. Furthermore, Jupiter Media Matrix (2001) has found that consumers have different ways of searching for product information online, which is presented in Table 2.1 below.
Table 2.1. How Consumers Search for Product Information Online


Iivonen and White (2001) have also found that there are differences in how consumers search the internet, depending on what country and culture they come from. In their research they studied and compared how Americans and Finnish students searched for information on the Internet. The authors found that the participants in their study differ significantly in the choice of initial search strategy. The Americans were rather evenly split across three different alternatives (search engines, direct address and Web directories), relying slightly more on search engines than the other two. The Finnish, on the other hand, were more concentrated in their use of search engines and used, in order, search engines, direct address and Web directories. They used search engines more than the Americans and relied much less on Web directories than the Americans (ibid).

### 2.3 Problems Associated with Online Information Search

In general, when it comes to problems on the Web, finding information or information seeking is one of the most significant ones (Vaughan, 1999). Internet-based services (e.g. search engines, shop bots) can provide one-click access to price and product information from numerous competing retailers. They take a query, visit shops that may have the product sought, bring back the results, provide lists of summary information, and present them in a consolidated and compact format that allows comparison - shopping at
a glance whenever required by searchers. In doing so, they substantially reduce consumer cognitive burden of information search. Less dependence on human perceptual abilities, on the other hand, will increase the dependence on the efficiency of online search facilities for skimming information and making choices (Kline, 2002).

The quest for the perfect search tool has become the Holy Grail for many today. Consequently, each new search tool is evaluated all the time. As the tools are evaluated, new reasons for encouragement is found, but ultimately, the tools still leave some basic needs unmet. One way to articulate these problems is to loosely group them into three categories: (1) Searching difficulties; (2) retrieval issues; (3) document discrimination problems (ibid).

2.3.1 Searching Difficulties
Perhaps the greatest challenge of all is translating a mental desire for information into an effective query for a search tool. Information tools have traditionally used two query styles, thus controlled vocabulary and keyword searching. Controlled vocabularies are useful because they express concepts using a standardized set of terms. Unfortunately, users often have trouble discovering the proper terms for a concept and understanding how that concept relates to others. Keyword searching allows more flexibility in expressing a search, but it creates its own set of problems (Kline 2002). One of the most interesting challenges is disambiguating words that have multiple meanings. For example the word rock can represent a natural object, a musical style, a motion, or a form of cocaine.

2.3.2 Retrieval Issues
Once a search is performed, the next problem is dealing with the documents retrieved. As search sets continue to grow, managing the results of information retrieval becomes an increasingly pressing problem (Kline, 2002). Recent trends in search tool development have been driven by the need to identify the pages on the Web that are most likely to satisfy any given information request (Thelwall et al., 2001). In order to do so, search tools typically use some form of relevancy ranking for results, weighting items in the results list according to how many search terms the site contains, how frequently those terms appear, placement of terms within the site, and other criteria (Poulter, 1997 and Thelwall, 2001). According to Vaughan (1999) there are problems for the users in the quantity, precision, and readability of the results that is received from the searches. “It’s nice to get 500 hits, but if 400 of them aren’t really on target or if all you get back is a hyperlink with no explanation, you’re not likely to benefit much” (ibid., p. 3).
2.3.3 Document Discrimination Problems
Even with the best relevancy ranking, search results can be overwhelming (Kline, 2002). A typical complaint in using search tools is that they produce an excess amount of results. To a large extent, this is simply a side effect of the number of pages that are present on the Web and the poor performance of ranking algorithms. However, there are other issues that can make the overload of results even worse. For example, people trying to advertise their sites on the Web have discovered “index spamming”, that is putting irrelevant, but frequently sought words (e.g. “sex”, “football” etc.) on their pages to make sure their sites are retrieved by common searches, whether relevant to the search or not (Joel Comm, 2006). A more subtle form of index spamming is of a web page being overfilled with repeated keywords, for example, “Bermuda” and “holiday,” to push this page to the top of any ranked results list for a search on holidays in Bermuda (Poulter, 1997). Typically a search will produce either too many or too few results.

2.4 Shortcuts Utilized for Searches Online
It has long been known that too much information slows decision-making. Human beings are capable of processing information only up to a certain point – a point to which the perceived marginal benefit obtained is more than the perceived marginal cost. Once this point is reached, there is no further processing of information, and decisions are made on whatever has been collected (Maity et al., 2002).

2.4.1 Use of Heuristics
Perhaps the most important generalization to come out of efforts to study human information processing is that an individual is a limited information processing system. In particular, the active processing of information occurs in a memory of limited capacity, duration, and ability to place information in more permanent storage. As a result, people appear to utilize heuristics that serve to keep the information processing demands of a task within the bounds of their limited cognitive capacities (Payne, 1976). Marketing literature provides evidence that consumers frequently use some type of simplification heuristic prior to making choices (Maity et al., 2002). They do this in order to reduce the amount of information they have to search and evaluate in making a decision (Payne, 1976). Heuristics can be defined as “problem-solving methods that tend to produce efficient solutions to difficult problems by restricting the search through the space of possible solutions. The restriction on search is based on evaluation of the structure of the problem” (Payne, 1976). Solomon et al. (1999) further clarifies the
definition by comparing heuristics with mental shortcuts or mental rules-of-thumb that lead to a speedy
decision for the consumer.

2.4.2 Choice by Brand Name
When information is incomplete, judgments often are derived from beliefs about co-variation, or
perceived associations among events that may or may not actually influence one another. Other signals or
attributes believed to coexist with good or bad products include well-known brand names, country of
origin, price, and retail outlets that carry the product. Consumers also often form assumptions about
companies, products and shops. These market beliefs then become the shortcuts that guide their decisions
– whether or not they are accurate (Solomon et al., 1999). The same restriction on search that increases
efficiency may, at times, result in individuals ignoring or misusing information in reaching a judgment or
achieving a solution to a problem. A brand is the combination of name, words, symbols, design, or any
other features that are characteristic to the product and distinguishes it from competing products (Arens,
1996). A good brand can create feelings of trust, confidence, security, strength, and many other desirable
characteristics (Peter & Donnelly Jr., 2000). According to Doh (2001), brands are a source of information
that lowers the search cost for a consumer. Consequently, consumers can rely on well-known brands as
shortcuts in evaluating information online (Ward & Lee, 2000).

2.5 Frame of Reference
From the literature reviewed, a frame of reference for data collection emerges. A frame of reference can
be explained as the main dimensions to be studied, the factors or variables, and the presumed relationship
between them or, in other words, something that explains, either graphically or in narrative form, the
main things to be studied (Miles & Huberman, 1994). Among the theories presented in the literature
review, the concepts that are perceived most relevant for this research will be chosen, in order to turn the
research questions posed into something that data can be collected on. All concepts selected are chosen on
the basis of their potential strength as topics for data collection. This section will be presented in order of
the previously stated research questions.

2.5.1 How Can the Factors Influencing Search Activity Online Be Described?
The first research question aims at investigating factors that can influence the search activity, or the
amount of search, consumers undertake online. As in the literature review, each of the main variables
brought up by Beatty and Smith (1987) will serve as topics here when conceptualising the literature.
When collecting data, the attempt will be to see to what extent, if at all, the literature is applicable for the respondents.

**Market Environment**

According to Jarvis (1998) the market environment include the following aspects:

*The difficulty of the choice task.* Previous research have indicated that the difficulty of choice task affects the search activity, which varies with type of decision to be made, as well as the type of product (Solomon et al., 1999, Arens, 1996, and Peter & Donnelly Jr., 2000).

The *type of decision-making* and hence, the search activity varies depending on how complex and expensive a product is (Solomon et al., 1999 and Peter & Donnelly Jr., 2000). As these are traditional theories, the aim is to see if the behaviour is the same online.

*Number of Alternatives.* As the Internet today provides a myriad of numbers of alternatives in terms of providing information, consumers are likely to only research a smaller amount of sources (Pereria, 1999). Therefore, the aim is to investigate if the number of alternatives available affect consumers’ search activity online.

*Complexity of the Alternatives.* Accuracy of information has been mentioned in the literature as a factor, which influences search activity online (Ward & Lee, 2000 and Vaughan, 1999). Thus, it will be investigated to see if this proves to be true in this study.

**Individual Differences**

*Motivational factors* and *demographics* are two types of individual differences, which can affect information search. First, as involvement has been brought up in literature as an especially vital *motivational factor* that has not been empirically connected to external information search (Beatty & Smith, 1987 and Solomon et al., 1999), the aim is to see if it is applicable to the search activity online. Second, the *demographics* (Solomon et al., 1999 and Taylor, 1998) will only be considered to a limited extent. More specifically, demographics will be considered in the sampling selection and the cross-case analyses.

**Situational Variables**

It has been suggested in the literature that perceived risk and information search are positively correlated (Mitra et al., 1999 and Taylor, 1998). Hence, it is the aim to investigate if this is applicable when searching for information online.


**Knowledge and Experience**

Regarding *knowledge* and *experience* in traditional theories, many researchers have found positive effect of knowledge on search, while several others have found negative effects, and still others an inverted-U relationship (Solomon et al., 1999 & Fiske et al., 1994). In addition, Ward and Lee (2000), Hoffman and Novak (1996), and Debowski (2001) have found a positive relationship in online environments between the individuals’ Internet experience and search activity. Therefore, it is relevant to test the traditional theories in regards to the Internet and how well they stand in this new environment.

**Cost of Search**

According to Smith (2000) and Jiang (2002), cost of search has a negative influence on search activity on the Internet. More specifically, the two costs mentioned are financial and time costs. Both variables will be investigated in order to determine their influence on search activities online and thereby, either falsifying or confirming what has been stated in the literature.

2.5.2 How Can the Preferred Search Tools for Product Information Search Online Be Described?

Research question two is aimed to investigate what search tools consumers prefer to utilize when searching for product information online.

**Most Preferred Search Tools**

Jupiter Media Metrix (2001) and Thelwall (2001) have suggested that search engines and Web directories are the most preferred search tools online. Hence, the participants will be asked to rank their preferred search tools, in order to see if what the authors have suggested, is applicable.

**Tools Available For Retrieving Information Online**

There are several different search tools available online, which have been mentioned by different authors (Rowley, 2000a, Rowley, 2000b, Lindström & Andersen, 2000, Gordon & Pathak, 1999, Green, 2000, and Thelwall et al., 2001). All these search tools can be divided into two groups: general search tools and specially designed tools, as discussed by Rowley (2000a). The aim is to investigate if, how, and why the search tools are utilized when searching for product information online. More specifically, the search tools that will be investigated are:

**General Search Tools**

- *Browsers* are a form of search tools that can help the consumer in their information seeking (Rowley, 2000a and Rowley, 2000b).
Search engines today are used by many consumers in their information search as it brings results from the entire Web (Lindström & Andersen, 2000, France et al., 2002).

Web directories are another form of search tool that assist consumers in their information seeking online, by providing humanly edited categories according to subject (Green, 2000, Rowley, 2000a and Thelwall et al, 2001).

Newsgroup searching as a form of implicit knowledge and information source (Green, 2000).

**Specially Designed Tools**

Shopping bots are one-stop information providers, where consumers can locate and compare products and information from many different merchants (Rowley, 2000a).

**How Consumers Utilize Search Tools**

In order to gain a better understanding of how consumers utilize search tools, the findings from Jupiter Media Matrix (July, 2001) will be compared to the participants’ search habits, in order to gain an understanding of how the respondents search online and with what tools.

**2.5.3 How Can the Problems Associated with Product Information Search Online Be Described?**

The aim with the third research question is to gain insight into what problems consumers are facing when searching for product information online. A few different authors have discussed some general problems connected with information search (Vaughan, 1999, Kline, 2002, Thelwall et al., 2001, Payne, 1976, Maity et al., 2002, and Solomon et al., 1999). These problems have been grouped into four categories as stated by Kline (2002), which will all be investigated in order to determine their relevancy for the three cases. The four categories are:

**Searching Difficulties**

According to Kline (2002) and Thelwall et al. (2001), a first potential problem that users often have is how to specify their search query in a way that is understood by the search tool. Another issue discussed in their literature is that of disambiguating words.

**Retrieval issues**

According to Kline (2002) and Thelwall et al. (2001), there are also problems in dealing with the documents retrieved. Many of the results are not relevant to the search query and consumers perceive this as a problem.
**Document Discrimination Problems**

Due to the amount of information on the Web today, managing the results of information retrieval is becoming an increasingly important problem (Kline, 2002). According to Vaughan (1999) and Poulter (1997), the problem is in the quantity of the results that is received through search tools.

2.5.4 How Can the Shortcuts Utilized for Product Information Search Online Be Described?

The aim with research question four is to develop an understanding of the shortcuts or heuristics that are used when searching for product information online. As stated by Maity et al. (2002) consumers utilize shortcuts or heuristics in order to reduce the information they have to search for. In order to find the shortcuts/heuristics utilized online, a few different theories, both traditional and Internet related, will be investigated.
3. Methodology
The previous chapter brought up an overview of literature and theories of relevance to the purpose and research questions of this dissertation. In this chapter, the research process will be described. The methodology used in the dissertation and the considerations that have influenced the choices of methods and approaches will be presented. A discussion of the purpose, research method, research strategy, data collection method, sample selection, data analysis, and quality standards will follow.

3.1 Research Purpose
According to Eriksson and Wiedersheim-Paul (1997), the purpose of research is to state what is to be accomplished by conducting research and how the results of the research can be used. The research purpose can be divided into different groups. According to Yin (1989), research can be classified as being an exploratory, descriptive or explanatory study. Exploratory research is appropriate when a problem is difficult to structure and when there is uncertainty regarding what models to use and what characteristics and relations that is important. The research is designed to allow an investigator to just “look around” with the respect to some phenomenon, with the aim being to develop suggestive ideas (Reynolds, 1971). The purpose is to gather as much information as possible concerning a specific problem. Exploratory research is often used when a problem is not well known, or the available knowledge is not absolute (Patel & Tebelius, 1987). According to Yin (1989), the research should be as flexible as possible and conducted in a way that provides guidance for procedures to be engaged during the next stage.

The objective of descriptive research is to provide a description of various phenomenon connected to individuals, situations or events that occur (Patel & Tebelius, 1987). Describing also involves a choice of perspective, aspects, level, terms, and concepts, as well as to observe, register, systematize, classify, and interpret (Eriksson & Wiedersheim-Paul, 1997). The purpose might be to develop empirical generalizations. Once such generalizations begin to appear, they are worth explaining, which leads to theory development (Reynolds, 1971). Moreover, descriptive research is often used when a problem is well structured and there is no intention to investigate cause/effect relations (Eriksson & Wiedersheim-Paul, 1999).
The objective with an *explanatory research* is to analyse cause-effect relationships, explaining what causes produce what effects (Eriksson & Wiedersheim-Paul, 1997 and Yin, 1989). The researcher also tries to identify factors that together cause a certain phenomenon (Lundahl & Skärvad, 1992). In addition, the goal is to develop a precise theory that can be used to explain the empirical generalizations that evolved from the second stage (Reynolds, 1971). Based on this, the researcher formulates hypotheses that are tested empirically (Patel & Tebelius, 1987).

According to Reynolds (1971), it is not necessary to choose one of these purposes over the others. Instead, he suggests a compound procedure, which divides the research into three different stages. The aim is to provide the researcher with a cycle of theory construction, theory testing, and finally a theory reformulation (ibid). The research purpose and research questions of this dissertation indicate that this study is initially exploratory, when aiming to formulate and specify problems, which provides the researcher, with both a course for the task at hand as well as an insight into existing theories within the subject. The study then becomes somewhat descriptive as data is collected and analysed. Finally, the study becomes somehow explanatory, as the research questions of this study will be answered in the final chapter.

### 3.2 Research Approach

Holme and Solvang (1995) discuss two different methodological approaches within social science: qualitative and quantitative. Which approach to use, is determined by the characteristics of the gathered information. The most important difference between the two approaches is how numbers and statistics are used (ibid).

*Qualitative* methods focus on acquiring a profound knowledge and understanding of the studied object(s). The possibility of making generalizations in a qualitative study is limited, since the number of objects are limited and studied more in depth (Holme & Solvang, 1995). In addition, qualitative research is the search for knowledge that is supposed to investigate, interpret, and understand a phenomena by means of an inside perspective (Patel & Tebelius, 1987). Subjectivity by the researcher(s) is usually an issue when conducting qualitative research (Holme & Solvang, 1995). It is therefore important for the researcher to reduce his or her subjectivity.

*Quantitative* research is characterized by a formalized and structured method (ibid). The researcher tries to explain phenomena with numbers to obtain results, thereby basing the conclusions on data that can be
quantified (Lundahl & Skärvad, 1992). There is a relatively high degree of control from the researcher, who in turn is objective in the study. The researcher defines what conditions are of interest to the study based on the research questions. Objectivity is necessary in order to conduct formalized analyses and make comparisons and generalizations. Finally, generalizations can be made since many objects are studied, although relatively little information is collected from each object. (Holme & Solvang, 1995) The qualitative approach was found to be most suitable for this dissertation, as the purpose is to gain a better understanding of consumer information search behaviour in electronic environments. Moreover, as the intention with this dissertation is to explore and describe, and find as complete and detailed information as possible, the qualitative approach is the most suitable method.

3.3 Research Strategy
The selection of research strategy depends upon three distinct conditions. These conditions include the type of research questions asked, the extent of control an investigator has over actual behavioural events, and the degree of focus on contemporary events compared to behavioural events. Furthermore, there are five primary strategies in the field of social sciences: experiment, survey, archival analysis, history, and case study (Yin, 1989).

The relation of each condition to the five different research strategies can be found in Table 3.1 below:

<table>
<thead>
<tr>
<th>Research Strategy</th>
<th>Form of Research Question</th>
<th>Requires Control Over Behavioral Systems</th>
<th>Focus on Contemporary Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>How, why</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Survey</td>
<td>Who, what where, how many, how much</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Archival Analysis</td>
<td>Who, what where, how many, how much</td>
<td>No</td>
<td>Yes/No</td>
</tr>
<tr>
<td>History</td>
<td>How, why</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Case Study</td>
<td>How, why</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Table 3.1 Relevant Situations for Different Research Strategies
Source: Adapted from Yin, 1989, p. 17.
Which strategy to choose, can be determined based on the formulation of the research questions. The most common types of research questions are formulated as who, what, where, how, and why questions. When how- or why- questions are used, the researcher can benefit by using case studies, experiments, or historical studies. (Yin, 1994)

As the research questions in this study are based on how questions, the researcher have no control over the actual behavioural events, and the focus of the study is on the “how” of a contemporary event, the choice stands between conducting a survey or a case study.

3.4 Data Collection Method

Yin (1994) states that, “a major strength of case study data collection is the opportunity to use many different sources of evidence” (p. 91). This use of multiple sources of evidence is called triangulation, which means that the researcher has the opportunity to obtain multiple measures of the same phenomenon. By using multiple measures of the same phenomenon, the validity of any scientific study increases. Findings or conclusions resulting from a case study is likely to be more convincing and accurate if based on several different sources of information. No one of the different sources has a complete advantage over the others. The different sources are highly complementary; hence, as many sources as possible should be used (ibid). According to Yin (1994), data for case studies can be collected via six different sources. Thus, documentation, archival records, interviews, direct observations, participant observations, and physical artefacts.

See Table 3.2 below.

<table>
<thead>
<tr>
<th>Source of Evidence</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
</table>
| Documentation      | - Stable: can be reviewed repeatedly  
|                    | - Unobtrusive: not created as a result of the case  
|                    | - Exact: contains exact names, references, and details of an event  
|                    | - Broad coverage: long span of time, many events, and many settings | - Retrievability: can be low  
|                    | | - Biased selectivity: if collection is incomplete.  
|                    | | - Reporting bias: reflects bias of author (unknown).  
<p>|                    | | - Access: may be deliberately blocked. |</p>
<table>
<thead>
<tr>
<th>Source</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Archival Records</td>
<td>- (same as the above for documentation).</td>
<td>- (same as the above for documentation)</td>
</tr>
<tr>
<td></td>
<td>- Precise and quantitative</td>
<td>- Accessibility due to private reasons.</td>
</tr>
<tr>
<td>Interviews</td>
<td>- Targeted: focuses directly on case study topic.</td>
<td>- Bias due to poorly constructed questionnaires.</td>
</tr>
<tr>
<td></td>
<td>- Insightful: provides perceived causal inferences.</td>
<td>- Response bias.</td>
</tr>
<tr>
<td>Direct Observation</td>
<td>- Reality: covers events in real time.</td>
<td>- Time consuming.</td>
</tr>
<tr>
<td></td>
<td>- Contextual: covers context of event.</td>
<td>- Selectivity: unless broad coverage.</td>
</tr>
<tr>
<td>Participant Observation</td>
<td>- (same as for direct observation).</td>
<td>- Reflexivity: event may proceed differently because it is being observed.</td>
</tr>
<tr>
<td></td>
<td>- Insightful into interpersonal behaviour and motives.</td>
<td>- Cost: hours needed by human observers.</td>
</tr>
<tr>
<td>Physical Artefacts</td>
<td>- Insightful into cultural features.</td>
<td>- Selectivity.</td>
</tr>
<tr>
<td></td>
<td>- Insightful into technical operations.</td>
<td>- Availability.</td>
</tr>
</tbody>
</table>

**Table 3.2: Six Sources of Evidence: Strengths and Weaknesses**

*Source:* Adapted from Yin, 1994, p. 80.

As *archival records* are characterized as precise and quantitative, they are not suitable for the qualitative approach of this study. Moreover, *physical artefacts* are described as insightful when it comes to cultural features and technical operations, but since this study is concerned with attitudinal questions, this type of evidence is not appropriate. The data collection methods that will be used for this study is, *structured questionnaires, which is part of documentation*, in order to reduce cost. The researcher is currently an
online marketer, using his own website to sell various items. The questionnaires would therefore be sent to various customers and other internet marketers on the mailing list.

According to Patel & Davidson (1994), two types of data can be collected, primary and secondary data. Primary data is recognized as data that is gathered for a specific research in response to a particular problem, for example, interviews, questionnaires, or observations. Secondary data, however, may already have been collected for another purpose. More specifically, secondary data information can be obtained through various kinds of documents; for example, research reports, annual reports, books, and articles (Eriksson & Wiedersheim-Paul, 1999).

The most commonly used questionnaire method is the open-ended questions, where the researcher asks the respondent unstructured questions, thus allowing the respondents to express more of their views. The respondents can be asked for facts as well as their own personal opinion. When a close-ended questionnaires are used, the respondent is asked to chose among alternative answers. The questionnaire is structured and based on predetermined questions (Eriksson & Wiedersheim-Paul, 1999). The type of questionnaires that will be used for this study is the open-ended. The survey will be sent to a group of customers and internet marketers available to the researcher’s website, www.geemarketing.com mailing list. Majority of the selected group are from Europe, especially the United Kingdom, USA and the other part of the world.

According to Morgan (1997), the mixture of strangers and acquaintances in a focus group is not negative, since the sampling decisions should rely on the basic criterion of whether a particular group can comfortably discuss the topic in ways that are useful to the researcher. For this study, the sampling decision will be based on the cultural background of the participants. By choosing participants from different cultures, this study will briefly touch upon what has been suggested by Iivonen and White (2001) about research on information search online. The number of respondents for this research will be based on the names available on the list as at the time of mailing the questionnaires. The aim is to try to be unbiased as possible.
3.6 Data Analysis
According to Yin (1989), every case study should begin with a general analytical strategy. These general analytical strategies, with regards to the cases studied, provide the researcher with a system by which priorities can be set for what needs to be analysed and why (ibid). In qualitative data analysis, Miles and Huberman (1994) state that the focus is on data in the form of words; in this case, words that emanate from the respondents using the questionnaires. These words require processing, which is a form of analysis. The data analysis is consistent of three synchronized activity as flows:

Data reduction is made in order to make the data sharp, focused, sorted, discarded and organized so that the researcher can draw and verify conclusions. A case analysis is often used at this phase, which involves comparing the collected data with the theories used (ibid).

Data display is the second major activity, in which the researcher takes the reduced data and displays it in an organized and compressed way in order to make it easier to draw conclusions (Miles & Huberman, 1994). Yin (1994) states that this phase is useful when multiple cases are being studied. Multiple cases can be compared in a cross-case analysis, where data in one case is compared to data in another case (Miles & Huberman, 1994).

Conclusion drawing and verification is the final analytical activity in qualitative research. Here, the researcher begins to decide what things mean by noting regularities, patterns, explanations, possible configurations, causal flows, and propositions. (Ibid.) The analysis of this dissertation will follow these two steps. First, in order to reduce the data, case analysis will be done by comparing the empirical findings with the conceptualised literature. Finally, based on the within-case and cross-case analysis, conclusions will be drawn.

3.7 Validity and Reliability
Regardless of data collection method, the information has to be critically examined in order to determine its validity and reliability. Validity and reliability are the most commonly used criteria for evaluating the quality or credibility of research. Validity refers to the ability of the chosen instrument to measure what it is intended. Reliability involves a measuring instrument’s ability to give reliable and stable results, if the same techniques were to be used repeatedly (Eriksson & Wiedersheim-Paul, 1999). The role of reliability
is to minimize the errors and biases of a study (Yin, 1994). He said, four specific tests can be conducted in order to judge the quality of empirical research:

Construct validity: Establishing correct operational measures for the concepts being studied.

Internal validity: Establishing causal relationships whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships.

External validity: Establishing the domain to which a study’s findings can be generalized.

Reliability: Demonstrating that the operations of a study can be repeated with the same results (ibid).

According to Yin (1994), these tests and thereby the quality of the study can be enhanced through the use of a number of tactics when doing case study research. The tactics are presented in table 3.3 below.

<table>
<thead>
<tr>
<th>Test</th>
<th>Case Study Tactics</th>
<th>Phase of Research in Which Tactics Occurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct Validity</td>
<td>- Use of multiple sources of evidence.</td>
<td>- Data collection.</td>
</tr>
<tr>
<td></td>
<td>- Establish chain of evidence.</td>
<td>- Data collection.</td>
</tr>
<tr>
<td></td>
<td>- Have key informants review draft case study report.</td>
<td>- Composition.</td>
</tr>
<tr>
<td>Internal Validity</td>
<td>- Do pattern matching.</td>
<td>- Data analysis.</td>
</tr>
<tr>
<td></td>
<td>- Do explanation building.</td>
<td>- Data analysis.</td>
</tr>
<tr>
<td></td>
<td>- Do time-series analysis.</td>
<td>- Data analysis.</td>
</tr>
<tr>
<td>External Validity</td>
<td>- Use replication logic in multiple-case studies.</td>
<td>- Research design.</td>
</tr>
<tr>
<td>Reliability</td>
<td>- Use case study protocol.</td>
<td>- Data collection.</td>
</tr>
<tr>
<td></td>
<td>- Develop case study database.</td>
<td>- Data collection.</td>
</tr>
</tbody>
</table>

Table 3.3 Case Study Tactics for Four Design Tests
Source: Adapted from Yin, 1994, p. 33.
*Construct validity* means to establish operational measures that are correct for the concepts being studied. As shown in table 3.3, there are three different tactics for increasing construct validity: using multiple sources of evidence, establishing a chain of evidence, and having key informants review a draft of the case study report (ibid). Due to some constrains, this study will only use documentation through questionnaires.

*Internal validity* only concerns causal or explanatory studies, in which an investigator is trying to determine whether one event lead to another. Using pattern matching during the analysis strengthened the internal validity of this dissertation. More specifically, the empirically based pattern for the case was compared with the pattern predicted in the conceptualised literature (Yin, 1994). As the internal validity is mostly of concern for causal and explanatory studies, it is mostly applicable at the end of the study where conclusions are drawn.

The *external validity* deals with the issue of knowing whether the findings from a case study can be generalized outside the immediate case study. This type of validity has often been a problem when conducting case studies. Therefore, Yin (1994) has suggested a tactic for increasing the external validity of a case study, namely by testing theory through replications of the findings in other, but similar, surroundings. If this kind of replication has been made, it might be possible to make generalizations on the findings to a larger number of similar cases (ibid). In order to increase the external validity of this study, the tactic suggested by Yin (1994) will be followed. For this study, the case studies will test the relevant theories. However, it might still be difficult to draw any generalizations based on the findings of this study.

According to Yin (1994), *reliability* demonstrates that the operations of a study, such as the data collection procedures, can be repeated with the same results. The objective is to make sure that if another investigator followed the same procedures as the first investigator and used the same case study objects, the same conclusions would be made. The aim with reliability is to minimize errors in a study as well as the biases. Two things can increase reliability: the use of a case study protocol and the development of a case study database (ibid). To increase the reliability of this dissertation, the researcher will attempt to avoid leading and subjective questions, by the using open-ended structured questionnaires.
4. Empirical Data
In the previous chapter the methodology for this dissertation was presented. In this chapter the collected empirical data will be presented. The data collection was conducted by questionnaires sent to over 250 customer and marketers on the mailing list. The case will follow the order presented in the Conceptual Frame of Reference. Furthermore, the empirical data will be presented using what Krueger (1994) refers to as “descriptive summary.” That is, each topic for discussion begins with a summary, followed by few descriptive quotes. The quotes are intended to help the reader understand the way in which respondents brought up issues when answering the questionnaires (ibid).

4.1 General Consumer Perspective
The case study was conducted through a questionnaires received from ten European marketers and twenty consumers; fifteen marketers and thirty consumers from the USA and ten respondents were from other countries. The questionnaires were sent out by email to about two hundred and fifty people on the mailing list in the second week of June. The last respondent’s returned questionnaire was received in the last week of July.

The gender distribution of the participants was twelve women and sixty-three men and with ages varying between 25 and 65, 60 percent of which, were under 45 years of age.

All of the respondents, except five, used the Internet frequently everyday. The five others used it only once a day or a couple of times per week spending some few hours. The Internet experience varied slightly within the group. About 65% of the respondents had begun to use the Internet for three years or less ago, 24% had begun to use it three to five years ago, and the rest 11% have been using the internet for more than five years now. In addition, most of the respondents were habitual browsers. They were curious and wanted to stay updated and continuously searched for different product information even though they were not actually ready to make a purchase. However, six of the respondents (all women) said that they would only search for product information when they were in the process of buying something.

4.2 Factors Influencing Product Search Activity Online
Regarding the issue of what factors influence the search activity conducted online, the respondents began by mentioning that the first factor that had an influence was if they knew what brand they were buying or not. The general idea of the respondents was that they conducted more search if they
only knew the product and not the brand name they were searching for. This is due to the fact that they had to find out all the possible brands available before starting to compare them. Majority of the respondents also agreed that when they knew the brand, their search activity was lower. Some of the thoughts regarding this issue are quoted below. “If you know the brand of the product you are about to purchase, you do not search as much, but instead go directly to the producer’s Web site by typing the address in the browser.” “If you want a DVD-player you go directly to Sony or Panasonic or whatever. But if you do not know the brand name, you search more and you go to a search engine to find out more about the product and the brands available.”

Another factor brought up by the respondents was that the type of product and the money involved had an influence on their search activity. All the respondents agreed, with a straight forward answer to this issue. That is, high-value, more complex and less frequently purchased products required extensive information search online. On the other hand, low-value and somewhat frequently purchased products required a fairly low search effort. A personal example that one of the respondents shared was that he spent 6 months searching for information on the Internet about free-diving gear before he bought it. “It was a big investment for me and a purchase of high importance. It was something that I did not have much information on before.” The respondents also added that some types of products were hardly ever searched for online. These were, for example, food, clothes, toothpaste and more. According to them the information they wanted for these types of products were easier to find in the physical store and therefore, they did not want to waste time by searching for it online.

On the question whether the number of alternative information sources found online had any influence on the respondents search activity, they stated that it did not. However, they would not search the entire Web to find what they were searching for, but instead stop when they felt fairly satisfied. In addition, they could regularly find what they were looking for because they felt that they had developed fairly good online searching skills and had found a few search tools that they stayed with and used frequently.

Majority of the respondents agreed with the fact that there was inaccurate information posed here and there on the Web. This in turn influenced them to search more. More specifically, they added that in order to reduce the possibility of being exposed to inaccurate information they had to search for more information sources and compare the information found. If all the sources presented the same
information, the respondents felt like they could trust the information. Some of the respondents also felt like they could trust Web sites that they recognized from the real world. For example, a physical store with an online version. In addition, most of the respondents said that they would trust the information from a shopping channel or shopping bot. However, if they were to find out that the information had been wrong they would not use that search tool again.

Most of the respondents reiterated that accuracy online was perceived to be of greater importance than in the real world and they would only tolerate inaccurate information to a limited degree. However, some felt that the issue was more of a problem when searching for information and buying a product in the real world than online. This is because they felt that sales personnel in the physical stores always try to influence them, and also because it was harder to compare the information with other sources in the physical stores. Some other respondents added that when online, they could search in their own time and decide for themselves what they believed was right and wrong, without any influence from a salesperson.

The respondents agreed that perceived product importance influenced their search activity. They added that the more important they perceived the product to be, the more they searched. This is because, since they wanted to be able to have a lot of information before they decided to purchase the product, otherwise the judgment might be risky and did not want to be disappointed afterwards.

Regarding the topic of “risk” online, the participants had strong opinions. They felt that the most significant risk online was the risk of receiving inaccurate information. This risk, in turn, influenced their search behaviour by making them search more in order to verify the information found, as mentioned before. This risk was also more apparent when they were searching for more expensive products and when the possible threat of a large financial loss was involved. Furthermore, the respondents felt that the risk was higher when it came to new products because there was less information available than with products that had existed for years. One said, “The risk online is something that you always have in the back of your mind when you search the Internet.”

All of the respondents agreed that their search behaviour on the Internet had changed over time as they have gained more experience using the Internet. They felt that they searched more now than when they first started using the Internet. One of their reasons for this increase in search was that they felt like it was
easier to find information today, because they knew how to use the search tools. Most of the respondents felt that the reasons why they did not search as much in the beginning was that they found it frustrating not to be able to find what they wanted and, therefore, they gave up.

A few of the respondents also felt like they had been more likely to rely on brand names, when searching for product information, in the beginning of their Internet experience, since they did not know how to search. However, this had become less as they became more efficient at searching. Despite the fact that the respondents felt like they search more today, they added that their Internet experience has made it easier for them to narrow down their search. Regarding the issue of search cost, none of the participants felt that cost, in terms of paying for the Internet, influenced their search activities online. They all felt the cost was fairly low, and they could even use it for free in some places like the Universities and libraries. In addition, they stated that the Internet was used for other purposes than just searching which decreased the cost associated with searching.

With regards to time cost, all of the respondents agreed that they searched more on the Internet than in the real world. The reason for this was that it was easier and less time consuming to search online when compared to the real world, since they could conduct the search at home and on their own time. The respondents added that in the real world they would physically have to walk between stores to receive the information, and this could take days. One person said, “I can search more on the Internet than in the real world, since it takes less time to find the information.”

4.3 Preferred Search Tools for Retrieving Product Information Online

Regarding the respondents’ search tool preferences, the search tools mostly used, varied between the respondents. The most preferred search tool for finding product information online for the respondents was the browser, since they perceived it to be an easy and efficient way of getting what they wanted. More specifically, the browser was mostly used when they knew where to find the information they were looking for, for example, the brand or company name were typed in followed by “.com” “.co.uk”, “.se” or the URL address of an already know site. One said, “It depends on what you are looking for. If you know the company you are looking for, you just use the browser”.
Regarding the mostly used search engines online, Google was frequently used by most of the respondents. Other than that, some used Yahoo and other similar search sites. On the issue of advanced search functions, provided by search engines, most of the respondents said that they hardly ever use them. They felt that they were too difficult to use and especially when searching for product information, because some felt that these functions were more for academic searches. In addition, the respondents said that the regular functions in the search tools worked well enough. “Advanced search sounds too complicated for me to understand and I would not even try and use it”, one said.

The third most used search tool in the group was Web directories. Web directories were considered a good way of finding product information online since they were sorted into categories. More specifically, the respondents felt that the relevancy of the information posed here was higher since it had been divided into categories by humans and not computers. In addition, the respondents felt that Web directories sometimes gave them a head start on their search since unnecessary information had already been sorted out.

The fourth most used search tool by the respondents was shopping bots. These were only used by few and mostly experienced respondents. They perceived it to be a good tool for finding and comparing product information from several different manufacturers in one spot. They were also considered more reliable as they were independent Web sites and not owned by one specific brand. Moreover, the fifth tool, review forums, were mostly used when the product searched for was more complex and/or more expensive. One said, “I can get information about the products’ positive and negative sides from other consumers, which can be very valuable.” Hardly any of the respondents used newsgroups for obtaining information. This is because they felt it was too time consuming and old fashioned. In addition, they explained that they were unsure of the validity of the information received because they could not know if the person responding really knew what he/she was talking about.

### 4.4 Problems Associated with Product Information Search Online

Most of the respondents felt that it sometimes was hard for them to specify their initial search query, and especially when they had little knowledge about the product they were searching for. In addition, the respondents had problems specifying their query in a way that the search tool understood. One of the respondents, who was not very experienced with using the Internet, had several problems when searching.
Another problem in the search process, mentioned by the respondents, had to do with the issue of words with double meaning. That is, a word that has more than one meaning and when searched for in a search tool, receives results for each of these meanings. The respondents felt that this made it difficult to receive information that matched what they were actually searching for. “For example, when I type in a search query in Spanish, and that word also has a meaning in another language for example, French, I receive many results that are irrelevant to my search”, one Spanish lady respondent said.

Other problems mentioned by the respondents was the result list brought back from the search tool and the relevancy of the search results. All of the respondents felt that search tools somewhat frequently brought back unrelated results, and that this made their search more time consuming since they had to scan all the results in order to find the relevant ones.

Finally, searching on company Web sites that had their own search engines was perceived by some of the respondents to be problematic. They though that it was frustrating to use these tools because they hardly ever worked, and the information brought back, was for the most part, not what they were looking for.

4.5 Shortcuts Utilized when Searching for Product Information Online
Regarding shortcuts online, all of the respondents said that they mostly adopted measures in order to reduce the amount of information online. There was simply too much out there for them to investigate. Many of the respondents used shortcuts when the product was not of high-value to them. One of the tools used as a shortcut was one-stop information providers like, Uswitch.com and Moneysupermarket.co.uk, since they could get product information and price in one place with very limited search effort. These Web sites were usually never searched for as they were already in the minds of the respondents. In addition, they had used them before and knew that they worked well. When searching for low-value products the criteria most respondents used was price. However, these kinds of shortcuts were not used that much when the product was of higher value to them. In those cases the respondents searched more on their own among different types of Web sites, for example, review forums. “A ‘real’ shortcut for me is when I can go to one place and find all the products there ready to be compared, without me having to search the entire Web”, one said
Brands were also obvious shortcuts that the respondents used. More specifically when they had a brand preference, they went directly to that brand’s Web site instead of searching for alternatives. In addition, they searched less when well-known brands were involved because they felt that the risk was lower. This is because the brand name withheld a certain degree of security for the respondents. Heavily promoted Web sites also influenced the respondents, who took a shortcut directly to that Web site instead of searching for alternatives.
5. Analysis
In the previous chapter, the empirical data collected for this study was presented. In this chapter the empirical data will be analysed in the order of the research questions. To begin with, analysis will be conducted for the case studies, by comparing the empirical data in chapter four with the conceptual framework presented in chapter two. This is done in order to reduce the data.

5.1 Factors Influencing Product Search Activity Online
The first research question aims to describe the factors that might influence consumers while searching online. The first influencing factor brought up by the respondents was whether or not they knew the brand name or not, for the product, when looking for information online. More specifically, they searched more when they did not have any brand preferences. This factor was not brought up in any of the literature reviewed for this research question. Regarding research question one, the first theory reviewed under the title *market environment*, had to do with *difficulty of the choice task*. According to Peter and Donnelly Jr. (2000) and Solomon et al. (1999), consumers traditionally utilize three types of decision-making depending on how complex or expensive the product is; routine-, limited-, and extensive decision-making. In the gathered empirical data, products requiring a more routine decision-making were not searched for online by the respondents. Therefore, the traditional theory is not in accordance with the empirical data. However, when the products were of low-value and/or relatively uncomplicated, the respondents searched for them to a limited extent online. This is in accordance with the limited decision-making as stated by the authors. Finally, when the products were of higher value and/or were more complex, the respondents conducted extensive search online. This is also in accordance with what the authors had stated regarding extensive decision-making. On the other hand, specialty goods were searched for to a great extent, while convenience goods were not searched for at all online.

The second theory reviewed dealt with *number of alternatives*. According to Jarvis (1998) and Pereria (1999), consumers do not consider all alternative information sources online due to the amount of information available. This can be somewhat correlated to what was found in the empirical data. That is, even though the respondents claimed that the amount of information available online did not influence them they still did not search the entire Web. Instead they relied on a few different search tools with which they were comfortable with and only searched until they felt “fairly” satisfied.
The third theory that was reviewed dealt with *complexity of the alternatives*. According to Ward and Lee (2000), consumers require more information online from different sources, since there is inaccurate information to be found on the Internet today. This is in accordance with what was stated by the respondents. Moreover, when comparing the empirical data with Jarvis’ (1998) study it can be seen that the two correlate. More specifically, the respondents did feel that the information available on the Web sometimes could be inaccurate, but that sales people in the physical stores were even more inaccurate.

Under *individual differences* the theory reviewed was *motivational factors* in consumer behaviour by Beatty and Smith (1987) and Solomon et al. (1999), who said that consumers engaged in extensive search, during high involvement conditions and vice versa. This correlates with what the respondents expressed in their responses. When searching for product information that was perceived to be more important they search more.

For *situational variables* the main theory reviewed was that of risk perception. According to Mitra et al. (1999) and Taylor (1998), risk and search effort is positively related, which is in accordance with what the respondents felt. They searched more for different sources on the Internet, since they felt there was a risk involved when searching online. The respondents perceived the most influential risk associated with the Internet to be that of information accuracy.

Furthermore, the respondents felt that their search had become more efficient as their Internet experience increased, which can be correlated to Solomon et al. (1999). The respondents also stated that they had a tendency of relying on brands in their initial information seeking. As they became more experienced they relied less on brands as they were more efficient at searching and knew how to use the search tools. This is in accordance with what Solomon et al. (1999) stated about selective search for the more knowledgeable.

The last theories reviewed for research question one dealt with *cost of search*. All of the respondents stated that *financial cost* associated with searching on the Internet had no influence on their search activities. The Internet did not require any significant investments from their part. Hence, the theory on financial cost by Antonides and Van Raaij (1998) and Smith (2000) is not relevant in this. *Time cost*, on
the other hand, was something that influenced the respondents positively in their information search online. This is in accordance with Jiang (2002) and Beatty and Smith (1987), who stated that reduction in time cost increase search activity. Moreover, Jiang (2002) state that time is the only cost factor that remains significant for search in electronic marketplaces, which is also what the empirical data indicates.

5.2 Preferred Search Tools for Retrieving Product Information Online
The second research question aims to describe the most preferred search tools utilized for product information search online. Most respondents said that the most preferred search tool when searching for product information was the browser. This is something that has not been mentioned in the reviewed literature. Instead, Jupiter Media Merix (2001) and Thelwall (2001) have other findings regarding the most preferred search tools. Jupiter Media Metrix (2001) found search engines to be the most preferred search tool, while Thelwall (2001) found Web directories and search engines to be the most popular. Search engines were considered the second choice by my respondents. In addition, Web directories were fairly popular in the group and were rated third. Hence, Thelwall’s (2001) study is somewhat in accordance with the empirical data. Furthermore, shopping bots were rated as number four and review forums as number five out of the most used search tool by the respondents. Shopping bots and review forums were not rated in any of the literature. The least used search tool in the group was newsgroups since it was only used by few respondents to a very limited extent. Newsgroups were not rated in any of the theory studied.

Regarding how consumers utilize search tools online all of the respondents preferred to use the search tools that were familiar to them and would only try a new one if they heard about it through word-of-mouth. This is in accordance with Ivonen and White (2001) who said that Web surfers prefer to use known sites when searching. However, the influence of word-of-mouth is not mentioned in any of the literature reviewed. In addition, Ivonen and White (2001) have found that when conducting search online consumers tend to use rather simple searches when using search tools, and especially search engines. This can be directly compared to what was stated by the respondents. They said that they hardly ever used the more advanced search tool functions, but that they rather stayed with the regular search functions where they only needed to type in a search query.
Regarding the second category, *type of product*, the respondents said that when they were searching for low-value and/or fairly uncomplicated products they would go straight to some kind of shopping bot or shopping channel that they had previous knowledge of. This is somewhat in accordance with the second method since they would use the browser to do this. For more expensive and complex products, the respondents usually first went to a search engine to find general product information. Later some of them would go to review forums to find more unbiased opinions on the products whereas the others would stay with the search engine. This correlates with method number one in the theory “type product name in search engine” to some extent.

5.3 Problems Associated with Product Information Search Online

With the third research question the aim is to describe possible problems associated with product information search online. The respondents had all experienced problems when searching for product information online. More specifically, they brought up the difficulty of specifying their search query in a way that was understood by the search tool. They found it even more challenging to specify their query when they were not certain what they were looking for and therefore, they did not always find the information they sought. This is something both Kline (2002) and Thelwall et al. (2001), in the reviewed literature, had described to be perhaps one of the greatest challenges a searcher could have.

Regarding retrieval issues the respondents felt that a frequent problem was the relevancy of the search results brought back from the search tool. It was perceived a problem since it took a long time to find the desired information among all the unrelated results. This correlates with what the authors in the reviewed literature (Kline, 2002, Gordon & Pathak, 1999, Thelwall et al., 2001, Vaughan, 1999) have stated about search tools that bring back results, which are only slightly related.

5.4 Shortcuts Utilized when Searching for Product Information Online

The last research question aims to describe what shortcuts consumers utilize when searching for product information online. The respondents all utilized shortcuts one way or the other, when searching online, because there was simply too much information available. This is in accordance with the theories presented by Maity et al. (2002) and Payne (1976), which state that humans utilize heuristics when they are not able to process all the information available. In addition, Pereria (1999), Jiang (2002), and Rowley (2000a) have stated that *online search tools*, like shopping bots, can be considered as shortcuts because they reduce the burden of product information search for the consumer. This is applicable in this case
because the reason why the respondents used shopping bots as shortcuts was that they could find much of the information needed in one place with very little effort. The respondents also mentioned *brands* as a possible shortcut when searching on the Web. This is in accordance with what has been stated by Arens (1996) and Peter and Donnelly, Jr. (2000), and also with Doh (2001) and Ward and Lee (2000), who say that brands functions as shortcuts because they lower the search cost for the consumers.
6. Findings and Conclusions
In the previous chapter the empirical data gathered from the three case studies were analysed. In this final chapter, the research questions posed in the first chapter will be answered by presenting the findings of this study. Thereafter, some general conclusions regarding each research question will be posed.

6.1 How Can the Factors Influencing Search Activity Online Be Described?
The findings of this study suggest that there are many different factors that influence consumers search activity online. To begin with, the different types of decision-making involved with a purchase have a significant influence on search activities. More specifically, it can be concluded that the most extensive information search is conducted for products requiring extensive decision-making, which are complex and more expensive products. On the other hand, products requiring more limited decision-making are searched for to a lesser extent since they are not perceived as important.

6.2 How Can the Preferred Search Tools for Product Information Search Online Be Described?
Consumers are aware of many different search tools and utilize almost all of them. The findings of this study indicate that the two most utilized search tools are browsers and search engines. This might be due to the fact that these tools are the ones that have been around the longest and, therefore, the searchers have greater knowledge of their functions and can effectively utilize them. More specifically, the browser was popular because of its ease of use and quickness of finding information the searcher already knew existed.

With the basis of the analysis and the findings for research question two, the following specific conclusions have been deduced.

- Search engines and browsers are among the most popular search tools on the Web.
- Many product information seekers are using a new type of search tool, namely the review forum.
- Newsgroups are not utilized much for product information search online.
- Word-of-mouth has an important influence on the search tools utilized.

6.3 How Can the Problems Associated With Product Information Search Online Be Described?
The problems consumers face when searching for product information online mainly have to do with search engines. This may be a result of the fact that search engines are among the most used search tool on the Web. More specifically, the problems associated with product information search can be divided into three categories; searching difficulties, retrieval issues and document discrimination problems.
With the basis of the analysis and the findings for research question three, the following specific conclusions have been identified.

- The most significant problem online has to do with the many irrelevant links brought back by search tools in the result lists.
- Many of the problems related to product information search online, are as a result of English being the main language used to provide information on most products.
- Language barriers increase the problem associated with product information search online.

6.4 How Can the Shortcuts Utilized for Product Information Search Online Be Described?
Information seekers online, utilize shortcuts in order to reduce the amount of information searched. These search heuristics are simple procedures or rules used by consumers when they are not able to process all the information available. These shortcuts can take a few different forms. More specifically, one type of shortcut used when searching online is the search tool, shopping bot. The reason for shopping bots being a shortcut is that they provide information and comparisons of many different products in one place. Brands are another search heuristic utilized online. Consumers tend to rely on brands because they withhold a certain degree of security, but also a promise of good quality.

With the basis of the analysis and findings for research question four, the following specific conclusions can be drawn.

- Shopping bots can be seen as a heuristic online.
- Brands are utilized as shortcuts online, because they withhold a certain degree of security.
List of References


Appendix 1: Open-ended Questionnaires

These questionnaires are meant for the purpose of academic dissertation for the attainment of MBA degree at University of Leicester in the United Kingdom. Any information you provided will be used only for such purposes. None of the information is intended for any commercial purposes. Thank you for participating in this research.

(1) What reasons might affect the search activity/amount of search that you conduct on the Internet?
- Does the type of product that you are going to purchase affect it? Why?
- (Number of alternatives) Does the amount of product information online affect your search activity? Why?
- Do you feel that there are risks involved with searching for product information online or about the accuracy of information found? Why?
- How has your search behaviour changed over times? Do you search more or less now compared when you just started using the Internet? Why?
- Do you feel that there is a high cost in terms of time and money involved in searching online? Does it affect the amount of search conducted? Explain?

Is there anything you would like to add on this topic?

(2) What search tools do you use online?
- Browsers, search engines, web directories, portals, newsgroups and shopping bots.
- Which kind of search tool do you use the most and why?
- When you are about to purchase a product, how do you search for product information online? Explain.

Is there anything you would like to add on this topic?

(3) What problems do you face when searching online?
- Do you see a problem in the way that search tools understand your query/question or what you are looking for?
- Do you see a problem in the amount of results that the search tools give you?
- Do you see a problem in the relevancy of the results?

Give any explanations, you think necessary, relating to any of the above problems.
(4)  Do you have any (mental) shortcuts that you use when searching online?

- Do you do something to simplify the search process online?
- Do you use any online search tools as shortcuts? Explain.
- Do you rely on brands as shortcuts? Explain.

Is there anything you would like to add on this topic?
Appendix 2: Close-ended Questionnaire

Tick as applicable.

1. Male  Female

2. Age:________

3. Country:_______________

4. How long ago did you start using the Internet on a regular basis?
   ( ) < 6 months ago
   ( ) 1-2 years ago
   ( ) 2-3 years ago
   ( ) 3-5 years ago
   ( ) < 5 years ago

5. How often do you use the Internet?
   ( ) several times per day
   ( ) once per day
   ( ) a couple of times per week
   ( ) a couple of times per month
   ( ) a few times per year
   ( ) other:_____________

6. What kind of search tools do you use the most when searching for information about products on the Internet? Rank in order, with 1 being your mostly used tool.
   ( ) Browser (e.g. direct address)
   ( ) Search Engines
   ( ) Web Directories
   ( ) Newsgroups
   ( ) Shopping Bots (Are tools where the user can type in a keyword or product type and the shopping bot brings back results from several merchants. It is usually possible to compare the products on different criteria, e.g. uSwitch.com)
   ( ) Other:_____________

7. Does your search tool return results that seem to be off-base or totally unrelated to what you are seeking?
   ( ) Frequently
( ) Somewhat
( ) No
( ) Cannot remember

8. How many result links are you usually willing to investigate?
( ) 1-2 links
( ) 3-10 links
( ) 11-20 links
( ) 21-50 links
( ) 51-100 links
( ) > 100 links