An Investigation into Irish Internet Users' Perception regarding the Data Privacy Policies of Virtual Firms operating in Ireland

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The author hereby declares that, except where duly acknowledged, this thesis is entirely her own work and has not been submitted for any degree in Waterford Institute of Technology or in any other technical college or university.

To My Parents Pat and Ann

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ABSTRACT

The growth of the Internet and database technologies have raised questions about the analysis storage and use of user's inputted data. The growth in the use of virtual companies (i.e. a company that does not have a physical footprint and exists mainly online) have introduced new elements of trust and risk. The purpose of this research study was to understand Irish consumer attitude toward on-line personal information requests, comfort and willingness to disclose information, the attitude toward the storage of the information, and to establish consumer knowledge as to their rights in relation to information storage and distribution. The research was undertaken using a positivist, quantitative approach, using a questionnaire conducted face-to-face, in selected cities and towns of various sizes around the south-east of Ireland to ensure a varied demographic.

The findings revealed that Internet usage is high, with over 80% of the respondents using the Internet daily or weekly. 67.7% of the respondents who used the Internet had shopped on the virtual sites featured in the study, Amazon, Ryanair and Ticketmaster. The length of time respondents had been using the Internet, and the frequency of their use had an impact on their comfort levels when asked for information not related to their transaction. The longer and more frequently the respondent had used the Internet, the less comfortable they were in disclosing this information. Comfort levels in disclosing information were also impacted by the type of information requested, some service quality dimensions of the website, presentation elements and the virtual firms' reputation. Privacy policies had little impact on comfort levels when disclosing personal information, just 30.6% of respondents had read a privacy policy. Respondents who had read a privacy policy indicated they were not easy to read or understand, and they did not always read one before using a website. Comfort levels and the beliefs expressed about use of information by companies suggest there is a consistent lack of consumer knowledge about the storage and use of personal information once it is disclosed.

CHAPTER ONE:

INTRODUCTION

1.0 BACKGROUND

The Internet has had an unprecedented impact on commerce, communications, information and social interactions since it was introduced into the commercial world in 1993. Its growth has been exponential, and has allowed a systems approach to how companies can gather, store and use consumer information. The growth of the Internet in Ireland emulates global growth, and while Irish levels of online purchasing are not as high as our European neighbours (Amas, 2006a), figures are rising rapidly. The growth of the Internet has also introduced the online only business: the virtual firm.

The progression of database storage technologies has corresponded with the rise of the Internet: meeting the need for processing and storing the vast quantities of information inputted. With the storage capacities offered by database technologies, many companies operating online are now collecting and storing vast amounts of information. Even if there is no clear use for some of this data, its potential use in the future makes it a valuable asset for a company to have, and database technology an essential element for any commercial website.

In order to participate in the online world users are obliged to disclose their personal information. If a user wants to make a purchase online they must disclose personal information and their payment details. This has lead to concerns about the use of this information once it has been inputted into the system, as a company can store, process and output this information as they see fit.

As with any means of communication throughout history, privacy has played a part in how communication systems are designed and used. The Internet is no exception. Consumers and observers have expressed concerns about the privacy of their information once it has been inputted and the amendments of the Data Protection Act (2003) have attempted to ease privacy fears when using the Internet. Virtual firms have also attempted to appease this lack of trust and lack of comfort with inputting information with user friendly websites and privacy policies.

However the shopping online has not reached the levels of offline shopping despite the advantages of convenience and choice, due in part to the fact that Internet users' must disclose their personal information. Therefore users' perception of the privacy policies of the virtual firms they are interacting with is an important feature when looking at virtual firms operating in Ireland.

Thus an investigation into Irish Internet users' perception regarding the data privacy policies of virtual companies operating in Ireland is an area of study which merits investigation.

1.1 JUSTIFICATION OF RESEARCH

The review of past literature has demonstrated that there has been an extensive amount of research carried out into Internet privacy and users' perceptions of privacy while shopping online (for example: Bartel Sheehan, 2002; Bellman et al., 2003; Caudill and Murphy, 2000) There has also been much research into virtual firms, including studies by Jarvenpaa et al., 1999; Chen and Tan, 2004; and Lee, 2007. However there have been few studies linking perceptions of privacy while using virtual firms (Bhattacherjee, 2002), and there is also a gap in the literature with regard to virtual firms and privacy in the Irish context.

Internet use in Ireland is growing exponentially, with the number of homes with a computer connected to the Internet raising from 5% in 1998 to 45.1% in 2005, (CSO, 2005). In conjunction with this growth online shopping and the use of virtual firms is growing in popularity. However the use of virtual firms is not as prolific as offline shopping, considering the choice and convenience online shopping offers. To participate in this growing medium, Internet users' must disclose their personal information. Internet users' perception of the privacy policies of the virtual firms they are disclosing their information to is therefore an important aspect when looking at virtual firms operating in Ireland.

This has led the researcher to develop the following research question:

What is the Irish perception regarding online data privacy of virtual firms operating in Ireland?

The programme of research is designed to investigate a number of specific issues surrounding this question. These are:

1. To understand the Irish consumer attitude toward on-line personal information requests.

2. To establish the Irish consumer's attitude towards the disclosure of information (in terms of):

- Individual comfort with disclosure of information
- Individual willingness to disclose information

3. To assess consumer attitude as to how and where this information is stored (in terms of):

- Individual comfort with how and where information is stored
- Individual awareness of how and where information is stored

4. To establish consumer knowledge as to their rights in relation to information storage and distribution.

1.2 THESIS STRUCTURE

Chapter 1: An introduction chapter which gives a background and justification of the research. This chapter also sets out the research question and objectives.

Chapter 2: A literature review chapter which explores the history of the Internet, its' commercial use and its' growth in Ireland. This chapter also explores the growth of e-commerce and the emergence of the virtual firm.

Chapter 3: A literature review chapter which looks at the history of communication methods and privacy controls, the impact of website design features and design, ethical Internet data management and privacy control, and consumer privacy concerns.

Chapter 4: The concluding literature review chapter, looking at Internet privacy policy and online trust, legal and regulatory policy and the key elements of online trust.

Chapter 5: The methodology chapter. This chapter explores philosophical assumptions of research approaches, and explores the methods available to the researcher to carry out the research.

Chapter 6: The findings chapter: This chapter sets out the findings of the conducted research and offers a multi-variable data analysis

Chapter 7: Discussion: This chapter presents a discussion of the findings in relation to the research objectives set out.

Chapter 8: Conclusion. This chapter summarises the findings, and suggests further research.

CHAPTER TWO:

THE HISTORY OF THE INTERNET IN IRELAND

FROM THE

CONSUMER PERSPECTIVE

2.0 INTRODUCTION

The following chapter traces the history of mass communication methods, the Internet, initial online behaviour and commercial use of the Internet. The concept of the Internet as a system is discussed, and the growth of the Internet in Ireland is also explored, as is the use of the Internet and online business activity in Ireland. This chapter also looks at the growth of e-Commerce, and the emergence of the virtual firm.

2.1 HISTORY OF MASS COMMUNICATION METHODS AND THE INTERNET

The need for people to communicate has been the source of some of the most influential inventions of the human race. The printing press in its earliest form is thought to have originated in Korea in the 8th century and Johann Gutenberg (1397-1468) re-invented the beginnings of the modern day printing press in Europe in the 1440. The printing press produces mass copies of a document, and was originally used to produce the Bible en masse. Postal systems are thought to date back to the beginnings of writing, with the first known organised courier service used in Ancient Egypt by Pharos, as far back as 2400 BC. More recent inventions have been newspapers, the telephone, telegraph, radio and television, all inventions with one basic human need: the need for communication. Each of these modes of communication had limitations however: They could be slow, and in some cases allowed only one-way interaction. Some had limited distribution, and could not reach a mass audience. Some were expensive if large numbers of people were to be reached.

The Internet, as we know it today, started as a resource sharing network, funded by the U.S. Department of Defence Advance Research Projects Agency (ARPA) in 1969. The first connection to the network was in UCLA, in September 1969, with 4 computers operating "online" by the end of that year. The network (ARPANET) continued to grow, and by 1973 there were over 40 computers, with some international links. Up until the 1980's the use of this network was limited, to those in industry and computer science research funded by ARPA, and government workers who were involved in the development of the project. The network's early success was attributed to the hands off approach of ARPA to the project, allowing the researchers full control over the system, with minimum deadlines, feedback and reports on progress (Kleinrock, 2004).

In the early 1980's membership to the Internet was greatly expanded, due to the American National Science Foundation (NSF). The NSF funded a number of

Supercomputer Centres around the U.S., and this gave Internet access to the wider science community, including physicists, chemists and astronomers. The NSF also funded an upgrade of the Internet links, from 1.5 megabits/second, to 45 megabits/second, which helped the expansion of the Internet community.

During the 1980's, as the Internet expanded, research units of commercial organisations became involved with it. Many of these commercial organisations were able to see the usability of the network, in particular the email capabilities, which were already widely used by the research communities (Kleinrock, 2004). Email was quick and reliable when compared to postal mailing systems: a message was rarely lost or misdirected; and a message took seconds to go from sender to receiver (Comer, 1995), as opposed to several days. In 1983 a company which would later evolve into Novell introduced the first successful network operating system. This development, along with the introduction of the first Personal Computer (P.C.) in late 1981, brought technology and email capability into the workplace (Freund, 1992).

By the late 1980's, these technological advances brought computing, and in particular the Internet, to the public sphere. It overcame many limitations of previous communication and information media, and was to become an essential part of modern life, for business, education and social interaction (Turner and Dasgutpa, 2003).

2.1.1 Initial Online Behaviour

At this stage of the Internet history, appropriate online behaviour was being established, for example, not to type in capitals, as it gives the reader the impression of being shouted at. This unwritten rule was part of the etiquette of the Internet, which became known as "Nettiquette" over time (Sturges, 2002). Other, unwritten rules, included respecting the people behind the messages, and behaving toward someone online in the same way as one would in person. There were also initial

rules regarding privacy, and respect for information being stored by others (Bartel Sheehan and Grubbs Hoy, 1999). This included not reading others email, or system administrators not taking advantage of information stored (Shea, 1990; Bartel Sheehan and Grubbs Hoy, 1999). However in the very beginning, as this was a small and trusted community, little effort was put into protection from nuisance or malicious attacks from the users themselves (Kleinrock, 2004).

2.1.2 The Introduction of the World Wide Web

A researcher, Tim Berners-Lee, had invented the "World Wide Web" in 1992. While working at CERN, a European Particle Physics Laboratory in Geneva, he built on an idea of sharing information that had been with him since childhood. By programming a computer to create a space, where any information in that space could be linked to any other computer, once that space had an identifiable address to be linked to, information could be shared. With the growth in database technologies, this newly shared information could now be processed and stored (Nissenbaum, 1998).

Berners-Lee wrote a language for computers to communicate with each other over the Internet: Hypertext Transfer Protocol (HTTP); and a language for formatting pages with the hypertext links: Hypertext Markup Language (HTML). The World Wide Web idea consisted of a web server, which held pages on a computer, and allowed others to access them, and a browser, to read write and edit web pages. (Berners-Lee and Fischetti, 1999). Now vast amounts of information, some of it already on the Internet, was made available as hypertext pages, which contained 'hyperlinks' to other pages (Berners-Lee and Fischetti, 1999), allowing public access to the Internet for the first time.

2.1.3 The Internet as a Global Phenomenon

By 1993 the Internet had become global. 1993 was also the year in which the first free Internet browser, Mosaic, became available (Hart, 2004). Mosaic allowed for both text and graphics, and was used by Microsoft when developing Internet Explorer, the most widely used web browser today. The browser allowed for easier input and processing of information; creating an automated system in relation to public interaction with the Internet.

The Internet, and in particular the World Wide Web, revolutionised how people interact with each other. With the introduction of the Internet browser, Internet use grew exponentially during the late 1990's, and in North America alone use rose from 60 million users in 1997, to 80 million in 1999 (Caudill and Murphy, 2000). This Internet use was predicted to increase to over 100 million users by 2000, with advances in technology expanding uses for the Internet (Caudill and Murphy, 2000; Singh and Hill, 2003). By 2000, 7 of the 10 most popular Web sites in the U.S. were the Internet branches of offline retailers, suggesting that the Internet was seen as an important medium to reach the consumer (Litan, 2001).

By 2003, the medium's ease of use, speed, and relative inexpense had enabled the Internet to reach almost 1 billion people world wide (Gurau and Serban, 2003): 62 million U.S. households had Internet access, equating to 55% of the country's population (Cheeseman Day et al., 2005), and every second European had used the Internet that year (Demunter, 2005). People used search engines such as Google, who handled over 380 million search queries per month in 2005 (Google, 2005), to search for information with an ease and freedom that was not possible with other communication mediums.

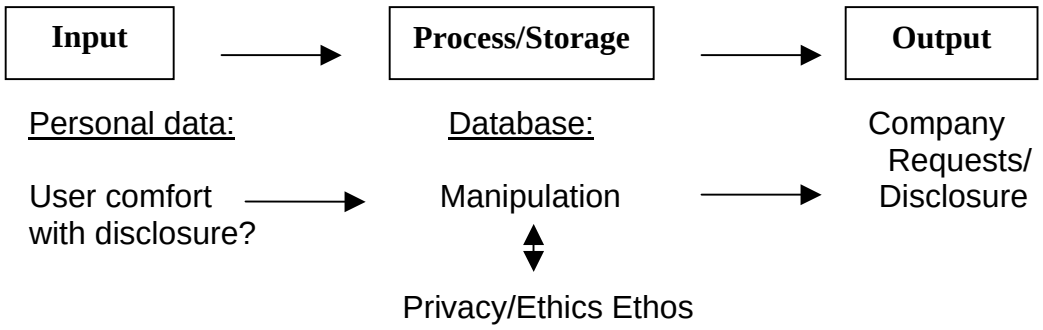
Since its commercial inception in 1993, the Internet has become a part of peoples' daily lives in much of the developed world. As of March 2007, 1,114,274,426 people use the Internet (Internet World Stats, 2007), and this is predicted to increase in the future. People have built up communities for all aspects of their lives using the Internet, and engage in electronic commerce, with new "e-businesses" such as e-

bay, or with established companies, such as supermarkets, banks, and clothing companies (Litan, 2001; Paine et al, 2007).

2.2 THE INTERNET AS A SYSTEM

With the advent of the Internet came a Systems' approach to communications, resource sharing and the storage of knowledge. A system is "a collection of parts that interact with each other to function as a whole" (Maani, 2002:155). A basic information system has three stages, input, process/storage and output. Input acquires and assembles the raw data; processing takes this raw data and converts it into meaningful information, which can then be stored. Output is the transfer of this information to those who request the information (Laudon and Laudon, 2006). Figure 2.1 outlines the system concept:

Figure 2.1 System Concept



Adapted from Laudon and Laudon (2006)

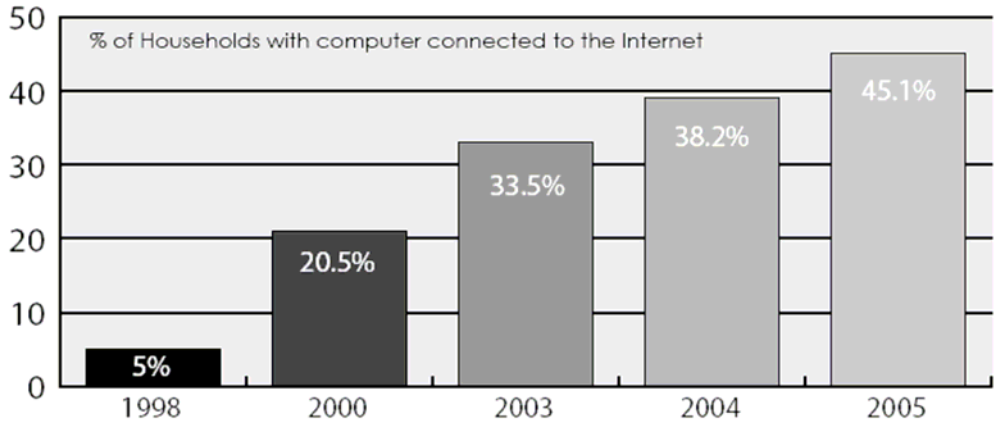
From a systems' perspective, there were basic concepts for the Internet project, in its infancy, which still hold true to today's version of the Internet. The first was "distributed control", i.e. that all parts of the network has equal control (Comer, 1995). There was the concept of an "open network" that all users had equal access (Comer, 1995; Berry, 2004). The job of the network was to move data from one terminal or computer to another, it did not need to understand or edit the data in any way (Laudon and Laudon, 2006). Understanding or editing the data was to be done by the end devices, the terminals and computers, and not the network. This allowed a greater freedom of the data being sent (Kleinrock, 2004).

Thus, the Internet ethos is based on a simple, open system approach to data movement, between the client and server, with data and information being inputted, processed, stored and outputted, as depicted in Figure 2.1.

2.3 INTERNET USE IN THE IRISH CONTEXT

As outlined in the Section 2.1.3, there has been exponential growth in global consumer activity on the Internet, particularly in the last decade. This activity is emulated in the Irish context, as supported by relevant statistics. Figure 2.2 shows the growth in Irish households with a computer connected to the Internet, from 5% of households in 1998 to 45.1% of households in 2005 (CSO, 2005).

Figure 2.2 Households with computer connected to the Internet



Source: CSO, 2005

By 2005, over 45% of the Irish population has used the Internet, and an estimated 528,800 people in Ireland use this communications medium at least once a day. Furthermore 587,000 people had used the Internet for the purchase of goods or services between June 2004 and June 2005 (CSO Information Section, 2005), equating to 17% of the population over the age of fifteen (CSO Census, 2006).

Figures released from the Central Statistics Office (2002) also show a regional divide in access to the Internet, with 47.3% of the population of the South East of Ireland having Internet access at home, compared to 38.8% of the Midlands and the West of Ireland (accounted for as a single region in the CSO survey).

There are also interesting demographic correlations between age, economic status, employment status and Internet use in the Irish context:

- The age groups using the Internet most frequently are the 16-24 years and 25-34 years with 57% of each age group using the Internet (CSO Information Section, 2005). In contrast, 28% of the 55-64 age group have used the Internet, while 9% of the 65-74 age group have used the medium.

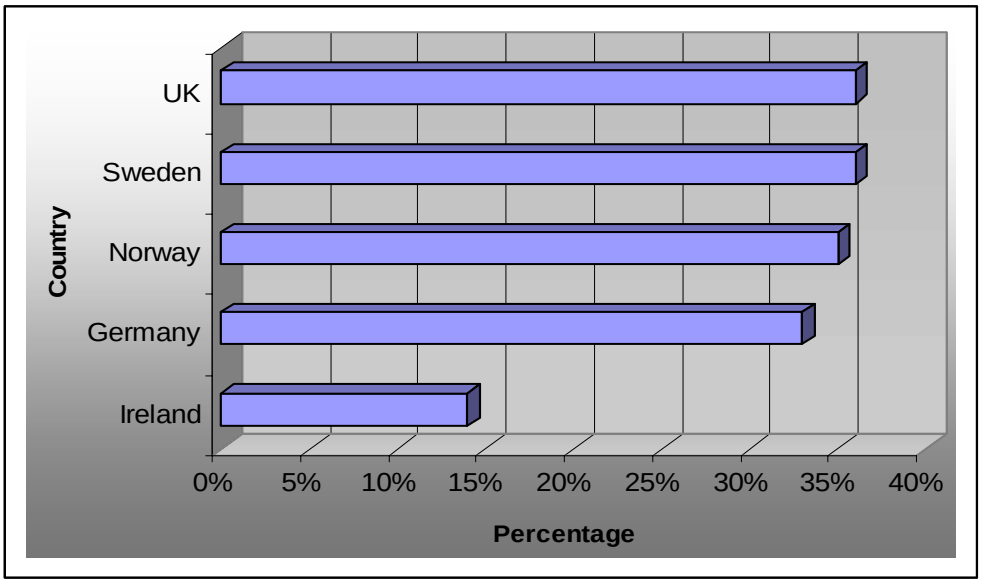
- The economic status of the individual also has a significant impact on Internet usage. Students have the highest percentage of users at 66%, while just 18% of retired people have used the Internet (CSO Information Section, 2005).

- There is also a contrast between the employed and unemployed, with 52% of the employed persons having used the Internet, and 24% of unemployed having used the Internet (CSO Information Section, 2005).

These statistics show evidence of a demographic divide between those who use the Internet and those who do not. Irish Internet users are statistically shown to be younger, employed and highly educated.

The rise in commercial use of the Internet is not reflected when it comes to shopping online for Irish Internet users. In a 2005 survey (Amas, 2006a) just 14% of the population had purchased online in the previous three months, compared with 36% in the UK and Sweden, 35% in Norway, and 33% in Germany (see figure 1.3). These results are comparable to the CSO (2005) findings detailed above.

Figure 2.3 Online purchases by Country, 2005



Source: (Amas, 2006a)

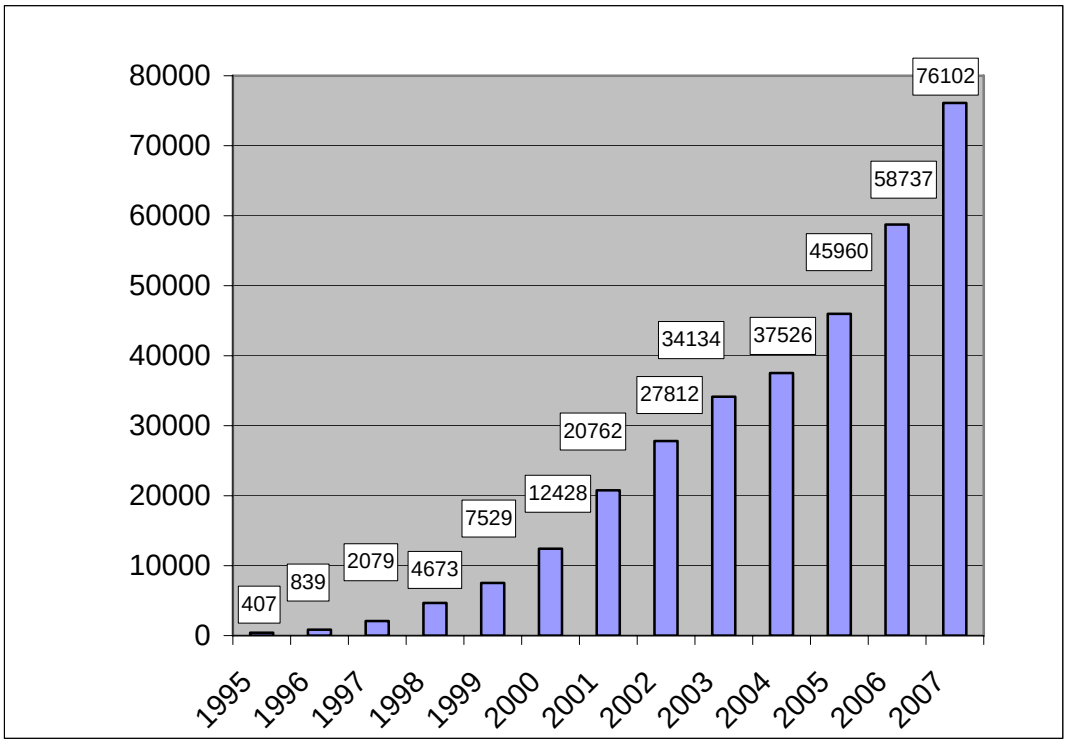
The most popular purchases are travel related: flights and accommodation, followed by music and film, and event tickets. While the Irish Internet user is not as likely to buy online as European neighbours, this trend is changing, as over 587,000 Irish people bought online in 2005 (CSO Information Section, 2005), compared to just 76,000 in 2003 (Amas, 2006a). These findings did not differentiate between virtual and other firms.

The most popular on-line activities for Irish Internet users are Email, information research and general browsing, with over 50% of the population listing them as the main reasons for using the Internet (Amas, 2006b). Shopping online was the next most popular reason, with 24% of respondents of a survey carried out in 2006 indicating they shopped online, and 10% of respondents indicating they used online banking (Amas, 2006b).

2.3.1 Online Business Activity in Ireland

As shown in figure 2.4, the rise in Irish businesses using online commercial channels has also grown rapidly over the same period with just 407 registered dot ie domain addresses in March 1995, and 76,102 in March 2007 (DomainRegistry, 2007).

Figure 2.4 Domain Registration for dot ie addresses in Ireland



Source: DomainRegistry, 2007

According to the Commission for Communications Regulation (ComReg) the average broadband penetration for Ireland is 10.4% of the population as of September 2006, compared to the European Union average of 15.6%. However, between September and December 2006, 80,600 new subscriptions were made to broadband, bringing the average penetration rate to an estimated 12.2% in Ireland. This is the highest number of new subscriptions in any quarter since broadband was introduced in Ireland, possibly due in part to the decreasing cost of broadband with

the introduction of competition in the market, and the growing availability of broadband (ComReg, 2007) throughout the country.

2.3.2 Summary

The falling costs of connectivity, the speed and bandwidth offered by broadband, and the collective international technical standards of the Internet have driven the rapid rise in Internet use among businesses and consumers, and have lead to the emergence of the virtual firm (Laudon and Laudon, 2006). The following section looks at the virtual firm in more detail, and how the technologies built to enable online shopping also added to data collection and storage of the user information.

2.4 THE VIRTUAL FIRM

Lee (2007) defines the virtual store as one that "represents a private retailer, without a fixed showroom and face-to-face contact, utilising information techniques and the media to communicate with consumers" (Lee, 2007:182).

Chen and Tan (2004) further classify virtual firms into three general categories:

1. Totally online retailers whose primary contact points with consumers are virtual.

2. Existing physical "bricks and mortar" retailers who complement their business with an online presence to increase channels of interacting with consumers.

3. Retailers who replace their physical stores to operating completely online.

For the purposes of this research study, the definition of a virtual firm is "an online retailer, without a fixed showroom or face-to-face contact, whose primary mode of selling to, and interacting with consumers is virtual" (adapted from: Chen and Tan 2004; Song and Zahedi, 2005; Lee, 2007).

The concept of electronic commerce has developed with the commercialisation of online retailing, and specifically the development of virtual firms. Electronic (e) commerce is therefore discussed in detail below.

2.4.1 Electronic Commerce

There is no definitive definition for electronic commerce (Ngai and Wat, 2002). Laudon and Laudon (2006: 23) define e-Commerce as "the process of buying and selling goods and services electronically involving transactions using the Internet, networks, and other digital technologies", while Kalakota and Whinston (1997) define e-Commerce from different perspectives: communication, business process, service and online.

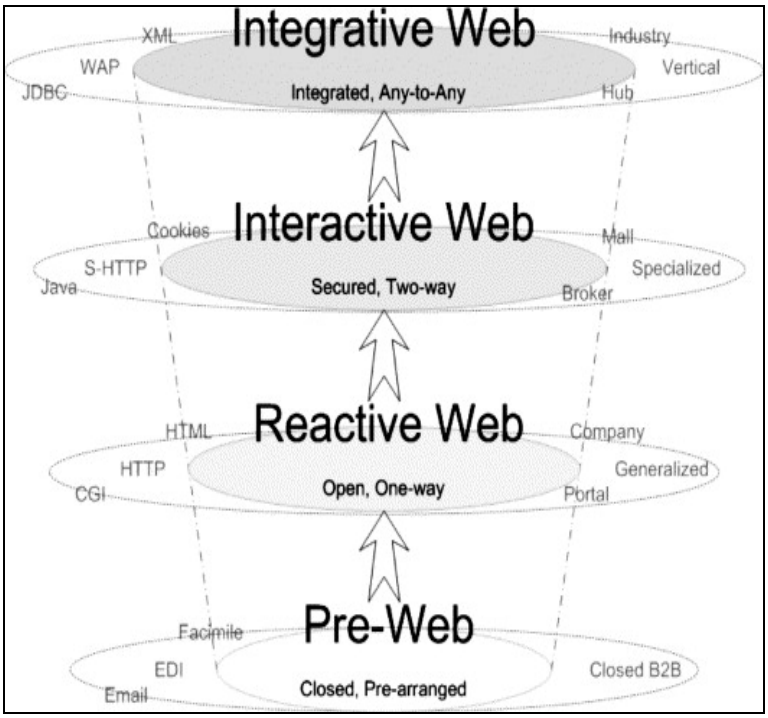
- Communication: the distribution of information, products/services, or payments using telephone, computer systems or any other electronic method.
- Business Process: the use of technology to bring about the automation of business transactions and workflow.
- Service Perspective: Allows consumers and businesses to cut service costs and increase speed of product/service delivery.
- Online Perspective: Enables the Internet to become a channel for buying and selling products and services.

In the context of this research study, electronic commerce is as per Laudon and Laudon's (2006) definition. Specifically, electronic commerce is relevant when analysing consumer privacy concerns regarding commercial transactions and interactivity with virtual firms.

2.4.2 The Evolution of Electronic Commerce Websites

As the Internet and the technology around this medium have developed, e-Commerce has also grown and evolved, facilitating the birth of virtual firms. Chu et al. (2007) set out this evolution into four eras, as shown in Figure 2.5.

Figure 2.5 Evolution of E-Commerce Websites



Source: Chu et al. 2007:158

There were levels of Internet usage in each era, beginning with business-to-business communications, leading to today's any-to-any communications.

- The Pre-Web era: Up to 1990, the Internet was used in business-to-business (B2B) communications only. Connections were one-to-one, with pre arranged sending and receiving. Examples include email, facsimile and File Transfer Protocol (FTP). Electronic data interchange (EDI) was also available, but this was quite inflexible: it was a stand-alone technology. The presentation of the data was ASCII. Storage and retrieval of information was achieved using SQL and Dbase III.

- Reactive Web Era: The early 1990's. As discussed in section 2.1.2, the development of the World Wide Web (www) in 1993 made the Internet more accessible. Now as well as sending and receiving, activities such as browsing,

advertising, information searching and cataloguing were possible. HTTP advanced how information was sent and received, and HTML advanced how the data was presented. More sophisticated database technology was developed, such as Dbase IV, Oracle and Access. However communication was still open and one-way; limiting e-Business possibilities.

- Interactive Web Era: The mid 1990's saw the development of e-business websites, with two-way interaction for buying and selling. The technologies that brought interaction from one-way to two-way communication were cookies and Secure Socket Layer (SSL). Cookies allowed for tracking the user, along with personalised and customised service. SSL allowed for information to be encrypted and sent across the open Internet securely, thus online shopping, and the virtual firm was made possible.

  Database technologies continued to advance along with the Internet advancements, Open Database Connectivity (ODBC) allowed the creation of powerful and flexible database management systems that could work together independent of programming languages or operating systems. Companies could use these technologies to combine customer data, and provide a more personal service. This had an effect on how companies could conduct business, with IT enabling the "obtaining and maintaining a share of each customer rather than a share of the entire market" (Wells et al., 1999:01).

- Integrative Web era: In the last decade, websites could be used for the management of e-business activities as well as online buying and selling. Management of business processes could take place online, such as e-supply chain management, electronic Customer Relationship Management (e-CRM), and e-procurement. Technology such as XML meant that database access across websites was now possible as information could be shared on-demand (Chen et al., 2007).

2.4.3 Consumer Concerns in the Virtual Commerce Environment

The rapid development in the Internet and the virtual firm have many advantages for both businesses and the consumer, including 24 hour access, wide ranges of products and services on a global scale, and lower cost for both business and consumer (Lee, 2007; Tapp, 2001). However this has not translated into widespread acceptance of virtual stores. Numerous studies have shown that online shopping is relatively small compared to alternative shopping methods (Turner and Dasgupta, 2003; Grabner-Krauter and Kaluscha, 2003; Salam et al, 2003; Chen and Tan, 2004; Kim and Prabhakar, 2004; Meinert et al., 2006). Evidence outlined in Section 2.3 relating to online users' commercial activity emulates these findings in the Irish context.

Among the reasons for the slow uptake of electronic commerce by end consumers are (as adapted from: Jarvenpaa and Todd, 1997; Kotzab and Madlberger, 2001; Geroge, 2002; Chen and Tan 2004; Song and Zahedi, 2005; Meinert et al., 2006).

1. Logistics: No interaction with shop assistants and no way to physically assess the product before purchase, along with transportation and shipping.

2. Reluctance in adopting a new technology: consumers may feel limited by a lack of technology know-how, and be unfamiliar with web interfaces and design. This lack of belief can impede a consumer from shopping online.

3. Security and privacy fears: Credit card details and personal information have to be shared to participate in e-Commerce. This can increase the consumers discomfort with the medium of shopping online.

All of these activities made data sharing across the Internet necessary. The propagation of information and database technology, and the Internet in particular, facilitated the rapid growth in the collection and sharing of inputted information, among organizations and people themselves (Turner and Dasgutpa, 2003). The

growth of these data sharing technologies have created new [virtual] companies (for example Amazon); new digital products (for example music on mp3 files), and have changed the way existing companies do business (Litan, 2001).

Internet users provide information in ways they are aware of (by providing their personal details), but also in ways they are not aware of, as technological advances enable online companies to track users browsing activities without the awareness of the user (Pollach, 2006). This hitherto unavailable information (Kruck et al., 2002) has become an important asset for companies, allowing levels of individual, customised service, order tracking, and home delivery services (Gurau and Serban, 2003) not previously possible.

This growth and increasing sophistication of the technologies that form the Internet and the processing technologies that are used with the Internet do raise concerns for users about the use of their personal information and their privacy (Phelps et al., 2000; Caudill and Murphy, 2000), providing ample support for research of this nature, particularly in the Irish context. Of interest is the fact that consumer's privacy concerns appear to have a direct impact on consumer uptake of virtual commerce channels, despite evident advantages associated with this medium.

2.5 CONCLUSION

This chapter has explored the growth of the Internet, from a global perspective, and from an Irish perspective. The growth of e-Commerce and the emergence of the virtual firm have also been discussed in the context of growing consumer privacy concerns.

In chapter three online communications, privacy controls and information disclosure are discussed from a virtual firm perspective.

CHAPTER THREE:

ON-LINE COMMUNICATION METHODS,

PRIVACY CONTROLS

AND

INFORMATION DISCLOSURE

3.0 INTRODUCTION

Chapter three focuses on early data collection management techniques and data capture. It also explores early Internet users' privacy concerns, leading up to current concerns user concerns and privacy issues.

Internet user comfort with information is discussed, and the link between user consent and the user's interaction with a particular site is explored in the context of information disclosure.

3.1 PRIVACY

One of the earliest definitions of privacy is the 1890 legal definition from Warren and Brandeis (1890) which describes privacy as 'the right to be left alone'. Westin (1967:7-8) further defines privacy as "the claim of individuals, groups and institutions to determine for themselves, when, how and to what extent information about them is communicated to others". For the purposes of this research, privacy is "the claim of individuals to be left alone, free from surveillance or interference from other individuals or organizations, including the state" (Laudon and Laudon, 2006: 155).

In order to appreciate consumers' privacy perspective in a virtual communication environment, it is important to understand the history of communication methods and privacy controls as underlying principles of human interaction.

3.1.1 The History of Communication Methods and Privacy Controls

The history and development of written communication methods is intertwined with the history and development of privacy tools and controls. Ancient communication methods, such as cave drawings and Egyptian hieroglyphics raised peoples' concerns as fear of disclosure and breach of privacy were primary issues for these communicators (Young, 2006). As a result, tools were developed to alleviate concerns and protect privacy, such as coded hieroglyphics and wax seals on letters in ancient Rome, and these tools gave personal and political privacy to early communicators (Singh, 1999; Young, 2006).

The invention of the printing press in 1440 brought changes to general communication methods, as written information became more widespread and available to the masses (Dewar, 2000). Mass produced books allowed solitary and private reading to take over from the tradition of storytelling in groups (Dewar, 2000). As newspapers and magazines became a popular means of communicating news and political events, people began to express their opinions in print. The need

for privacy was still as evident as it had been in the past, with anonymous articles and opinion letters from readers seeking to protect their identity while communicating with a reading audience (Weicher, 2006).

As communication technology advanced from the mid 19th century, the need for privacy was omnipresent; telegrams were delivered to the recipient in closed envelopes, telephone exchanges gave way to private telephone lines, consumers were provided with ex-directory telephone numbers, and public telephones were even enclosed (Winston, 1998) all ensuring privacy in communications.

3.1.2 Early Data Collection and Management Techniques

Any information building from data collected in any of the earlier communication methods was incidental, as the data was too vast, scattered and expensive to collect, analyse or store in any systematic way (Nissenbaum, 1998; Clarke, 1999). Thus data could be inputted and information transferred, with minimum fears of it being processed or stored in any meaningful way.

During the first half of the 20th century, the development of the programmable digital computers meant that data capture and analysis was now feasible, at least in theory, and therefore data became potentially valuable from a business perspective (Nissenbaum, 1998).

Since 1993, the Internet has become an inherent part of modern communications, with over 1 billion users depending on this medium for daily communications, transactions and research (Yang and Miao, 2005, internetworldstats.com, 2006) In a recent study investigating the objective of Internet use, over 80 percent of all Internet users went online originally for communication reasons, mostly to use email, and just 2 percent of Internet users indicated they went online for the first time to make purchases (Kolzow and Pinero, 2001).

3.2 IMPACT OF WEBSITE FEATURES AND DESIGN

The features and design of a virtual firm's website has been found to have an impact on the usage of the website, consumers' satisfaction and acceptance of the medium (Huizingh 2000; Song and Zahedi, 2005; Zviran et al., 2006; Wang and Head 2007). In the case of a virtual firm, the consumer only has the website to form an opinion and to make a purchase, and therefore features and design play a vital role in establishing consumer comfort when using this medium.

3.2.1 Service Quality

Different studies have found various elements play a role in the use of websites and consumer satisfaction. Chen and Tan (2004) argue that perceived service quality (the discrepancy between what consumers expect and what consumers get) is crucial to the use of virtual firms, as they are a marketing channel for what is being sold, and the only information source the consumer has. Parasuraman et al. (1988) identified five dimensions of service quality (tangibles, reliability, responsiveness, assurance and empathy) which were adapted by Chen and Tan (2004) for the virtual firm as follows:

- Tangibles: the physical facilities provided by the virtual firm, for example the appearance and features, leading to ease of use, and the existence of offline and online customer service.
- Reliability: the timeliness of the virtual store and how dependable the delivery of the product is.
- Responsiveness: the speed at which the virtual store helps customers, and email responses to queries and problems.
- Assurance: A virtual firm's ability to create trust and confidence (security and privacy).
- Empathy: Individualised attention for a virtual stores' customer, for example remembering their details or preferences on a return visit.

3.2.1.1 Tangibles

The appearance of the website, colour, graphics and navigational tools, all play a role in the ease of use of a website (Song and Zahedi, 2005; DeWulf et al., 2006). Studies carried out have shown that perceived ease of use of a website will have a positive effect on the user's satisfaction with that website (Muyelle et al., 2004; Zviran et al., 2006). Information richness also has an effect on user satisfaction with a virtual firm (Chen and Tan, 2004). Studies by Muyelle et al. (2004) show that information relevancy, accuracy, and comprehensiveness correspond to the consumer's satisfaction with a website.

It has also been found that difficulty using a website can create problems when buying online, leading to a negative impact on online sales (Bellman, et al., 1999; Ranganathan and Ganapathy, 2002). A study by Shih (2004), found that an individual's perceived ease of use of the web impacted on their perceived ease of use of trading online, which in turn positively affected attitudes towards shopping online.

3.2.1.2 Reliability and Responsiveness

The speed of the transaction, as well as search times, or the speed at which a page is loaded onto the screen can have an impact on consumers using a virtual firm's website (Liu and Arnett, 2000; Muyelle et al., 2004). Sites that are slow to load up or delays in search results can frustrate the user, and lead the user to go to another site (Ranganathan and Ganapathy, 2002).

Pre, during and post sale resources such as Frequently Asked Questions (FAQ) and email contact, along with money back guarantees, warrantees, order tracking, privacy policies and up-to-date security systems can increase the consumer's level of trust and ease when using the site for purchasing (Lee, 2002; Malhorta et al., 2004; Pavlou and Geffen, 2004). It is the privacy policy impact on consumer

comfort when interacting with virtual firms that is the primary focus of this research study.

3.2.1.3 Assurance

A study by Chen and Tan (2004) shows that consumers' perceived trust in a virtual firm had a positive effect on the attitude towards using a virtual firm. Security and privacy issues such as collection, unauthorised secondary use and improper access, have been found to have a negative impact on trust. Financial and personal information transmitted securely during a transaction is vital to the success of virtual firms. However a study carried out by Shih (2004) found that security did not impact on the consumer's willingness to shop via the Internet, but was a concern in the delivery and payment phases, and that many web users are concerned about payment transfer. In a study carried out by Ranganathan and Ganapathy (2002), security was the best predictor of online purchase intent, followed by privacy. These criteria came before website design and information concerns. Pleasure and satisfaction have also been found to impact on consumers' trust and willingness to use virtual firms (Liu and Arnett, 2000; De Wulf et. al., 2006).

3.2.1.4 Empathy

A virtual firm can form what is effectively a one-to-one relationship with a consumer, with personalisation and customisation made easy to achieve through the medium of web pages (Peppers et al., 1999). A long term relationship can be built up with the consumer, where there can be interaction between the site and the user, dictated by the user (Wang and Head, 2007).

Concerns about the privacy of information disclosed can be lessened by the features and design of a website, however there are other factors to consider, and the next section looks at data management and privacy control in more detail.

3.3 ETHICAL INTERNET DATA MANAGEMENT AND PRIVACY CONTROL

In the interests of consumer privacy rights, specific attention is being drawn to ethical behaviour in relation to Internet data capture, management and use. As individual users input more information in their use of the Internet, their concerns about the ethical behaviour of online companies grow (Cranor, 1998), particularly in relation to data capture and privacy etiquette. Each of these topics is discussed in detail below.

3.3.1 Internet Data Capture

The technology behind the Internet allows for sophisticated information gathering that was not possible before the Internet's inception. Information can be stored in databases, which can automate the collection and processing of information input by the user very easily (Nissenbaum, 1998).

Due to today's Internet and database technology, a website operator finds it easier to automatically collect information about its users, rather than figure out how to reconfigure the web server so as not to collect information (Cranor, 1998). This information can be merged and manipulated to build a detailed picture of a person's buying behaviour, search patterns, and 'online' activities (Graeff and Harmon, 2002). Companies can now connect this data with amassed data offline, such as demographic information, to build very powerful and detailed profiles of a person, for all aspects of their business (Gurau and Serban, 2003; Graeff and Harmon, 2002). This can be done, in most cases, without the user's knowledge.

3.3.2 Internet Privacy Etiquette

As people begin to depend on the Internet as a part of their daily lives, they are starting to find that they loose a sense of control over their personal information, and how that information is used by companies (Chen and Rea, 2004). The sophistication of the collection and manipulation of information makes it difficult for an Internet user to keep track, as a profile of them can be built up from many different sources (Caudill and Murphy, 2000). It has been found that the public can

be unaware of how much their information is being manipulated, or their privacy being put at risk (Kruck et al., 2002). A study by Pollach (2006) has also shown that companies will admit to practices which do not uphold user privacy, such as data sharing (that is the sharing of users' email addresses and personally identifiable information) with third parties, selling customer data, and allowing third parties access to data, without agreeing to any privacy protection. This can lead companies to view customer information as an asset.

With the onslaught of Internet communications and the rapid growth of the Internet itself, come accusations of 'big brother' activity (Cutler, 2006) an example of which include Amazon.com's announcement in the year 2000, that in the event of the company bankruptcy, databases of customer information would be treated as an asset, and sold as such (Gurau and Serban, 2003). Thus purchase and demographic information of Amazon's customers could be made available to any third party who wished to purchase it, compounding consumers' privacy concerns in relation to virtual firm interactivity.

3.4 CONSUMER PRIVACY CONCERNS

The following section looks at initial consumer privacy concerns and privacy concerns in the modern age.

3.4.1 Initial Consumer Privacy Concerns

According to Westin (1967), privacy was not mentioned as an issue of the effects of computerization during the 1940s and 1950s in the literature of that time. By the 1960s this perspective had changed, with the capabilities of database technology for processing large amounts of data raising concerns among many commentators in the political arena, as well as journalists and activists (Westin, 1967; Nissenbaum, 1998). The US government's data collection in the 1960s brought the issue of personal privacy into the general public's eye, when in 1965 the Social Science Research Council proposed to "coordinate government statistical information" (Nissenbaum, 1998:9).

Fair Information Practices (FIP) originated at this time, and in 1980, these were formalized into the Organisation for Economic Co-operation and Development's (OECD) guidelines. These were abbreviated by Clarke (1999:64) and from a systems view could be seen as follows:

- Input:
    - There should be limits to the collection of personal data and any such data should be obtained by lawful and fair means, and where possible with the knowledge or consent of the data subject.
    - Purposes for data collection should be specified no later than at the time of the data collection.

- Process and Storage
    - Personal data should be relevant to the purposes for which it is to be used, and kept accurate, complete and up to date.

- An individual should have the right to obtain data about him/herself, and the right to challenge that data.
- A data controller should be accountable for complying with measures that give effect to the principles.

- Output:
  - The use of data collected should be limited to the purposes for which the data was collected.
  - Personal data should not be disclosed, made available or otherwise used for additional purposes, except with the consent of the data subject or by authority of law.
  - Personal data should be protected by reasonable security safeguards.
  - There should be a general policy of openness about developments, practices, and policies with respect to personal data.

Adapted from: Clarke (1999)

However with the speed of technological advances, and the creation of the Internet, FIP's, along with other laws that aim to protect privacy, were not keeping pace with the technologies (Nissenbaum, 1998; Clarke, 1999; Lawton, 2001).

3.4.2 Internet Use and Privacy Concerns in the Modern Age

The Internet has enabled people to search for information, communicate and shop with a choice, speed and ease that were previously unheard of. The electronic medium which provides this ease of use and speed has a downside however, most notably the information trail that is left behind when using the Internet (Caudill and Murphy, 2000). As users browse the Internet, data about their search activities as well as information the user discloses while making purchases can be collected, with or without their knowledge (Phelps et al., 2000; Caudill and Murphy, 2000; Chen and Rea, 2004). The collected data can help online businesses to develop profiles of individual users and customize their sites; however how the information

is then stored, processed and shared is not transparent to the user (Gurau and Serban, 2003). This raises privacy concerns and results in many users' reluctance to disclose their information (Pollach, 2006). Many companies do not specify detailed privacy protection, and to date there is no technology solution to indicate to users what happens to information once they share it, or how that information is shared (Caudill and Murphy, 2000; Singh and Hill, 2003; Chen and Rea, 2004).

The Internet is an intrinsic part of modern communications, however, there is little evidence in existing literature that Internet usage, privacy policies and users' privacy concerns have been investigated in any real depth (Bellman et.al, 2003). Furthermore there is little evidence that this issue has been studied in the Irish context.

Thus, the aim of this research study is to investigate Internet users' perception regarding data privacy policies in virtual firms operating in Ireland.

3.5 INTERNET CONSUMER COMFORT WITH INFORMATION DISCLOSURE

The following section looks at users comfort when inputting their information, and the link between user consent and user interaction.

3.5.1 Comfort Inputting Information

What concerns Internet users about their privacy is the ability of companies to link information and Internet activities, whether it is by using data that has been provided by the user, or information that has been collected from other sources, without the user's knowledge. This linking of data means that users can only control parts of their own profiles, and can be left unaware of collective information held about them (Turner and Dasgutpa, 2003; Caudill and Murphy, 2000).

Foxman and Kilcoyne (1993) argued that information privacy exists only when a person is (1) given control over personal information and (2) informed about data collection and other issues. Users control of information is an essential part of information privacy, and can be seen when users can agree how their information be used, when users can modify their information, and when users can choose to opt in/out of any activity when online (Foxman and Kilcoyne, 1993).

Although many websites have adopted a more privacy friendly face, with the use of privacy policies and statements, when people realise their information is being used in ways that are not obvious from how it is gathered, they can become concerned, and alter how they behave online (Cranor, 1998). Survey analysis by Hoffman et al. (1999) found that 95% of Internet users surveyed had declined to provide information to any given Website when asked, with 40% of those who had provided their details, providing false details. Cranor et al. (1999) found that users were more likely to provide information when not identified, for example 58% provided information about their income, but just 35% provided this information when asked to also provide their name and address. The "sensitivity" of the data was also seen as a significant factor when providing information, with for example, 80 and 87 percent comfortable with providing details of favourite television shows and favourite snack. In comparison, 17% were comfortable providing their income

details, and just 11% were comfortable providing their phone number (Cranor et al., 1999).

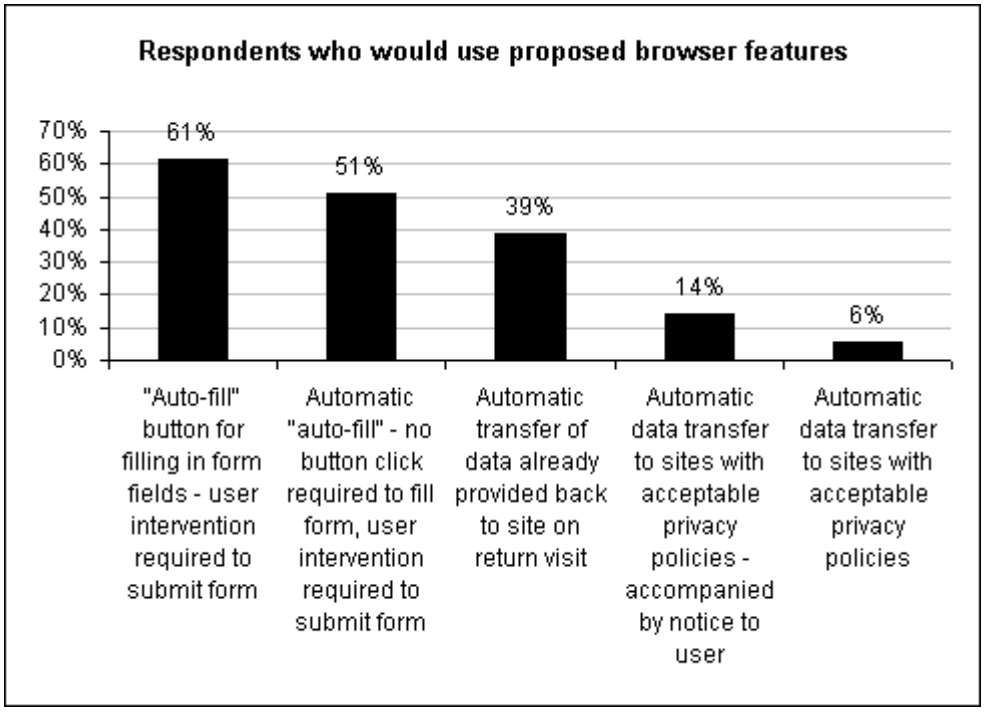
3.5.2 The Link Between User Consent and User Interaction

Studies by Chen and Rea (2004) found that Internet users appeared to adopt three actions to maintain their privacy, and control the association of their personal details with their identities when they are inputting information:

1. Falsification of their information,
2. Passive reaction (for example ignoring or deleting web page pop-ups, unsolicited (marketing) emails, and uninvited chat requests, and
3. Identity modification (using gender neutral or multiple usernames and identities).

Analysis by Hoffman et al. (1999) found that 87% of those surveyed believed they should have "complete control" over the demographic information gathered by a Web site. Findings by Cranor et al. (1999) also show user desire to have control over their personal information. As shown on the Figure 2.1 (Internet User Data Control Preferences) overleaf, 86 percent of those surveyed had "no interest" in the automatic transfer of their data, preferring to be in control of the data themselves. The same survey also found that the main reason given for not registering their information at online sites was the lack of details as to how that information was to be used (Cranor et al., 1999).

Figure 3.1 Internet User Data Control Preferences



Source: Cranor et al. (1999:13)

Today's technology can make it impossible for users to provide their consent for the use of their personal information once they have provided it (Caudill and Murphy, 2000). Some websites require registration for a user to be able to gain access to certain web pages on the site (Bartel Sheehan, 2002). The more private information a website requests, the more likely a user would be uneasy as to the further use of their information by the company/people behind the website (Chen and Rea, 2004). As users input their data to access different sites and services, in many cases there is no clear message about the need for or potential use of this data, or what information will be taken from it.

3.5.3 Internet Consumer Comfort with Information Storage Policy and Procedure

Internet consumers have limited awareness of the ways online companies gather, process and combine their personal information, and while consumers express concern, there is also found to be a lack of interest in taking action about it (Cranor, 1998; Kruck et al., 2002). In a study on Internet users privacy concerns carried out by Paine et al. (2007), respondents listed viruses, spyware, hackers and spam as their main 'privacy' fears while using the Internet. This implies that respondents were unaware of threats to information privacy, and how personal information can be stored and used.

Those respondents who did not have any concerns about privacy online listed reasons such as: indifference, not knowing how to protect their information, and not needing to protect their information as the main reasons for not taking any actions to protect their privacy. It has been found that those Internet consumers who are aware or concerned about privacy have little knowledge of legal structures in place to regulate the storage and usage of their personal information (Gurau and Serban, 2003). Results of a survey carried out by Phelps et al. (2000) indicated that consumers who expressed fears about their privacy would have those fears eased by companies giving consumers control over how information was distributed to third parties. How the company itself stored the information was not an issue from the consumers perspective.

3.6 CONCLUSION

Consumer concern is growing in relation to Internet usage, as users provide greater depth and breadth of personal information in the course of on-line transactions. The next chapter explores factors that may affect the disclosure of personal information details, Internet privacy policy, and trust.

CHAPTER FOUR:

INTERNET PRIVACY POLICY

AND

ONLINE TRUST

4.0 INTRODUCTION

This chapter focuses on privacy, and the factors that can affect comfort levels and views of privacy. The focus is on legal and regulatory policy, privacy policy statements and their impact on user comfort. The issue of trust is also explored, focusing on technical experience and knowledge, user familiarity, company reputation, and informal feedback.

4.1 THE INTERNET PRIVACY POLICY ENVIRONMENT

Data privacy refers to the evolving relationship between technology and the legal right to, or public expectation of privacy in the collection and sharing of data (Laudon and Laudon, 2006). These criteria feed into the principles of a virtual firm's privacy policy. A privacy statement is: "Information on a web site explaining how and why an individual's data are collected, processed and stored" (Chaffey and Wood, 2005: 631), while a privacy policy "provides consumers with information about the organisations' information practices" (Milne and Culnan, 2004:16). It is argued that consumers comfort levels with disclosing information on a website could be improved by the presence of a concise and reader-friendly privacy policy (Milne and Culnan, 2004; Pollach, 2006). Chapter 3, Sections 3.3 and 3.4 have discussed consumer privacy concerns and willingness to disclose information in some detail. The following sections discuss the Internet privacy environment from a legal and regulatory perspective.

4.1.1 Legal and Regulatory Policy in the Internet Privacy Environment

The Internet, being a worldwide medium, makes controlling privacy of information by laws difficult, as different cultures and jurisdictions have laws which can conflict with each other. While the European Data Protection Act (1998, 2003) aims to protect the consumer, many U.S. laws with regards to privacy favour business and companies (Turner and Dasgutpa, 2003). From a national perspective, Irish consumers are protected by the Data Protection Act (1998, 2003) and the Freedom of Information Act (1997).

The Data Protection Act obliges data controllers and data processors to ensure data is:

- Obtained fairly and processed fairly
- Processed only for purposes for which in was originally supplied
- Kept safely and securely
- Kept for one or more lawful purpose
- Not supplied to a third party except where appropriate

- Kept accurate and up-to-date
- Adequate, relevant and not excessive
- Kept as long as is necessary only

Source: Data Protection Act (2003)

The person providing their information must be made aware of who they are providing it to, what the information will be used for, and who will have access to it. If the information is made available to a third party, the person it pertains to must have given consent (Data Protection Act, 2003)

The Freedom of Information Act (1997) refers to official information held on members of the public, and the public's right to access that information to the most appropriate extent in terms of the public interest and the individual's right to privacy.

Freedom of Information covers the following principles. Every individual has or should have the right:

- To know what information is held/stored in government records about him or her personally (subject to certain exemptions to protect key interests).
- To inspect information files stored or held about or relating to him or her.
- To have inaccurate information stored on file corrected.

Source: Department of Finance, (2007)

4.2 PRIVACY POLICY IMPACT ON USER COMFORT

Results of a survey carried out by Meinert et al. (2006) found that when the level of privacy provided by an online company was increased in their privacy statement, the online consumer was more disposed to provide their personal information. However, it has been found that users do not read privacy policies, and are unaware of privacy technology solutions, for example privacy seals such as TRUSTe (Turner and Dasgutpa, 2003). This may be due to the fact that privacy policies sometimes do not include all data handling practices, and can leave out potentially vital information about those practices (Lawton, 2001). Users can have difficulty understanding verbose legal policies, and have no way of checking if a company is fulfilling the claims made on their privacy policy (Lawton, 2001; Pollach, 2006). Sometimes the policy is simply a statement of intent by a website, that they intend to share information gathered with third parties. The 'privacy policy' is then a means of protecting the website from any legal issues, as the user has been informed that the website intend to share the information provided by the user (Meinert, 2006).

While a study by Pollach (2006) found that privacy policies can increase user comfort by informing them about data collection policies and privacy issues, they do have intrinsic shortcomings. These shortcomings include the fact that Internet users generally do not have the means to investigate the extent to which a company actually abides by their own privacy policy, and the situation where cookies or other data gathering software may have collected data before an Internet user has read the privacy policy's details about exactly when information is collected and used (Pollach, 2006).

Trust has a clear impact on user comfort when using the Internet and this topic is explored in the following section.

4.3 TRUST

Trust in the Internet and e-Commerce can be defined as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer et al., 1995: 712).

Trust research can be found in many disciplines, including psychology, sociology, philosophy, management, human-computer interaction (HCI), and e-Commerce. Despite the wide range and differences between them, all disciplines acknowledge the importance of trust (Corritore et al., 2003). With the rapid growth of the Internet and e-Commerce, trust in the online world has become as big an issue as it is in the offline world. Without trust, the basics of the Internet, communication and commerce would not be possible, just as these activities would not be possible in the offline world (Corritore et al., 2003). Therefore, the exchange of personal information is a vital part of the Internet's functionality, and just how much personal information users are prepared to disclose, is dependant on trust (Chen and Rea, 2004).

To interact with any website there must be an initial level of trust (Chen and Rea, 2004). This level of trust can be formed by many factors: the user's technical knowledge, the user's own familiarity with the website, or company behind the website, the reputation of the website, and the positive information the user has got from others through word of mouth (Kim and Prabhakar, 2004; Jarvenpaa and Tractinsky, 1999; Corbitt, 2003).

A user's perception of risk when giving personal information during an online transaction is likely to be affected by their level of trust in the website, or company behind that website, that is, the more trust the user has, the more comfortable the user is providing information about themselves (Malhotra et al., 2004). Notably, while many factors in building trust can be allowed for online interaction, the absence of face to face contact cannot be completely replaced online, and this is a

strong factor in the comfort of the user when using the Internet (Jarvenpaa and Tractinsky, 1999; Papadopoulou et al., 2001; Chellappa and Pavlou, 2002).

4.3.1 Key Elements in Online Trust

Key elements relating to trust should be addressed when creating an on-line interaction environment. Specifically, the user's likely technical experience and knowledge, their familiarity with on-line interaction, the vendor's reputation and word of mouth will all impact trust in this environment (Song and Zahedi, 2005). Each element is discussed in detail below.

4.3.1.1 Technical Experience and Knowledge

A users experience with the Internet can have a conflicting effect on levels of trust. A lack of experience and knowledge can make a user feel vulnerable in the online environment; as they may need to rely on other users for help when using the Internet (Corritore et al., 2003). However it has also been found that users who lack experience or knowledge have a tendancy to trust the computer system they are using, as it can provide speed and ease-of-use, making the user more comfortable with the transaction, as their lack of expertise is not limiting them (Lee and Moray, 1992; Hankowski et al., 1994; Kantowitz et. al., 1997).

Notably, a study by Corbitt et al. (2003) has shown that when users are familiar with the Internet, their experience increases their confidence, and has a positive effect on their level of trust. Corbitt et al.'s study (2003) also showed that a user's Internet experience can have a negative effect on trust levels, as security and privacy concerns can reduce trust if the experience is unfavorable. Finally, a study by Ribbink et al. (2004) found that trust increases by reassuring users of their security and privacy rights.

Therefore, trust can be impacted by positive on-line experiences, even among inexperienced users, and trust is directly influenced by negative security and privacy experiences.

4.3.1.2 User Familiarity

Familiarity gives the user a reasonable expectation of what will happen during an Internet transaction, based on what has happened during previous transactions (Gulati, 1995; Geffen, 2000). When a user has a level of experience and familiarity with a website the knowledge they have gained from these transactions can be used to make a reasonable prediction of future transactions. This familiarity can create a level of trust for the user (Corritore et al., 2003), assuming the user's previous experiences have been positive.

A study by Bhattacherjee (2002) found that familiarity with the online company was a significant indicator of a user's willingness to interact with the company's website. This study also found a strong link between the user's familiarity and their willingness to trust the company online. Other factors can contribute to users trust; one of these other factors is the company's reputation.

4.3.1.3 Company Reputation

As the user has no face-to-face interaction when using the Internet, reputation on the website or the company behind that website can play an important role in the user's level of trust (Jarvenpaa and Tractinsky, 1999; Chellappa and Pavlou, 2002). If a particular website has a good reputation, it can be assumed a large amount of effort and resources have gone into building that reputation. If the website was to in some way violate the user's trust this would result in a loss equivalent to the time and effort put into building this reputation, therefore, this gives the user an assurance of the trustworthiness of the particular website (Jarvenpaa and Tractinsky, 1999). A study by Teo et al. (2004) found a positive and strong relationship between reputation, and online user willingness to provide their personal information. More informal methods can also be a factor in the comfort levels felt by the online user to provide their information; one of those is word of mouth, or informal feedback.

4.3.1.4 Informal Feedback

Not all methods of building trust can be as controllable as reputation. A user can gain information from third parties, in relation to the website or company behind that website, through word of mouth (Papadopoulou et al., 2001). Word of mouth is an informal means of passing on information between people, through any means of communication, generally through conversation, but it can also be through telephone conversations, text messaging, and email.

Informal methods of communication, such as word of mouth, can play a vital role for a user when trying to understand difficult or unfamiliar medium, such as the Internet. Many studies have found that word of mouth plays a significant role in easing concerns and fears when using the Internet. A study by Kim and Prabhakar (2004) found that positive word of mouth had a positive effect on a user's initial trust of an Internet transaction. In a survey carried out by MORI in 2006, 52% of European consumers indicated they would be more likely to purchase a product if they read positive comments about it through "user generated content" - for example on blogs, and message boards online (Amas, 2006b), while Corbitt et al. (2003) found that when purchasing online, user fears were lessened by positive word of mouth.

Thus it is important for an organization to educate themselves as to the informal feedback been generated by users over time.

4.4 CONCLUSION

Privacy policies, laws and regulations can have an effect on user comfort levels when disclosing their personal information when using the Internet. The presence of a privacy policy on a website can allay fears, however many users do not read privacy policies, and laws and regulations have been found to be not widely known about.

It has been found that users of the Internet will not interact with a website, or provide accurate information without first having an acceptable level of trust in that website, and/or the business behind it. The specific type of information that the website requests can also play a major role in the formation of trust. Factors including word of mouth, familiarity, and reputation also play vital roles in the generation of trust in this context.

The previous three chapters have explored the growth of the Internet and virtual firms. This growth has had an impact on communications and e-commerce which in turn have impacted on privacy and privacy concerns. The next chapter outlines the methodology for investigating the Irish perspective on privacy in relation to virtual firms. The various methodological perspectives are discussed, and an investigation method for this study is selected and described within this chapter.

CHAPTER FIVE:

RESEARCH METHODOLOGY

5.0 INTRODUCTION

The following chapter focuses on the research methodology. The research question and objectives uncovered in the literature review chapter are the basis of the methodology. The philosophies behind research, and the subsequent research methods are explored, and the research method chosen is based on this investigation. This is followed by a description of the research design, the data collection and administration and the legitimacy of the research method.

5.1 THE RESEARCH QUESTION AND OBJECTIVES

The core research question in this research study is:

What is the Irish perception regarding online data privacy of virtual firms operating in Ireland?

Internet use in Ireland is growing at an exponential rate and the use of virtual firms is growing in popularity. To participate in this growing medium, Internet users' must disclose their personal information, and this has lead to concerns about the privacy of this information. There has been research into users privacy while online, however the Irish perspective of privacy while using virtual firms has to date not been investigated.

The following objectives stem from this core research question:

1. To understand the Irish consumer attitude toward on-line personal information requests.

2. To establish the Irish consumer's attitude towards the disclosure of information (in terms of):
   - individual comfort with disclosure of information
   - Individual willingness to disclose information

3. To assess consumer attitude as to how and where this information is stored (in terms of):
   - Individual comfort with how and where information is stored
   - Individual awareness of how and where information is stored

4. To establish consumer knowledge as to their rights in relation to information storage and distribution.

To investigate the research question and incumbent objectives, the researcher will explore the philosophical understanding behind research, and the research methods that stem from this philosophical understanding. This will enable the researcher to select a method of investigation.

5.2 PHILOSOPHICAL PERSPECTIVE

It has been argued that in the choice of research methodology, the research issue itself should be the most important factor (Trauth, 2001). Therefore, in order to carry out an investigation into Internet users' perception regarding the data privacy policies of Virtual companies, the methodology chosen is a key factor in the success of that research. To understand and make the choice, the underlying philosophies behind the methodologies need to be understood. These philosophies are presented in table 5.0 below:

Table 5.0
The subjective – objective dimension

The subjectivist approach		The objectivist approach
Nominalsim ←	**Ontology** →	Realism
Interpretivist (Anti-positivist) ←	**Epistemology** →	Positivism
Qualitative (Ideographic) ←	**Methodology** →	Quantitative (Nomothetic)

Adapted from: Burrell and Morgan, 1979

5.2.1 The Ontology

The ontological question behind any research is: "What is the form and nature of reality and what is there that can be known about it?" (Guba and Lincoln, 1994:108). The nominalist works under the assumption that reality (the social world) is external to the individual, and that there is no real 'structure', other than what the person creates to make sense of their reality. The alternative to this realism: the belief that reality is independent of the individual person's awareness of it. The individual exists in a world which has an existence of its own, and is not

created by the individual (Burrell and Morgan, 1979). The researcher is approaching the research from a realist perspective, as the research is looking at peoples' perceptions, and data privacy of virtual firms, which is separate to them.

5.2.2 The Epistemology

The epistemological question behind any research is: "What is the nature of the relationship between the knower or would-be knower and what can be known?" (Guba and Lincoln, 1994:108). Thus, epistemology guides research, assessing what can be considered 'true' or 'false'. Two of the main ways of looking at the epistemology are: from a positivist perspective, and from a interpretive perspective. Positivism assumes knowledge is something that can be acquired, while interpretive perspective assumes knowledge is something that has to be personally experienced (Oates, 2006). These perspectives are presented in table 5.1 below:

Table 5.1
Key features of positivist and interpretive paradigms

	Positivist	Interpretive
Basic Beliefs:	The world is external and objective: there is an independent social and physical world that can be studied and measured	The world is socially constructed and subjective
	Observer is independent: the results are generalisable, regardless of the researcher or the occasion	Observer is part of what is observed
	Science is value free	Science is driven by human interests
Researcher Should:	Focus on facts	Focus on meanings
	Look for causality and fundamental laws	Try to understand what is happening
	Reduce phenomena to simplest elements	Look at the totality of each situation
	Formulate hypothesis and then test them Universal Laws	Develop ideas through induction from data
Preferred methods include:	Operationalising concepts so that they can be measured	Using multiple methods to establish different views of phenomena
	Taking large samples	Small samples investigated in depth or over time

Adapted from: Easterby-Smith et al., 1991:27 and Oates, 2006:28

5.2.3 Positivist Paradigm

Positivist research has built criteria of validity, reliability and rigor in scientific research. The Scientific Method has two underlying assumptions, that our world is orderly, not random, and that it can be investigated objectively (Burrell and Morgan, 1979; Alavi and Carlson, 1992; Oates, 2006). This paradigm has brought about quality standards, and has helped to build a tradition of cumulative knowledge across the varied disciplines where it is practiced (Orlikowski and Baroudi, 1991). Positivist studies are based on the existence of "prior fixed relationships within phenomena" which can usually be investigated with structured means (Orlikowski and Baroudi, 1991; Burrell and Morgan, 1979). Positivism underlies what is known as 'The Scientific Method', the research in the fields of biology, chemistry and physics. However, in the field of Information Systems (IS), where experimentation is not always feasible, many researchers use surveys. Forms of research questions such as "who", "what", "how many" and "how much" supports the use of survey (Yin, 1994) in this context.

5.2.4 Interpretive Paradigm

Interpretive Research focuses on the complexity of human sense making as the situation emerges (Kaplan and Maxwell, 1994). The researcher has to choose what to disclose about his/her findings, "depending upon the audience and the story they want to tell" (Klien and Myres, 1999: 78). Because of the emergent nature of the research, the most often used method is that of an in depth case study. From an IS perspective, this involves frequent visits to the research domain, or the researcher completely immersing themselves in the research domain, over an extended period of time (Walsham, 1995), in order to understand the impact of an information system in its context (adapted from: Walsham, 1993).

5.2.5 Selecting an Appropriate Paradigm

In IS research, the positivist approach had been dominant in the past (Orlikowski and Baroudi, 1991; Alavi and Carlson, 1992; Myres and Avison, 2002), while interpretive IS studies have gained popularity in recent times (Klein and Myers,

1999; Walsham, 1993). The positivist philosophy behind IS research allows the researcher to be an impartial observer of an "objective physical and social world which can be characterised and measured" (Alavi and Carlson, 1992:56). Taking a positivist approach to this research study ensures that the researcher's own values and beliefs do not influence the results. Any information taken from the data collected will reflect the Irish population's perspective on the data privacy policies of virtual companies operating in Ireland, and the researcher will remain an impartial observer.

As the main research question in this research study is to investigate the Irish perception regarding online data privacy of virtual firms, the researcher deems that interpretive research alone would not be appropriate, as generalisation (i.e. applying findings to the Irish population as a whole) is not a feature of interpretive research.

By taking this positivist approach the researcher can take advantage of the fact that the results are generalisable, that any findings uncovered from the sample population can be applied to a particular (and larger) population. By taking this approach the researcher can take a sample population of Ireland, and if the results allow, generalise this to the entire Irish population.

5.2.6 Summary

The program of research is designed to investigate a number of specific objectives surrounding the main research question:

1. To understand the Irish consumer attitude toward on-line personal information requests.

2. To establish the Irish consumer's attitude towards the disclosure of information (in terms of):

- individual comfort with disclosure of information
- Individual willingness to disclose information

3. To assess consumer attitude as to how and where this information is stored (in terms of):

- Individual comfort with how and where information is stored
- Individual awareness of how and where information is stored

4. To establish consumer knowledge as to their rights in relation to information storage and distribution.

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5.3 RESEARCH METHOD SELECTION

A research method is the strategy of inquiry the researcher uses which moves from the underlying philosophy of the research, to the research design and the data collection. All research is based on some underlying assumptions about what constitutes 'valid' research and which research methods are appropriate (Myers, 1997). This research is founded on the positivist objective approach. Taking into account the primary research question in this research study: "To investigate Irish Internet users perception of data privacy policies of virtual companies", these underlying assumptions and research methods are now discussed.

Positivist research advocates the use of quantitative data (Oates, 2006, Easterby-Smith et al., 1991), while interpretivist research advocates the use of qualitative data (Walsham, 1995; Klien and Myers, 1999). To further understand both the quantitative and qualitative approach, each is discussed below:

5.3.1 Qualitative Research

Qualitative Research methods were originally developed in Social Sciences to facilitate the study of social and cultural phenomena (Myers, 1997). Examples of the most common methods of qualitative research include action research, case study and ethnography. Data sources include participation in the setting (field work), direct observation, interviewing, analysing documents and material culture (Marshall and Rossman, 1999). As the research issue is the Irish perception of privacy, observing a range of individuals' Internet usage over a long period of time, may not produce the appropriate data required for analysis in the context of the research question.

5.3.2 Quantitative Research

Quantitative data is "the activity or operation of expressing something as a quantity or amount, e.g. numbers, graphs and formulas" (Schwandt, 2001:215). Examples of quantitative methods include laboratory experiments, numerical methods (such as

data modeling) and survey and questionnaire (or structured interview) methods (Myers and Avison, 2002).

5.3.3. Mixed Method Approach

A mixed method approach will add greater depth to the findings. Interviews will also give supplementary information, and will give a more in depth view of the world from the interviewee point of view (Krieger, 1979). Ignoring the influences of time, politics and culture in the design and use of Information Systems may result in any findings obtained in the research being incomplete. However, the value of a combined research approach overcomes the potential of incomplete data, through the process of triangulation. Data triangulation can be defined as the *"combination of methodologies in the study of the same phenomenon"* (Denzin, 1970: 297), wherein the researcher applies a number of research techniques to strengthen the legitimacy of the research results.

5.3.4. Selecting an Appropriate Approach

According to Keen (1991), the goals of the research and the researcher are the determinant factors when selecting the most suitable methodology. Qualitative methods could be used to investigate privacy perceptions of virtual firms operating in Ireland, however quantitative methods also enable the researcher to uncover the attitudes and opinions of the respondent, while also allowing for generalisabilty of the results to the Irish population. The researcher deems that a quantitative approach, in this instance, using a questionnaire, is the most suitable method to pursue this research objective.

Orlikowski and Baroudi (1991) classify IS research as positivist if there is evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and drawing of inferences about a phenomenon from a representative sample to a stated population. In the field of Information Systems (IS), where experimentation is not always feasible, many researchers use surveys (Oates, 2006). As the research aims to quantify the Irish perception regarding online data privacy policies of Virtual

firms operating in Ireland, a survey of the attitudes and comfort levels with information disclosure, using a questionnaire, with quantifiable results for analysis is deemed to be the most appropriate path in this research study. In this research study the researcher will also conduct a pilot study incorporating detailed administration of the questionnaire in the process of developing the research instrument, as advocated by Denzin (1970) in pursuit of data triangulation.

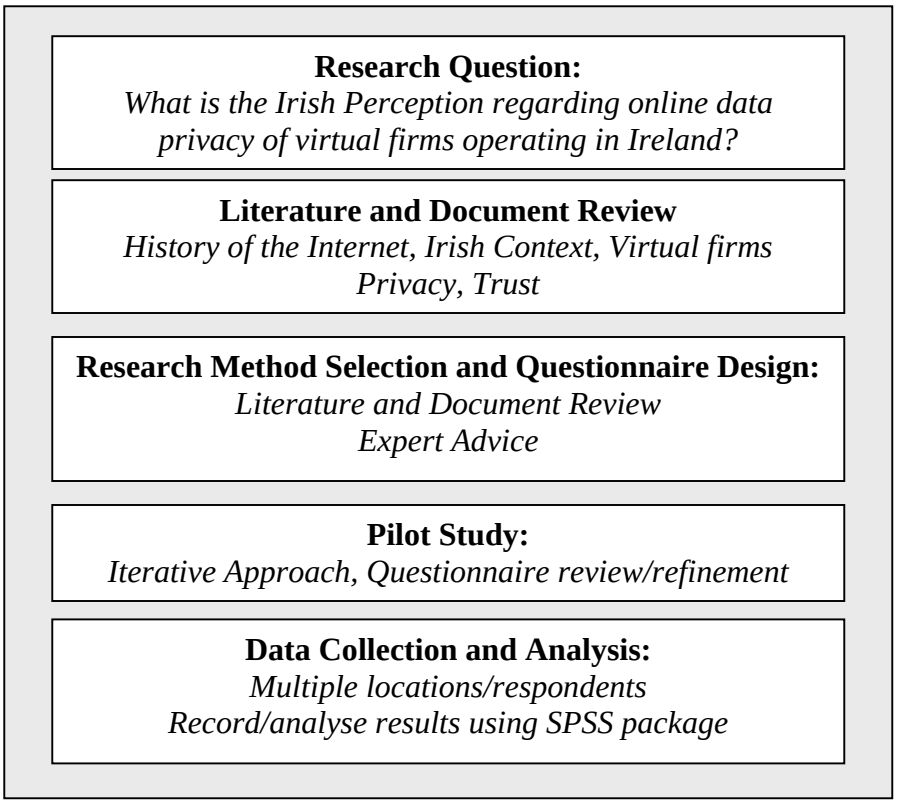
Thus, as the core research objective is to investigate Irish Internet users' perception regarding the data privacy practices of virtual companies, a positivist approach, using quantifiable data is the deemed the most appropriate for the study. A positivist approach allows for a representative sample to be selected and results and findings applied to the Irish population as a whole (as advised by: Orlikowski and Baroudi, 1991). This gives the greatest potential for insight into Irish users' perceptions in relation to privacy policy in virtual companies.

5.4 RESEARCH APPROACH

The researcher took an iterative approach to the design of the research instrument, in pursuit of triangulation (Denzin, 1970). Each step of the process is listed in Fig 5.1. Relevant literature and documentation was reviewed. From this review a pilot questionnaire was designed. This questionnaire was brought through several iterations, with advice from multiple experts. The questionnaire was piloted, and the results of the pilot study lead to small refinements to the research instrument before the final survey was conducted.

Fig 5.1

Research Map



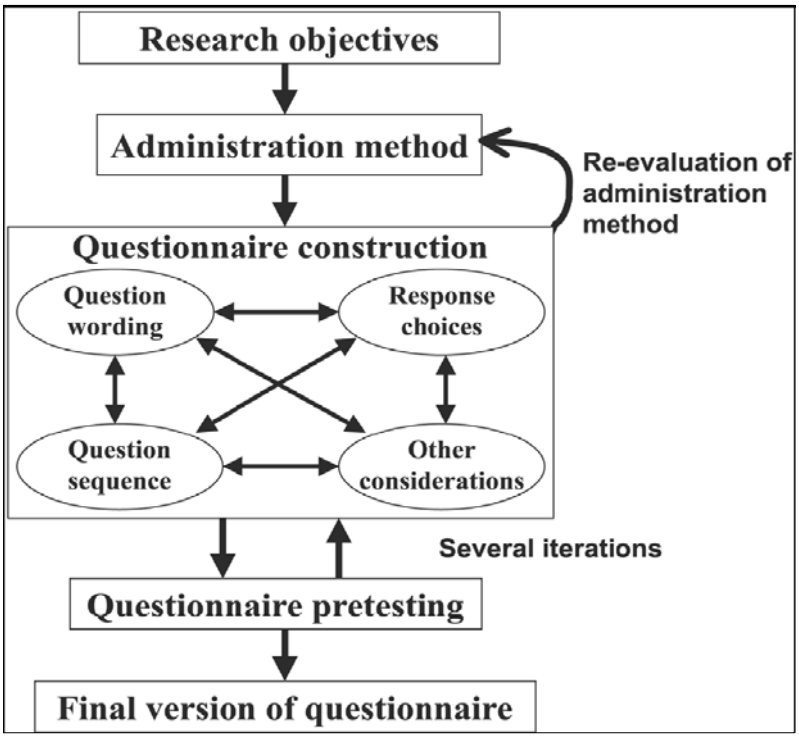
Section 5.5 details the construction of the research instrument, in order to answer the research question and objectives.

5.5 RESEARCH DESIGN

Research design is the "basic plan or strategy of the research, and the logic behind it, which will make it possible and valid to draw more general conclusions from it" (Oppenheim, 1992:6). The researcher pursued a mixed research strategy, consisting of a pilot study of the questionnaire, reviews from experts, followed by the questionnaire itself. The following section looks at the research design for this research, and the design of the questionnaire.

According to Dillman (2000) two of the most important objectives in the design of the questionnaire are to reduce non-response, and to reduce "measurement error" caused by questions left unanswered, or bias in responses because of the design. To ensure these objectives are met, the researcher worked through a construction process (Fig 5.2).

Fig 5.2
Questionnaire Construction Process



Source: Synodinos, 2003:225

5.5.1 Linking the Research Objectives to the Research Instrument

As the purpose of the questionnaire is to survey users opinions on Internet data privacy, the research objectives of the researcher were the starting point for the construction of the questionnaire. By breaking the questionnaire into sections, with each research objective, listed in section 5.1, guiding the questionnaire content, the researcher could begin to structure the questionnaire into logical steps. The research instrument was designed with seven sections as detailed below:

- Section 1: General Internet usage:

  This section gathered information about the amount of time respondents spent on the Internet, what they used it for, and purchasing habits. This gave an over view of the respondents Internet experience, to enable the researcher to compare this experience to their opinions and views on privacy.

- Section 2: Consumer Interaction with virtual firms:

  This section examined if the respondent used virtual firms. Three widely recognised virtual firms in Ireland were selected as examples for section two, Ryanair, Ticketmaster and Amazon. This section also looked into the importance of website features while using virtual firms. These features included privacy policies and procedures and policies.

- Section 3: Attitude toward online information requests:

  The purpose of section three was to understand the attitude the respondent has when asked for personal information while online, and if it differs when the information is linked to the purchase transaction, or not linked to the transaction. This section relates to research Question 1: *To understand the Irish consumer attitude toward on-line personal information requests.*

- Section 4: Comfort with information disclosure

  This section examined how comfortable the respondent was with disclosing different types of personal information to an online company. This section relates to research question two:

  - *To establish the Irish consumer's attitude towards disclosure of information (in terms of):*
    - *Individual comfort with disclosure of information*
    - *Individual willingness to disclose information*

- Section 5: Company Collection, storage and privacy policies

  This section assessed awareness of how and where information gathered by online companies is used and stored. This section also assessed awareness of terms and phrases used in relation to online privacy, and opinions on privacy policies on websites. This section relates to research questions three and four:

  - Question 3: *To assess consumer attitude as to how and where this information is stored (in terms of):*
    - *Individual comfort with how and where information is stored*
    - *Individual awareness of how and where information is stored*

  - Question 4: *To establish consumer knowledge as to their rights in relation to information storage and distribution.*

- Section 6: Non Internet Users

  This section assesses those respondents who do not use the Internet. It is important to include this section in the questionnaire, as otherwise those who do not use the Internet could not participate in the survey, leaving a potential legitimacy issue with the eventual survey results.

- Section 7: Demographic information

This section records the respondents' demographic information.

5.5.2 Questionnaire Construction

As shown in Figure 5.2 above, the steps within the construction of the questionnaire need to be considered individually, but how each of these steps influence each other needs to be given careful consideration in the construction process. Sections 5.5.2.1 to 5.5.2.3 discuss this in detail.

5.5.2.1 Sequencing

As the questionnaire is a sequence of questions, to be answered one after the other, the order of the questions, and of the sections they appear in, is of great importance. The context in which a question appears and its position in the sequence of the questionnaire can have a direct affect on how the question is answered, or if it is even answered (Schuman and Presser, 1996; Peterson, 2000). According to Dillman (2000), by beginning the questionnaire with questions that relate to the topic, the respondent's expectations about the questionnaire are met. This increases the likelihood of the questionnaire being completed, as the respondent is at ease from the beginning. By beginning the questionnaire with questions about general use of the Internet and websites the respondent uses, the researcher hopes to ensure the questionnaires are completed by each respondent. General questions about website layouts and content lead into more specific questions, again to put the respondent at ease. Personal, or sensitive questions (such as age or income), are left to the end of the questionnaire. As these demographic questions are asked after the respondent has filled in the questionnaire it is less likely that they will lead the respondent to abandon the questionnaire, and can be seen as less objectionable in light of other questions previously answered (Oppenheim, 1992; Wilson, 1996; Synodinos 2003).

5.5.2.2 Question Wording

Respondents' answers can be influenced by the wording of the questions. Questions need to be brief, relevant, clear, concise and unambiguous (Fink, 1995; Schuman and Presser, 1996; Dillman, 2000). According to Peterson (2000) general considerations for constructing questions should be:

- Common sense: using proper grammar, not using double negatives, being aware of your audience, and taking the delivery of the questionnaire (postal/telephone/face-to-face) into account.

- Knowledge: to be aware of techniques and methods.

- Experience: to construct the questions in steps and administer them in a pilot study, and to be able to refine them as many times as is necessary. By careful construction and input from experts in the field, the researcher aims to construct questions which do not adversely influence the respondent.

5.5.2.3 Response Choices

Response choices can be closed ended or open ended. A closed ended question gives the respondent a list of possible responses, an open ended question gives no possible responses, the respondent must fill in their own response (Oppenheim, 1992).

Closed ended questions can be factual (e.g Have you used the Internet? Yes/No) attitudinal (e.g. How satisfied are you with this website? Very satisfied, satisfied, neither satisfied or dissatisfied, unsatisfied, very dissatisfied) and demographic (information about the respondent for analysis, e.g. age, gender, income) (adapted from Oppenheim, 1992; Gillham, 2005). Closed ended questions should provide responses that are exhaustive and mutually exclusive, with a "don't know" or "other" response choice given (Wilson, 1996; Synodinos 2003). There is a loss of spontaneous responses with closed ended questions; however the ease of

answering for the respondent, and the ease of processing for the researcher make up for this (Oppenheim, 1992; Bourque and Fielder, 1995).

Open ended questions can be used as a follow up question to a closed ended question, to elaborate or explain the answer to the closed ended question, for example, for the question "It bothers me when an online company request personal information (1 = Never, 5 = Always)" the respondent is also given the option to comment in addition to circling their answer. However open ended questions tend to have a higher refusal rate, and answers to them can be vague (Peterson, 2000). According to Synodinos (2003), although they are the more difficult to construct, closed ended questions are usually the most appropriate response choice, and for this survey instrument the researcher mainly used closed ended questions. In this survey, open ended questions were used in a small number of cases, to expand a response to a closed ended question.

5.5.3 Questionnaire pre-testing

One of the most important aspects of the design and implementation of the questionnaire is piloting. By testing and retesting the questionnaire on a subset of the population, the design can be improved and reliability and validity can be tightened (Easterby-Smith et al., 1991; Oppenheim, 1992). Piloting can test key issues such as the correctness of the research method and chosen delivery of that method. It can also help to examine the tone and content of the questions themselves, down to the general layout of the questionnaire, with issues such as font size, space between questions and colours used all playing a vital role in the success of the exercise (Sarantakos, 2005). The researcher took an iterative approach, refining the questionnaire and carefully considering the data collection approach at each step. During this phase the researcher consulted with an expert statistician (Dr Jim Stack, WIT) and a further expert in quantitative research methods (Dr Mary Holden, WIT) in addition to the research supervisors to ensure the validity of the research instrument. Full details of the pilot process adopted in this research study can be found under section 5.7.1 of this chapter.

5.5.4 Final Version

The research design, incorporating appropriate question wording, sequence, and response choices have a positive effect on the response rate (Dillman, 2000). By keeping the questionnaire structured and logical, it is easier to complete, and this can help the response rate and keep the respondent interested in answering the questionnaire (Dillman, 2000; McNeill and Chapman, 2005).

The appropriate data collection approach also has an effect on the results as the population sample is influenced by the data collection approach taken. The research design and collection approach have an influence on each other, and when considering one the other must be taken into account (Oppenheim, 1992). Each point has been taken into account in the development of the research instrument in this research study. A copy of the questionnaire can be found under Appendix III.

5.5.5 *Summary*

The researcher used the research question (*What is the Irish perception regarding online data privacy of virtual firms operating in Ireland?)* and incumbent research objectives as a basis to design the questionnaire into logical steps. By breaking each objective into a set of questions, these questions could be answered by the respondent in a logical manner. Thus, the questionnaire construction process is vital in pursuit of legitimate survey results.

The next section discusses the data collection approach for questionnaires, and the most appropriate approach for this research is selected, based on the established research question and objectives.

5.6 DATA COLLECTION APPROACH

As the research instrument is being designed the data collection approach is considered, as shown in Figure 5.2.

5.6.1 Alternative Data Collection Methods

The delivery of the questionnaire has an impact on the results. Each different method of delivery: Postal, Telephone, Face-to-Face, and via Internet, has its own advantages and disadvantages. In this section each will be discussed, and the most appropriate method chosen in the context of the research objectives.

5.6.1.1 Postal questionnaires:

The questionnaire is sent through the post to the respondent, who fills it out themselves. Respondents are asked to read questions, and respond to them by ticking a box, or circling their answer (closed-ended), or by writing their answer themselves (open-ended). As the respondent is as such unfamiliar with the questionnaire until they receive it, it needs careful attention in its layout and design (Bourque and Fielder, 1995). Postal questionnaires provide a large amount of data on attitudes, beliefs, values and history in a relatively short period of time, and at a low cost (Robson 2002; Wilson, 1996). The questionnaire can reach a larger population, as respondents can be approached more easily than other methods (Sarantakos, 2005). As the researcher is not present any bias in responses is greatly minimised, compared to face-to-face or telephone interviewing (Oppenheim, 1992). Anonymity is possible for the respondent, which can lead to more open responses when dealing with sensitive issues (Robson, 2002). The questionnaire can be completed at the respondents' convenience, unlike telephone or face-to-face methods (Sarantakos, 2005).

One of the main problems associated with postal questionnaires is the typically low response rate, unless the topic is of interest to the respondent, or viewed as being of direct value to the respondent. A response rate of well below 40% can usually be expected (Robson, 2002; Wilson, 1996; Oppenheim, 1992). Because of

this low response rate, the representativeness of the sample can be difficult to assess, as there is little or no information on those who did not respond (Robson, 2002). The sample can be drawn from the electoral register, which excludes those who have not registered to vote, and those who have moved. Any samples taken from the national census can also be out of date, as the census is conducted every five years (Oppenheim, 1992). There is no control over who actually fills in the questionnaire, it may not be the required respondent, or the respondent may consult other people or family members, making completing the questionnaire a group effort. Also the respondent may not take the questionnaire seriously, and there may be no way of detecting this (Sarantakos, 2005; Wilson, 1996). While there are advantages with respect to reducing bias, the non-presence of the researcher can have negative effects. There is no opportunity to clarify questions, offer help, or correct any misunderstandings that may arise. This could result in incomplete answers, or unanswered questions in the questionnaire (Robson, 2002).

The poor response rates and the difficulty of assessing the representativeness of the sample were major disadvantages when compared to other methods of data collection in this context. Considering the structure and content of the questionnaire, and the underlying research question, the researcher found this method of data collection was unlikely to achieve the required response rate.

5.6.1.2 Telephone Survey:

The respondent is contacted via telephone, is asked the questions, and the interviewer fills in the responses. Different methods can be used to select the respondent: Random Digit Dialling (RDD), where a computer randomly selects phone numbers, Computerised Postcode Address File (PAF), where a phone number is selected from an existing set of records, or by randomly selecting numbers from the most recently issued telephone directory.

The biggest advantages of using the telephone are its speed and low cost (Oppenheim, 1992). The questionnaire is completed in the phone call, there are no time delays or postage costs, and the results can be processed speedily. Relative to postal methods of delivery, the costs of posting introductory postcards, reminders, response letters are reduced, as well as the time taken to send out the questionnaire and receive responses to it. Relative to the face-to-face delivery method, cost of transport and the time taken to complete the process is greatly reduced (Oppenheim, 1992; Sarantakos, 2005; Robson, 2002). Other advantages include the reduction of bias (as ethnicity, race, appearance, and age of the interviewer are not immediately obvious as in the face-to-face method) and the easy substitution of a respondent who is not at home or unwilling to take part (Oppenheim, 1992; Sarantakos, 2005).

One of the biggest disadvantages of using the telephone is sample representativeness: the only people being surveyed are those who are a named owner of a telephone. Other disadvantages include: high refusal rate (carefully choosing time of day/non-weekend can reduce refusal rates), and, as with postal questionnaires, no way of validating completely that the respondent is the correct person (Oppenheim, 1992; Sarantakos, 2005). Also in recent years telephone survey has been widely used in market research (Wilson, 1996), this may have a negative effect as the respondent may have been asked to take part in surveys previously and may be unwilling to take part as a result.

As the purpose of this research study is to investigate the Irish perception about data privacy on the Internet, the researcher found that the limitations in the sample selection are a major disadvantage of the telephone method. The research aims to uncover the Irish population as a whole, therefore eliminating those who only use mobile phones, those who do not use landline phones, and those who are not listed in the telephone directory would make generalising results inappropriate. The costs of this method are relatively similar to those of postal questionnaires, without the benefit of a wider sample of people.

5.6.1.3 Internet Survey:

The Internet is an inexpensive and fast method of conducting research by questionnaire, according to Frazer and Lawley (2000), and is also a method that ensures the ability to reach a dispersed population. However one disadvantage of this method; that it will only reach the segment of the population who use the Internet on a regular basis, and are comfortable responding to a survey from an unknown source, is a significant disadvantage for the research being undertaken. The reliability of the results obtained from using this method, despite its advantages, would be highly questionable.

5.6.1.4 Face-to-face Survey:

The interviewer asks the questions and fills in the responses, in the presence of the respondent. Conducting the questionnaire in person offers many advantages: the interviewer has control over how the questions are asked, and can clarify any issues or confusion that may arise. The presence of the interviewer has also been found to have a positive effect on the response rate (McNeill and Chapman, 2005; Robson, 2002). However the presence of the interviewer can have negative effects also. The personality, skill and experience of the interviewer can have an effect on the responses, also the perceived 'class' and appearance of the interviewer could bias the responses. Because of the high cost and long period of time it can take to complete the questionnaires (in comparison to the other methods) many researchers use a team of people to conduct the interviews. This can also have negative effects by introducing bias; the researcher has little control as to how the team of interviewers conduct the questionnaire (Oppenheim, 1992; Sarantakos, 2005; Robson, 2002). Given the research question: *What is the Irish perception regarding online data privacy of virtual firms operating in Ireland?*, the researcher has selected this method of data collection. The randomness of respondents is greatly increased, researcher bias is reduced by selecting every third person, and response rates are positively affected by applying the face-to-face approach to this research study.

5.6.2 Chosen Data Collection Method

As the research aims to investigate the Irish perception about data privacy on the Internet, the researcher has selected the face-to-face method for data collection. The sample population must include a wide sample of people, from very experienced Internet users to inexperienced Internet users, to non-users. By collecting data in a variety of cities and towns in Ireland, at different times of the week and day, the researcher is incorporating unbiased respondent selection in the data collection process. Conducting the survey via the Internet would exclude non-users and may exclude inexperienced and infrequent users, thus precluding this method in this instance. Telephone surveys would limit the researcher to those listed in the telephone directory, and would exclude those who have a mobile phone only. The low response rate of postal surveys is overcome by surveying potential respondents face-to-face and offers the opportunity to ensure a wide variety of respondents are chosen at various dates and times in multiple locations throughout the country.

5.7 THE ADMINISTRATION METHOD

In the following section the administration of the questionnaire is discussed: the pilot study, the date and location of the data collection, the target location, the target respondent and the length of completing the questionnaire.

5.7.1 Piloting the Research Instrument

As discussed in section 5.5.3, the piloting of the questionnaire is an essential step in its development. To pilot the survey the researcher selected four individuals previously unknown to her: one male and one female student, one male non-professional, and a female professional. The pilot study consisted of the administration of the questionnaire, interspersed with detailed probing to further explore the questions asked during the pilot of the questionnaire. The pilot studies were recorded and analysed, resulting in appropriate changes to the survey instrument.

5.7.2 Data Collection

By carefully selecting cities and towns of various sizes around the south east of Ireland the researcher could include a varied demographic.

Table 5.2

Data Collection Schedule

Date	Location	Completed Surveys
25 January 2007	Carrick-on-Suir	6
26 January 2007	Waterford	10
3 February 2007	New Ross	10
7 February 2007	Waterford	5
8 February 2007	New Ross	6
10 February	Kilkenny	12
17 February	Carlow	12
24 February	Tipperary Town	9
26 February	Waterford	7
28 February	Kilkenny	6

Bias from the researcher was reduced by employing quasi-random sampling, choosing (in this case) every third person. By selecting different times of day and different days of the week (e.g. weekend versus weekday; mornings versus afternoons) the researcher ensured the sample consisted of a wide range of people.

5.7.3 The Target Respondent

The aim of the research is to understand the Irish perspective of data privacy in virtual firms. Therefore the sample population had to be representative of the population of Ireland. By randomly stopping people on the street, the researcher built a sample of people in each location. Researcher bias was reduced by using quasi-random sampling, choosing (in this case) every third person.

5.7.4 The Target Location

The researcher chose to select a sample from the south-east of Ireland, whose counties consist of: Kilkenny, Waterford, Wexford, Carlow and Tipperary (see Table 5.2, section 5.7.2: data collection schedule, for details). By selecting cities,

towns and small towns representative of each county, a sample population consisting of people from each of these counties was collected.

5.7.5 Length of Questionnaire

As discussed in section 5.5, the design of the questionnaire was an important factor in the administration. It took on average 10 minutes to complete the questionnaire with the respondent, and each respondent answered the questionnaire in full.

5.8 LEGITIMACY: RELIABILITY, VALIDITYAND GENERALISABILITY

The following section discusses the reliability, validity and generalisabilty of the research.

5.8.1 Reliability

Reliability refers to "the capacity of measurement to produce consistent results" (Sarantakos, 2005:88). If the instrument, in this case a questionnaire, is administered to the same person, on two different occasions will it yield the same result? If the questionnaire is reliable then it should (Easterby-Smith et al., 1991). By piloting the questionnaire and presenting the respondents with identical, standardised sets of questions, the reliability of the resulting responses are greatly increased (Fink, 1995; Wilson 1996; Robson, 2002).

According to Sarantakos (2005) there are 3 types of reliability:

- Stability Reliability: how reliable the findings are when the instrument is applied at different points in time. The researcher achieved this by collecting data at different times of the week, and at different times of the day, for example on weekend and weekday mornings and afternoons.

- Representative Reliability: how reliable the instrument is when applied across different groups. The researcher carried out the research across the south-east of Ireland, in cities, and towns, and also selected every third person. The results of this sample population will be applied to the Irish population.

- Equivalence Reliability: how reliable are the findings across different instruments. The researcher carried out a pilot test, consisting of detailed administration of the questionnaire. At this stage in the research process,

the questionnaire was also reviewed by two experts in addition to the researcher supervisors to ensure reliability of the research instrument.

5.8.2 Validity

Validity refers to whether the research instrument "measures what it is supposed to measure, and whether this measurement is accurate and precise" (Sarantakos, 2005:83). According to Robson (2002) and McEwan and McEwan (2003) validity can be broken into Internal and External Validity:

- Internal Validity: focuses on the research design, and making sure the information from respondents is what they think, feel, and do. This is achieved by ensuring the questions in a questionnaire are unambiguous, concise and to the point. As discussed in section 5.5.2 the questionnaire content: question wording, response choices, and question sequence was designed in an iterative process. As discussed in section 5.7.2, the data collection method was explored in detail, with expert's input at each stage of the research process.

- External Validity: focuses the relationship between the research study and its outcome, when applied outside the immediate environment of the research study. To achieve external validity, research must produce similar results when carried out across different settings, methods and respondents. By conducting the survey with a variety of respondents in a variety of locations at various times, external validity is addressed in this research study.

5.8.3 Generalisabilty

Generalisabilty refers to the extent to which the findings of the enquiry are more generally applicable outside the specifics of the situation studied: a conclusion about a whole group (in this case the Irish population) can be drawn from this particular study (Denscombe, 2002; Robson, 2004).

According to Denscombe (2002:141), generalisabilty is important for two reasons:

- Empirically: that the characteristics of the respondents or data studied is representative of the broader group being studied, or has the same characteristics.

- Theory Development: that the generalisations made from data collected can lead to the development of theories that are widely applicable. The respondents and data sample depend on their suitability for producing, testing or developing theories.

By applying the survey instrument in a variety of locations across the south-east the researcher aimed to ensure any findings from the research can be generalised to the Irish population as a whole.

5.9 DATA ANALYSIS

In the following section details how the data obtained from the administration of the questionnaire was recorded and prepared for analysis.

The researcher recorded the dates, times and places where surveys were carried out. This enabled the researcher to keep track of location response rates.

5.9.1 Data Analysis Tool

The statistical software package SPSS (Statistical Package for the Social Sciences) was used to analyse the collected data. This package allowed the researcher to break up the data into 112 variables. Once the data was entered into SPSS a fellow researcher checked the data, to ensure it was inputted correctly.

The SPSS package allowed the researcher to carry out a range of data analysis: crosstabs, frequencies, bivariate correlations and descriptive techniques. The results of this analysis can be viewed in chapter six, in the form of tables, pie charts and histograms.

5.10 SUMMARY

This chapter has looked in detail at the research method. The philosophy behind research is explored, and the research methods behind those philosophies. This lead the researcher to select questionnaires as a research method appropriate to her research philosophy, and the research question being explored. The design and administration of this research method was then explored in this context.

The next chapter reports on the findings uncovered by the analysis of the data obtained in the administration of the questionnaire.

CHAPTER SIX:

FINDINGS AND

MULTI-VARIABLE ANALYSIS

6.0 INTRODUCTION

The purpose of this chapter is to present the findings of the survey instrument. Section 6.1 looks at the findings of the pilot study. Section 6.2 shows respondents basic demographic details. Section 6.3 looks at factors affecting Internet use. Section 6.4 looks at purchasing goods/services online. Section 6.5 explores the respondents' interaction with virtual firms. Section 6.6 looks at respondents attitudes towards personal information requests. Section 6.7 looks at company collection, storage and privacy policies. Section 6.8 shows more in depth analysis of some of the findings of the previous sections. Every statistic from Section 6.3 to Section 6.8 relates to respondents who have used the Internet. Details of the demographic profile of the respondents, and their general Internet usage can be found in Appendices IV to VI.

6.1 PILOT STUDY FINDINGS

The findings of the pilot study were added to the research instrument, and therefore the main findings, as the research instrument was adjusted according to the pilot study findings. A copy of the finalised questionnaire can be found under Appendix III.

There were four participants in the pilot study: respondents A, B, C and D. Respondents A and D were a self employed male between the age of 36 and 45, and a professional female aged between 26 and 35. Respondents B and C were both students: one male and one female, both were aged between 18 and 25. The pilot study consisted of a detailed face-to-face administration of the questionnaire.

The key findings to come from the pilot study were as follows:

- Ranking in question 6 was abandoned, as this added too much time to the completion of the questionnaire. This lead the researcher to ask the respondents of the main study to select as many purposes as they wished for going online, without ranking them.

- Question 15 included the sub question “Website is interactive”. This was removed after the pilot study as:
    - Respondents B and C did not know what this meant, which lengthened the time taken to conduct the questionnaire as it had to be explained.
    - The researcher decided that this element had already been answered by the sub questions “Personal Details are remembered” and “Website has email/phone number in case of problems”.

- Respondent A found the questionnaire long: this helped the researcher approach how the questionnaire was conducted in terms of length of time

taken to complete, for example showing the respondents lists of answers in questions while reading them out, instead of reading the list out to the respondents only.

The findings from the pilot study were then applied to the main research instrument, the questionnaire. The questionnaire was then used to gather data, which was analysed to give the main findings for the research undertaken. These findings are set out in the following sections.

6.2 DEMOGRAPHICS

The respondents' demographic profile is shown is table 6.1. There were a total of 83 respondents. Two surveys were excluded from the analysis stage, as one was found to be incomplete, and the other respondent was under 18, and therefore excluded from this study under pre-defined criteria.

Table 6.1 Demographic Profile of Respondents

Variable		Frequency	Percent
Gender:	Female	41	50.6
	Male	40	49.4
Age:	18-25	25	30.9
	26-35	28	34.6
	36-45	13	16.0
	46-55	7	8.6
	Over 55	8	9.9
Education:	Primary School	2	2.5
	Secondary School	31	38.3
	Technical	9	11.1
	Third Level University/IT	32	39.5
	Professional	6	7.4
	Missing	1	1.2
Occupation:	Full Time	54	66.7
	Part Time	7	8.6
	Self Employed	1	1.2
	Home Maker	3	3.7
	Unemployed	2	2.5
	Student	9	11.1
	Other	5	6.2
Income:	Less than 10,999	7	8.6
	11,000-20,999	3	3.7
	21,000-25,999	14	17.3
	26,000-30,999	14	17.3
	31,000-45,999	16	19.8
	46,000-69,999	4	4.9
	Above 70,000	2	2.5
	Missing	21	25.9
Location:	City	34	42.0
	Town	28	34.6
	Village	10	12.3
	Rurally	9	11.1

49.4 % of respondents were male, 50.6 % female. This is consistent with the results of the 2006 Irish census (CSO, 2007), where 50.01% of the Irish population is male and 49.9% are female.

According to the 2002[1] Irish census, 8.3% of the Irish population are between the ages of 20-24, 30.1% are between 25 and 44, 12.2% are between 45 and 54, 5% are between 55 and 59, 3.9% are between 60 and 64, and 11.1% are 65 and over. These bands are consistent with the findings listed in Table 5.1.

A large proportion of respondents had completed third level education (39.5%) and this finding is closely followed by those who had completed secondary school, with 38.3% listing this as their highest level of education. Just 2.5% of respondents had their highest level of education as primary school. According to the Irish Census for 2002, 17.87% had completed primary school as their highest level of education, 23.45% had completed secondary school, and 12.82% had completed third level education (CSO, 2006). These figures contrast with the findings of the survey, however census figures are for those aged 15 and over. 11.1% of respondents had a technical level of education, and 7.4% professional. 1.2% of respondents did not indicate their highest level of education.

The majority of respondents were in full time employment (66.7%) while 11.1% of respondents were (full-time) students. 8.6% of respondents were in part-time employment, 3.7% of respondents were homemakers, 2.5% were unemployed, and 1.2% were self employed. Notably, 6.2% of respondents listed ‘other’ as their occupation: all of these were retired. These figures are consistent with the findings of the 2006 Irish census figures, 57.58% of the population aged 15 and over are in full-time and part-time employment. 10.94% of the population are full-time students, 15.88% are homemakers (“on home duties”), 3.42 % of the Irish population are unemployed, and 6.5% are retired (CSO, 2006)

[1] Figures from both the 2002 and 2006 census are used, as not all figures from the 2006 census are available.

25.9% of respondents did not indicate their income. Of those who completed this aspect of the survey, 19.8 % of respondents indicated an income of between €31,000 and €45,999, 8.6% of respondents indicated an income of less than €10,999 and 2.5% of respondents indicated an income above €70, 000.

A more detailed view of the demographics can be found under Appendix IX.

Factors affecting Internet use include age, education, income, occupation and location. Findings are tabulated and analysed under each of these criteria in Appendix IX. Findings indicate:

- Age negatively relates to Internet use; the older the respondent, the less likely they are to use the Internet.

- Higher education levels are likely to equate to higher Internet use.

- Income levels appear to have little effect on Internet use.

- Occupation had a significant effect on whether respondents had used the Internet.

- The respondents place of residence appears to have little impact on their Internet use.

6.3 FACTORS AFFECTING INTERNET USE

The following section looks at the factors that affect the use of the Internet, frequency of time spent on the Internet, access to the Internet, reasons for going online, and their Internet skills.

6.3.1 Internet Access

Respondents were asked to estimate time spent on the Internet in daily and weekly terms. The average time spent on the Internet by daily users (equating to 50% of respondents) was 2.3 hours with a standard deviation of 1.8. The average time spent on the Internet by weekly users (equating to 35.48% of respondents) was 2.63 hours wit a standard deviation of 1.8. A more detailed view of the Internet Access findings can be found under Appendix V

Table 6.2 Access to the Internet

Access Type	Frequency	Percent
Home Access	47	75.8
Work Access	37	59.7
School Access	0	0
College Access	9	14.5
Internet Café	2	3.2
Other	2	3.2

Respondents' mode of access to the Internet is shown in Table 6.2 Respondents could select more than one response (i.e. if they had access to the Internet at home and at work). 75.8% of respondents had access to the Internet at home. Only 59.7% had access to the Internet in their place of work. 14.5% indicated they had access at college, while 3.2% had access in an Internet café, and 3.2% also indicated "other" (one respondent indicated that other was library access). Notably, the vast majority of those surveyed (88.7%) had broadband access in this context (see Appendix V for details).

6.3.2 Frequency of Time Spent on the Internet

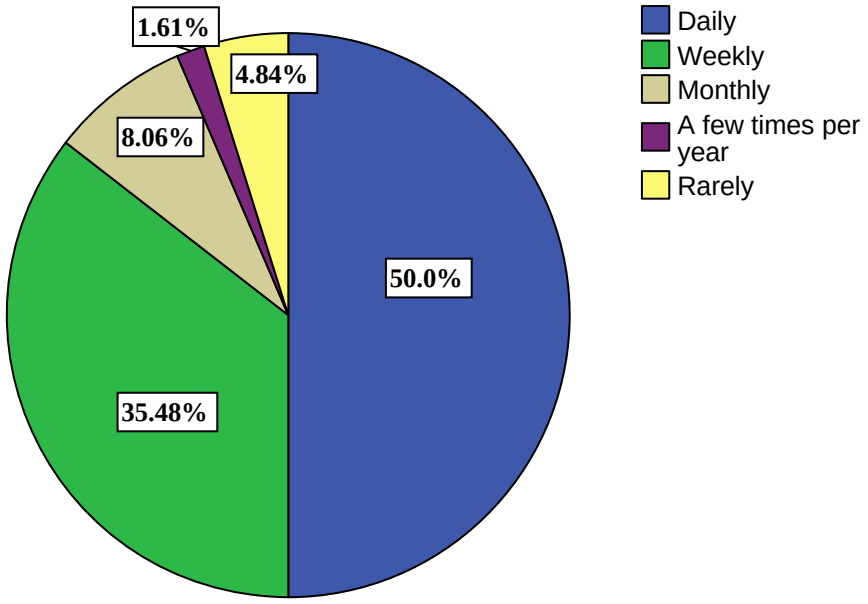
To establish Internet users experience of Internet use the respondents were asked how long they had been using the Internet for. A break down of the results are shown in Table 6.3.

Table 6.3 Time using the Internet

	Frequency	Percent
Less than 1 month	1	1.6
One month to less than 6 months	2	3.2
Six months to less than 1 year	6	9.7
One year to less than 2 years	7	11.3
2 years and over	46	74.2
Total	62	100.0

The vast majority of respondents who used the Internet had been using the Internet for two years and over (74.2 %). 11.3% had been using the Internet for one year but less than two years. 85.5% of Internet users were using the Internet daily or weekly: 50% using it daily, 35.5% using it weekly. Of the remaining 14.5 %, 8.1% used it “monthly”, 1.6% used it a “few times per year”, and 4.8% used it “rarely”.

Figure 6.1 Frequency of Internet use



6.3.3 Reasons for Going Online

Table 6.4 Reasons for using the Internet

Activity	Frequency	Percent
Email	51	82.3
Entertainment	36	58.1
Travel	32	51.6
Shopping	30	48.4
Banking	29	46.8
Sport	25	40.3
Billing	24	38.7
News	23	37.1
Downloading Free Software	19	30.6
Searching For a Job	18	29.0
Other	18	29.0

Table 6.4 displays respondents' reasons for going online. The most popular reason for going online was to use email (82.3%). The second most popular was "entertainment" with 58.1% of respondents indicating this is a reason they use the Internet. 51.6% of respondents indicated they use the Internet for "Travel", travel implying both booking travel and travel related searches. 46.8% and 38.7% use

the Internet for “banking” and “billing” respectively. This is consistent with the literature reviewed in section 2.3, where the most popular reason for going online was for email (Amas, 2006) Almost half of those respondents who use the Internet (48.4%) indicated they use the Internet for “shopping”. This is double that of the amas survey carried out in 2006 (Amas, 2006).

6.3.4 Internet Skills

Respondents were asked to agree or disagree on a scale of one to five to assess their own Internet skills.

Table 6.5 Internet Skills

	N	Mean	Standard Deviation
I am a skilled Internet user	62	3.52	1.364
I do NOT enjoy browsing the Internet	62	2.23	1.247
I am familiar with search techniques on the Internet	62	4.03	1.145
I know how to use an Internet search engine	62	4.42	.915
I am not as skilled as other Internet users	62	2.76	1.314

1 = Strongly disagree, 5 = Strongly Agree

The results are shown in Table 6.5. Respondents agreed that they were skilled Internet users, however they did not strongly agree, with an average answer of 3.52, and a standard deviation of 1.34. Respondents indicated that they enjoy browsing the Internet. Respondents agree that they are familiar with search techniques on the Internet with an average answer of 4.03.Respondents are confident they know how to use an Internet search engine, with the average answer of 4.4, and a standard deviation of just 0.9. Respondents feel their Internet skills are equal to those of their peers. However the average answer of 2.76 and a standard deviation of 1.3 indicates that this is not true across all of the respondents, and that a significant percentage of users may not feel their skills are equal to those of their peers.

6.4 PURCHASING GOODS/SERVICES ONLINE

The following section looks at respondents' online shopping habits, how many have purchased online, how often the respondents purchase online, the payment methods used and presentation elements of websites.

6.4.1 Purchasing Online

Table 6.6 shows the percentages of respondents who have shopped online. 70.97% of respondents who have used the Internet have also purchased goods and services from the Internet, while the remainder (29.03%) of those who have used the Internet have not made any purchases.

Table 6.6 Percentage of respondents who have purchased from the Internet

	Frequency	Percent	Valid Percent
Not Purchased	18	29.0	29.0
Purchased	44	71.0	71.0
Total	62	100.0	100.0

Notably age impacts on on-line purchasing wherein older respondents are less likely to purchase on-line. Full details of this analysis can be found under Appendix VI.

Figure 6.2 shows the frequency of respondents purchasing online. The majority of respondents (45.5%) purchase from the Internet two/three times per year. 34.1% make purchases once per month 4.5% purchase once per week, while 2.3% (one respondent) purchased one per day. The 'per day' respondent indicated to the researcher that this purchasing was work related. 13.6% of respondents who purchase goods/services do so less than once per year.

Figure 6.2 How often goods/services are purchased

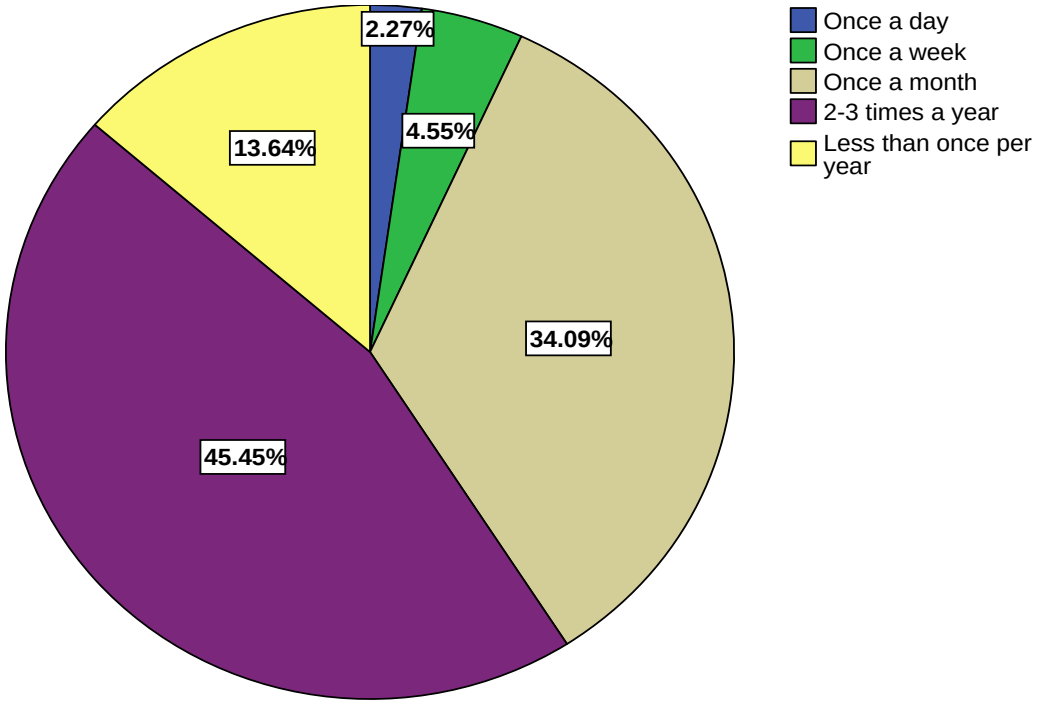


Table 6.7 shows the method of payment used by respondents. Credit cards were used by the vast majority (90.9%), while 13.6% used Paypal, and 6.8% indicated they used "other". Respondents were not limited to one answer when indicating what payment methods they used.

Table 6.7 Payment method

	Frequency	Percent	Valid Percent
Used Credit card	40	90.9	90.9
Used 3V voucher	0	0	0
Used Paypal	6	13.6	13.6
Other	3	6.8	6.8

Four of the respondents indicated they did not use a credit card. Two of those used Paypal, and two indicated they used "other". Four respondents indicated they used both credit card and Paypal, one respondent indicated they used credit card and "other" to make purchases. Tabulated data relating to payment type analysis can be found under Appendix VI.

6.4.2 Presentation Elements on Websites

Respondents were asked on a scale of one to five the level of importance they attached to the presentation elements of a website.

Table 6.8 Presentation Elements

Presentation Elements	N	Mean	Standard Deviation
Instructions easy to read	62	4.42	.759
Instructions easy to understand	62	4.48	.936
Website easy to use	62	4.53	.740
Transaction processed quickly	62	4.02	.983
Personal details remembered on return visit to website	62	2.87	1.287
Website email/phone number	62	4.16	1.119

1 = Not Important, 5 = Very Important

Respondents attached a high level of importance to the presentation elements of a website. Respondents felt it important that the website's instructions be easy to read and understand, and that the site be easy to use. Respondents also placed a high level of importance in the capability of the site, that their transaction be processed quickly. Respondents attached a high level of importance to the website having a contact phone number or email address, with a mean response of 4.16, implying that even though the respondent is not carrying out the transaction in a face-to-face environment, they still require the trust element contact with the website. The only presentation element that respondents did not feel was important was the "Personal details remembered on a return visit to website" implying that respondents did not feel a website needed to store their personal details to ensure ease of use while using that website more than once.

6.5 INTERACTION WITH VIRTUAL FIRMS

The following section looks at three virtual firms: Ryanair, Ticketmaster and Amazon. The main aim of this section is to look at respondents' familiarity with these virtual firms, if they have purchased from them, and their satisfaction with using them.

6.5.1 Familiarity with and use of Selected Virtual Firms

This section looks at respondent's familiarity with Ryanair, Ticketmaster and Amazon, and their usage of them. Table 6.9 displays respondents' familiarity with the three virtual firms. Respondents were asked to rank their familiarity on a scale of one to five, where 1 was unfamiliar, and 5 was very familiar.

Table 6.9 Familiarity with selected websites

		Familiar Ryanair	Familiar Amazon	Familiar Ticketmaster
N	**Valid**	62	62	62
	Non-Response	0	0	0
Mean		4.35	3.03	3.26
Std. Deviation		1.118	1.609	1.514

1 = Unfamiliar, 5 = Very Familiar

Respondents were most familiar with Ryanair, with a mean response of 4.35. 64.5% of the respondents selected "5", or "Very Familiar" as a response. Just 6.5% selected "1", "Unfamiliar". This familiarity with Ryanair could correspond to the percentage of respondents who indicated they used the Internet for "Travel" (51.6%) as shown in Table 6.4, and also to the high level of media exposure Ryanair have had. Ticketmaster was not as familiar to respondents as Ryanair, with a mean response of 3.26. 22.6 % of respondents selected "1"as their response, while 27.4% selected "5". Respondents were least familiar with Amazon, with a mean of 3.03, and standard deviation of 1.6. 30.6% of respondents who used the Internet selected "1" as their answer, while 25.8% selected "5".

Table 6.10 displays the results of respondents' frequency of using virtual firms Ryanair, Ticketmaster and Amazon. Respondents were asked to select how frequently they used the sites, ranging from "once" to "never". These findings include all respondents, including those who have never purchased on-line, but have used the virtual firm website.

Table 6.10 Frequency of use of virtual firms

		Ryanair	Ticketmaster	Amazon
Valid	Once	14.5	12.9	6.5
	Once per year	40.3	17.7	6.5
	Once per month	12.9	8.1	16.1
	Once per week	8.1	4.8	1.6
	Never	19.4	45.2	53.2
	Total	95.2	88.7	83.9
Non response		4.8	11.3	16.1
Total		100.0	100.0	100.0

The most frequently used website was Ryanair: 8.1% of respondents used it once per week, compared to Ticketmaster and Amazon, which were used by 4.8% and 1.6% of the respondents per week respectively. 53.2% of respondents had never used Amazon, 45.2% had never used Ticketmaster, and just 19.4% had never used Ryanair.

Most of the Ryanair users (40.3% of respondents) used it once per year. 14.5% of respondents had used it just once, 12.9% of respondents used it once per month. 4.8% of respondents did not respond to this question.

Most of those who had used Ticketmaster used it once per year (17.7% of respondents) 12.9% of respondents had used it once, 8.1% of respondents had used it once per month. 11.3% of respondents did not respond to the question.

Most of those who had used Amazon (16.1% of respondents) used it once per month. 6.5% of respondents used Amazon once per year, and 6.5% of respondents used it once. 16.1% of respondents did not respond to the question.

Table 6.11 displays the Yes/No response to whether respondents had purchased goods/services from Ryanair, Ticketmaster or Amazon. 67.7% of the respondents indicated they had, 32.3% of respondents indicated they had not purchased goods/services from the three websites.

Table 6.11 Virtual Firm Purchases

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**No**	20	32.3	32.3	32.3
	Yes	42	67.7	67.7	100.0
	Total	62	100.0	100.0	

Table 6.12 shows how regularly respondents purchased goods/services from Ryanair, Ticketmaster or Amazon, or any other website they would have used. The website "other" did not have to be that of a virtual firm.

Table 6.12 Frequency of purchasing from virtual firms and other

		Ryanair	Ticketmaster	Amazon	Other
Valid	Once	7.1	2.4	0	7.1
	Once per year	64.3	35.7	14.3	11.9
	Once per month	14.3	7.1	14.3	7.1
	Once per week	0	0	0	4.8
	Total	85.7	45.2	28.6	31.0
	No purchase/non response	14.3	54.8	71.4	69.0
Total		100.0	100.0	100.0	100.0

These findings only include respondents who have purchased on-line. Respondents who purchased from Ryanair mostly purchased once per year (64.3%) 14.3% purchased once per month, and 7.1% of respondents who

purchased from the Internet purchased from Ryanair once. No respondent purchased from Ryanair once per week. 14.3% of respondents had not made a purchase from Ryanair.

54.8% of those who purchased from the Internet did not purchase from Ticketmaster. 35.7% of those who purchased from the Internet indicated they purchased from Ticketmaster once per year. 7.1% purchased from Ticketmaster once per month, and 2.4% said they had made one purchase from Ticketmaster. No respondent made purchases from Ticketmaster once per week.

Amazon was the least purchased from virtual firm, with 71.4% of respondents indicating they had not purchased from this firm. Of those respondents who had purchased from Amazon, 14.3% indicated they purchased from Amazon once per year, and 14.3% indicated they purchased from Amazon once per month. No respondent purchased weekly from Amazon, or used Amazon once only.

Section 6.5.2 Site Features Impact on Satisfaction using Virtual Firms

This section looks at user satisfaction with the virtual firms they used, and how site features on the website impacted their level of satisfaction with their transaction. Table 6.13 displays the level of satisfaction respondents had with the sites they had used. Respondents were asked to rate their level of satisfaction with the site they had purchased from, with a rating from one to five, where "1" was very unsatisfied and "5" was very satisfied.

Table 6.13 Satisfaction with site

		Satisfaction Ryanair	Satisfaction Ticketmaster	Satisfaction Amazon	Satisfaction Other
N	Purchased	39	21	15	20
	Non purchase	23	41	47	42
Mean		4.44	4.14	4.40	4.95
Std. Deviation		1.119	1.153	1.121	.224

Overall the level of satisfaction for all sites was quite high. Of the three virtual firms Ryanair, Ticketmaster and Amazon, respondents were most satisfied with

Ryanair, with an average rating of 4.44, and a standard deviation of 1.119. Amazon also had a very high rating of satisfaction, with an average response of 4.40, and standard deviation of 1.121. Ticketmaster had an average response of 4.14, with a standard deviation of 1.153. Respondents who purchased from other sites had an average satisfaction rating of 4.95, with a standard deviation of just 0.224.

Table 6.14 lists the site features that could influence satisfaction while using the site. Respondents were asked to rate how important the features were in adding to their satisfaction/dissatisfaction while using websites, on a scale of one to five where "1" was Not Important and "5" was Very important.

Table 6.14 Features impact on satisfaction with site

Site Features	N	Missing	Mean	Standard Deviation
Information on procedures and policies easy to find	58	4	3.86	1.083
Recognisable icons/logos	58	4	3.38	1.182
Website easy to use	58	4	4.43	.775
Purpose of information collection clearly stated	57	5	4.02	.954
Website has privacy seal of approval	58	4	2.93	1.461
Website storing preferences/details for a return visit	57	5	2.81	1.202
Other	9	53	3.56	1.590

As expected the website being easy to use was an important factor in the satisfaction/dissatisfaction with using a website, with and average answer of 4.43. Respondents indicated that the purpose of information collection being clearly stated was an important factor in adding to their satisfaction/dissatisfaction when using a website, with an average of 4.02. This is consistent with the virtual firm service quality dimensions as outlined by Chen and Tan (2004) in the literature review. However information on procedures and policies being easy to find, and

the presence of a privacy seal of approval were not rated as being as important, with average responses of 3.86 and 2.93 respectively. Recognisable icons and logos did not have an impact on the satisfaction/dissatisfaction of using a website, with a mean response of 3.38. Website storing preferences and details for return visits were not important to respondents' satisfaction/dissatisfaction while using websites, with a mean response of 2.81. These finding are in contrast to the service quality dimensions set out in section 3.2.1 of the literature review, indicating that some of the dimensions have more of an impact on respondents' satisfaction than others.

Table 6.15 shows the respondents willingness to use the websites again. Respondents were asked on a scale of one to five would they use the site again, with "1" meaning "Never", and "5" meaning "Definitely".

Table 6.15 Use website again

		Ryanair	Ticketmaster	Amazon	Other
N	Valid	46	29	23	22
	Non-user	16	33	39	40
Mean		4.63	4.28	4.04	4.45
Std. Deviation		.951	1.162	1.261	1.101

The overall response was positive for all websites, with mean responses of over 4 for the three virtual firms listed in the survey, and for any other website the respondent had used.

6.6 PERSONAL INFORMATION REQUESTS

The following section looks at respondents' attitudes towards online personal information requests. Respondents were asked if they had given information when not online, and their attitude depending on the context in which the information is being asked. Respondents were also asked their willingness to disclose different types of personal information.

6.6.1 Attitude to general information requests

Figure 6.3 Information given when not online

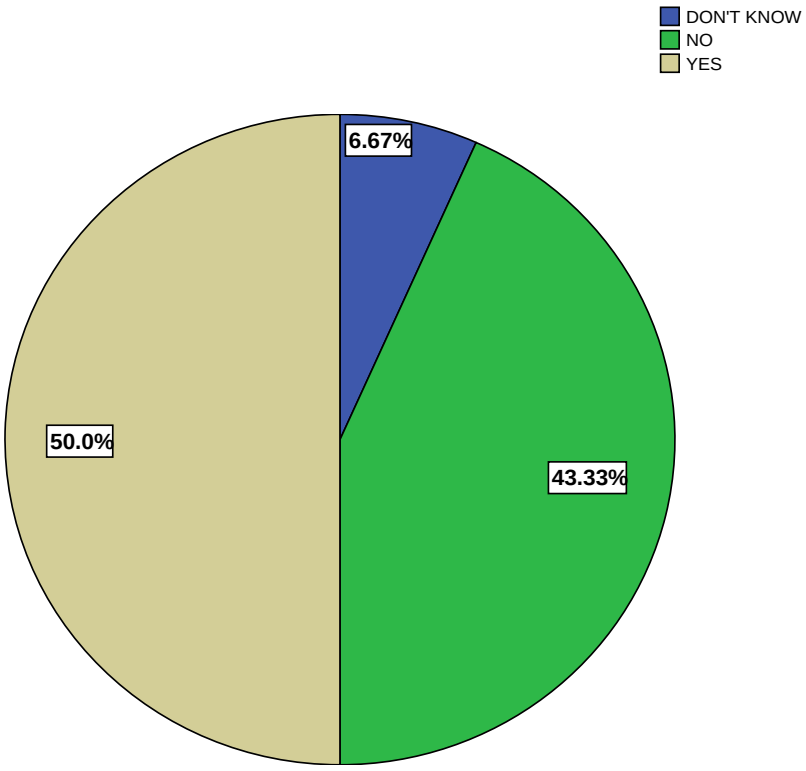


Figure 6.3 shows the percentage of respondents who have given their information when not online, for example through using a shop loyalty card, or through entering competitions. There were 2 non-responses. Of the others, 50% have given personal information when offline, while 43.33% indicate they have not. 6.67% say they do not know if they have or not.

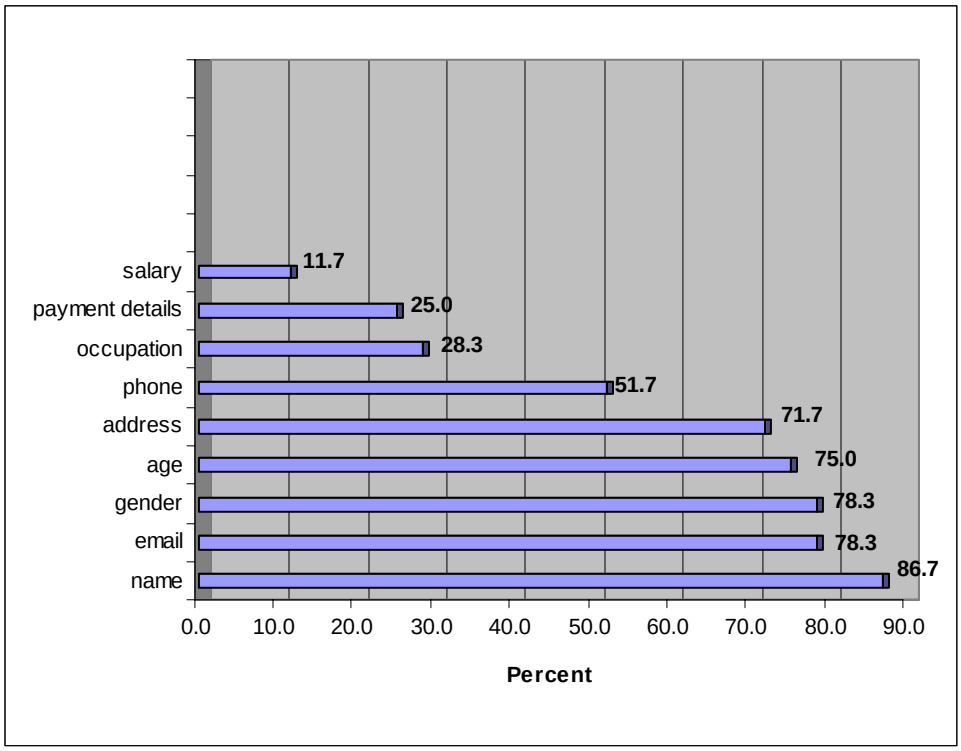
Table 6.16 displays peoples' attitudes when asked for personal information online. Respondents agreed that an online company needed their information to process a transaction, with an average response of 3.92. Corresponding to this answer, respondents were not concerned by online company requests for personal information, with an average response of 2.93. However respondents were concerned by information requests when the request was not linked to any purchase transaction, with an average answer of 4.45.

Table 6.16 Attitudes towards Requests

	Valid N	Missing	Mean	Standard Deviation
An online company needs my personal information to process my transaction (1 = Unnecessary, 5 = Necessary)	60	2	3.92	1.253
It bothers me when an online company request personal information (1 = Never, 5 = Always)	60	2	2.93	1.260
It bothers me when an online company request personal information not linked to my purchase/transaction (1 = Never, 5 = Always)	60	2	4.45	1.016

Respondents were then asked to indicate their comfort levels with providing specified personal information to an online company, on a scale of one to five, with "1" meaning "Very Uncomfortable" and "5" meaning "Very Comfortable". Figure 6.4 shows the percentage of respondents who selected "4" (Comfortable) or "5" (Very Comfortable) for each type of personal information: name, address, telephone/mobile phone number, email address, payment details, age, gender, salary, and occupation. 3.2% of the respondents who use the Internet did not respond to this question.

Figure 6.4 Comfort levels with Information Disclosure



Of those respondents who did indicate their comfort levels for information requests, 86.7% of them were comfortable providing their name. 78.3% were comfortable providing their gender. 78.3% were comfortable providing their email address, compared to 71.7%, who were comfortable providing their postal address. This is in contrast to the findings of Cranor et al. (1999), where 54% of respondents were comfortable providing their name, 76% of respondents were comfortable providing their email address, however just 44% were comfortable providing their postal address. This anomaly may be due to the researcher specifying disclosing information to an online company, as opposed to "Web sites" as specified in the Cranor (1999) study. This could also be a factor with providing their phone number, 51.7% of respondents were comfortable with providing their phone number, compared to just 11% in the Cranor study.

Just 25% of respondents indicated they were comfortable disclosing their payment details to an online company, this is in stark contrast to the results displayed in

Table 6.16, where respondents agreed that an online company needed their details to process their transaction, with a mean response of 3.92, and indicated they were not overly concerned when an online company requested personal information, with a mean response of 2.93. Considering Table 6.6; Section 6.4.1, 71% of those who have used the Internet have made purchases on the Internet, this implies that while respondents are uncomfortable disclosing their payment details as 90.9% of respondents indicating they use credit cards to buy online, they are still willing to do so to shop online.

As found in the Cranor et al. (1999) study, where 17% of respondents were comfortable disclosing their income in this study, just 11.7% of respondents were comfortable disclosing their income, while just 28.3% were comfortable disclosing their occupation.

6.7 COMPANY COLLECTION, STORAGE AND PRIVACY POLICIES

This section assessed respondents' awareness of how and where information gathered by virtual companies is stored. It also explores respondents' interaction and awareness of privacy policies, and phrases/terms used when discussing Internet privacy.

6.7.1 Awareness of Information Use

Respondents were asked on a scale of one to five, how much they agreed with a set of seven statements about Information collection, storage and use, with "1" meaning "Strongly Disagree", and "5" meaning "Strongly Agree". Results are shown in table 6.17.

Table 6.17 Information use

	N	Missing	Mean	Std. Deviation
All Information is private when using an online company	59	3	3.46	1.330
Online companies use my information indefinitely after the transaction	59	3	3.37	1.425
Online companies require user permission to use the information after the transaction	59	3	4.22	1.018
Online companies must disclose use of my information	59	3	3.61	1.414
I am satisfied that an online company will protect my data	59	3	3.29	1.301
An online company can use my personal information with my permission	58	4	4.12	1.061
An online company can sell my personal information to a third party with my permission	59	3	3.66	1.397

Respondents indicated that they agreed that all information is private when using an online company, with a mean answer of 3.46, and just 25.8% of respondents

selecting 1 or 2 for their answer. Respondents also indicated that they are satisfied that an online company will protect their data, with an average response of 3.29 for this question. 42% of the respondents to this question selected either 4 or 5 for their response. These findings contrast to responses given in previous questions, as shown in Table 6.16, where respondents indicated they were not concerned by online companies requesting personal information, and in Figure 6.4, where respondents were uncomfortable disclosing certain information. This implies that respondents have other fears when disclosing data online, other than privacy of information.

Respondents indicated that they agreed online companies must disclose use of their information, with an average response of 3.61, and 74.2% of the respondents selected either 4 or 5 for their response. Respondents also strongly agreed that online companies require user permission to use information after the transaction, and that online companies can use personal information with user permission, with average responses of 4.22 and 4.12 respectively. Respondents also agreed with the statement that online companies could use information indefinitely after the transaction, with an average response of 3.37. Respondents also agreed with the statement that an online company could sell personal information to a third party, with user permission, with an average response of 3.66.

6.7.2 Privacy Awareness

Respondents were asked to rate how familiar they were with phrases/terms that are used when discussing Internet privacy. These included the "Data Protection Act" and "Privacy policies", computer terms: "Cookies" and "Log Files", and seal programs: TRUSTe, and a fictional seal program PriVC, to use as a test for other answers. Respondents were asked on a scale of one to five, how familiar they were with these terms/phrases, with "1" meaning "Not Familiar", and "5" meaning "Very Familiar". The results of this are shown in Table 6.18.

Table 6.18 Familiarity with terms/phrases

	N	Missing	Mean	Std. Deviation
Privacy Policy	60	2	3.67	1.323
Cookies	60	2	2.73	1.635
TRUSTe	59	3	1.22	.721
Log Files	59	3	1.75	1.372
PriVC	59	3	1.14	.472
Data Protection Act	60	2	3.28	1.552

Respondents indicated they were familiar with the terms/phrases privacy policy and the Data Protection Act, with average responses of 3.67 and 3.28 respectively. However, 24.2% of respondents answered "1" or "Not Familiar" for the Data Protection Act, which indicates that almost one quarter of respondents while expressing that they agree with statements listed in table 6.17 on information use, they are unaware of laws and acts which govern the use of their information.

Respondents were either familiar or unfamiliar with cookies, giving an average response of 2.73, 43.5% responding either "4" or "5", but worryingly 48.4% responded with either "1" or "2", being unfamiliar with the phrase. When asked about Log Files respondents indicated they were not familiar with the phrase itself, with an average response of just 1.75.

Respondents were not familiar with seal programs. When asked their familiarity with TRUSTe the average response was 1.22, with a standard deviation of just 0.721. This lack of familiarity is compounded by the fictional PriVC findings with an average response was 1.14, with a standard deviation of just 0.472. In essence, "familiarity" in relation to the actual (TRUSTe) and fictional (PriVC) seal programs suggest respondents who claim familiarity may not actually have this experience.

Table 6.19 Read Privacy Policy

		Frequency	Percent
Valid	Don't Know	3	4.8
	No	39	62.9
	Yes	19	30.6
	Total	61	98.4
	Non Response	1	1.6
Total		62	100.0

Respondents were asked to indicate if they had read a privacy policy. As shown in Table 6.19, just 30.6% of respondents who used the Internet had read a privacy policy, which is quite worrying considering the confidence in privacy of information respondents had shown in previous questions. Notably, results shown in Table 6.10, show that users are unfamiliar with many aspects of Internet privacy, so the low percentage of respondents who use the Internet and have read a privacy policy is not so surprising in this context.

Table 6.20 Privacy Policy Details

	N	Missing	Mean	Std. Deviation
Privacy Policy easy to find	17	2	4.24	1.033
Privacy Policy easy to read	17	2	2.94	1.249
Privacy Policy easy to understand	17	3	2.94	1.345
Privacy Policy short and to the point	17	3	1.82	1.015
Privacy Policy answered questions respondent had	17	3	3.06	1.088
Always read privacy policy before using a website	17	2	1.76	1.033

The 30.6% of Internet users (equating to 19 respondents) who had read a privacy policy were asked to agree or disagree with the statements listed in table 6.20, on a scale of 1 to 5, with "1" meaning "Strongly Disagree" and "5" meaning "Strongly Agree". There was a 10.5% non response (2 out of 19 respondents who use the Internet and have read a privacy policy declined to answer this question). Results are shown in Table 6.20.

Results for privacy policy awareness in general were not encouraging. Respondents indicated that while they felt the privacy policy was easy to find, with an average response of 4.24, they did not agree that they always read a privacy policy before using a website, with an average response of just 1.76. Respondents also indicated that the layout and cohesiveness of privacy policies they had read were not good. When asked if the privacy policies were easy to read, and easy to understand, the average responses were 2.94 for each statement. When asked if the policies were short and to the point the average response was just 1.82. Surprisingly, when respondents were asked if the privacy policies answered any questions they had, the average response was 3.06, indicating that for half of the respondents, the policy did answer their questions, but for the other half of respondents it did not. This is perhaps an indication as to why respondents do not read privacy policies, as they are found to be not easy to read, or understand, and not short or to the point, leading respondents to use websites and disclose information without any knowledge of the site's privacy policies.

6.8 MULTI-VARIABLE ANALYSIS

This section aims to analyse the results of the previous sections in more depth, using two or more variables. When analysing demographic data the researcher used formal statistical tests on data for Age, Gender and Location only, due to sparseness of data in some sections for Education, Occupation and Income.

6.8.1 Demographic Effects on Internet Use

Table 6.21 Age * Used Internet

			Used Internet		Total
			No	Yes	
Age	18-25	Count	1	24	25
		% within Age	4.0%	96.0%	100.0%
	26-35	Count	2	26	28
		% within Age	7.1%	92.9%	100.0%
	36-45	Count	3	10	13
		% within Age	23.1%	76.9%	100.0%
	46-55	Count	7	0	7
		% within Age	100.0%	.0%	100.0%
	over 55	Count	6	2	8
		% within Age	75.0%	25.0%	100.0%
Total		Count	19	62	81
		% within Age	23.5%	76.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	44.102(a)	4	.000
Likelihood Ratio	42.398	4	.000
N of Valid Cases	81		

Table 6.21 shows Internet usage by Age group. The Pearson Chi-Square in this case is equal to 44.1 with df = 4, P < .001. There is clear sample evidence that Internet usage is therefore related to age, as discussed in section 6.2

Table 6.22 Gender * Used Internet

			Used Internet		Total
			No	Yes	
Gender	Female	Count	8	33	41
		% within Gender	19.5%	80.5%	100.0%
	Male	Count	11	29	40
		% within Gender	27.5%	72.5%	100.0%
Total		Count	19	62	81
		% within Gender	23.5%	76.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.720(b)	1	.396
Continuity Correction(a)	.343	1	.558
Likelihood Ratio	.722	1	.396
Fisher's Exact Test			
N of Valid Cases	81		

Table 6.22 shows Internet usage by Gender. The Pearson Chi-Square in this case is equal to .720 with df = 1 and P = .396. There is no sample evidence that Internet usage is related to gender.

Table 6.23 Location * Used Internet

			Used Internet		Total
			No	Yes	
Location	City	Count	6	28	34
		% within Location	17.6%	82.4%	100.0%
	Town	Count	8	20	28
		% within Location	28.6%	71.4%	100.0%
	Village	Count	3	7	10
		% within Location	30.0%	70.0%	100.0%
	Rural	Count	2	7	9
		% within Location	22.2%	77.8%	100.0%
Total		Count	19	62	81
		% within Location	23.5%	76.5%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.293(a)	3	.731
Likelihood Ratio	1.304	3	.728
N of Valid Cases	81		

Table 6.23 shows Internet usage by Location. The Pearson Chi-Square in this case is equal to 1.29 with df = 3 and P = .731. There is no sample evidence that Internet usage is related to location.

6.8.2 Awareness of how information is used and stored

This section explores information usage and storage policies of online companies, and the tools available to Internet users to make themselves aware of these policies: Laws such as the Data Protection Act (1998, 2003) and virtual firms' Privacy policies. Table 6.24 lists the statement about information use and storage. The responses that were given to these statements were then tested against the respondents' knowledge about the Data Protection Act, and the respondents' knowledge and prior use of Privacy Policies.

Table 6.24 Statements about Information storage and use

	Statements about what happens to Information when using online company
A	**All Information is private when using an online company**
B	**Online companies use my information indefinitely after the transaction**
C	**Online companies require user permission to use the information after the transaction**
D	**Online companies must disclose use of my information**
E	**I am satisfied that an online company will protect my data**
F	**An online company can use my personal information with my permission**
G	**An online company can sell my personal information to a third party with my permission**

Table 6.25 Knowledge of Data Protection Act * Knowledge about Information Storage and Use

		Statements about what happens to Information when using an online company						
Data Protection Act		**A**	**B**	**C**	**D**	**E**	**F**	**G**
1 = Not familiar	Mean	3.43	3.64	4.21	4.00	3.14	4.43	4.07
	N	14	14	14	14	14	14	14
	Std. Deviation	1.453	1.216	.975	1.177	1.351	.756	1.141
2	Mean	3.50	3.25	3.75	3.25	3.50	4.25	3.75
	N	4	4	4	4	4	4	4
	Std. Deviation	1.915	1.708	1.893	2.062	1.915	.957	1.893
3	Mean	3.50	3.17	3.67	3.00	3.00	3.33	3.00
	N	6	6	6	6	6	6	6
	Std. Deviation	1.049	1.169	1.211	1.549	1.265	1.366	1.095
4	Mean	3.47	3.37	4.05	3.47	3.32	3.89	3.68
	N	19	19	19	19	19	18	19
	Std. Deviation	1.307	1.342	.970	1.172	1.204	1.023	1.157
5 = Very Familiar	Mean	3.44	3.25	4.75	3.75	3.44	4.38	3.50
	N	16	16	16	16	16	16	16
	Std. Deviation	1.365	1.807	.577	1.693	1.365	1.147	1.826
P-Value (ANOVA)		1.00	.946	.108	.610	.944	.175	.608

Table 6.25 displays respondents' level of familiarity with the Data Protection Act (1998, 2003) compared to their awareness of how and where information gathered by online companies is used and stored. Worryingly, respondents' level of familiarity with the term/phrase Data Protection Act appears to have little impact on their knowledge about what happens to their information once they have disclosed it, as shown by the P values, all of which are greater than .05. This corresponds with the findings of Gurau and Serban (2003), who found that Internet users have little awareness of how companies use their information, and have little knowledge about laws and regulations in existence to regulate the storage and use of their information.

Table 6.26 Read a Privacy Policy * Knowledge about Information Storage and Use

		Statements about what happens to Information when using an online company						
Read a Privacy Policy		A	B	C	D	E	F	G
Don't Know	Mean	4.50	2.00	4.00	2.50	3.50	4.00	3.00
	N	2	2	2	2	2	2	2
	Std. Deviation	.707	1.414	1.414	2.121	2.121	1.414	.000
No	Mean	3.58	3.26	4.32	3.89	3.39	4.16	3.66
	N	38	38	38	38	38	37	38
	Std. Deviation	1.388	1.408	.842	1.226	1.264	1.041	1.457
Yes	Mean	3.11	3.74	4.05	3.16	3.05	4.05	3.74
	N	19	19	19	19	19	19	19
	Std. Deviation	1.197	1.408	1.311	1.608	1.353	1.129	1.368
Total	Mean	3.46	3.37	4.22	3.61	3.29	4.12	3.66
	N	59	59	59	59	59	58	59
	Std. Deviation	1.330	1.425	1.018	1.414	1.301	1.061	1.397
P-Value (ANOVA)		.241	.192	.632	.093	.636	.925	.783

Respondents' awareness of how virtual companies' use and store information gathered about them while using the Internet is not affected by their prior knowledge of privacy policies, as shown in Table 6.26. All P values are higher than .05. This is consistent with research discussed in section 4.2 and of the literature review where respondents who had read a privacy policy indicated they were not easy to understand, and were not short or to the point as per Lawton (2001) and Pollach (2006). The respondents also indicated they did not always read a privacy policy before using a website, reinforcing the findings of Turner and Dasgutpa (2003).

6.8.3 Effect of Usage on Comfort

This section looks at the impact of respondents Internet experience on their comfort levels when disclosing information. The length of time respondents have been using the Internet, and the amount of time spent online is explored.

Table 6.27 displays length of time respondents have been using the Internet, against three statements:

- R: An online company needs my personal information to process my transaction (1 = Unnecessary, 5 = Necessary).
- S: It bothers me when an online company request personal information (1 = Never, 5 = Always).
- T: It bothers me when an online company request personal information not linked to my purchase/transaction (1 = Never, 5 = Always).

For statistical measurement purposes (due to sparseness of data) the responses for "less than one month", "one month to less than six months", and "six months to less than one year" have been amalgamated into "Less than one month to less than one year".

Table 6.27 Time used * Attitude toward online personal information requests

Time in Use		R	S	T
Less than 1 month to less than one year	Mean	3.22	2.33	3.78
	N	9	9	9
	Std. Deviation	1.787	1.414	1.641
One year to less than 2 years	Mean	3.86	3.43	5.00
	N	7	7	7
	Std. Deviation	1.345	1.512	.000
2 years and over	Mean	4.07	2.98	4.50
	N	44	44	44
	Std. Deviation	1.087	1.171	.876
Total	N	60	60	60
	Std. Deviation	1.253	1.260	1.016
P-Value (ANOVA)		.182	.207	.045

The results shown in Table 6.27 are consistent with the literature as discussed in section 4.3.1 (Key elements in on-line trust). While respondents who had used the Internet for 2 years and over agreed that an online company needs personal information to process the transaction (Statement R), as Internet usage experience reduced, so did the level of agreement. However when asked whether "it bothers

me when an online company request personal information" (Statement S), level of Internet experience did not impact results, with those who had used the Internet least, and those who had used it the most expressing similar opinion that they were not concerned by an online company requesting personal information. Conversely, inexperienced Internet users indicated they were not as concerned by personal information requests not linked to their transaction (Statement T) as experienced Internet users, as shown by the P value, which is < .05, at .045.

Table 6.28 Frequency of Use * Attitude toward online personal information requests

Frequency of Use		R	S	T
Daily	Mean	4.07	3.10	4.40
	N	30	30	30
	Std. Deviation	1.285	1.125	.968
Weekly	Mean	4.00	3.05	4.77
	N	22	22	22
	Std. Deviation	.816	1.290	.528
Monthly/few times per year/rarely	Mean	3.13	2.00	3.75
	N	8	8	8
	Std. Deviation	1.885	1.414	1.753
Total	Mean	3.92	2.93	4.45
	N	60	60	60
	Std. Deviation	1.253	1.260	1.016
P-Value (ANOVA)		.156	.077	.045

The same inconsistencies in levels of trust shown in Table 6.27 are also present in Table 6.28. This is consistent with section 4.3.1 of the literature review. Respondents who use the Internet frequently, and respondents who use the Internet monthly/few times per year/rarely agree it is necessary for an online company to use their personal information to process their transaction, and indicate it does not bother them that they are asked for their information (Statements R and S). However levels of agreement drop as Internet usage frequency drops. Again as shown by a P value = .045, infrequent Internet users are not as concerned by information requests not relating to the purchase as more frequent Internet users (Statement T).

6.9 CONCLUSION

This chapter has presented the findings and multi-variable analysis of the research instrument. The following chapter presents a discussion of these findings in relation to the research objectives set out in chapter one.

CHAPTER SEVEN

DISCUSSION

7.0 INTRODUCTION

The chapter presents a discussion of the findings set out in chapter six, in accordance with the research objectives. These are:

1. To understand the Irish consumer attitude toward on-line personal information requests.

2. To establish the Irish consumer's attitude towards the disclosure of information (in terms of):

- individual comfort with disclosure information
- Individual willingness to disclose information

3. To assess consumer attitude as to how and where this information is stored (in terms of):

- Individual comfort with how and where information is stored
- Individual awareness of how and where information is stored

4. To establish consumer knowledge as to their rights in relation to information storage and distribution.

The following chapter discusses each objective in detail, in the context of the literature review, and the findings.

7.1 INTERNET USE IN IRELAND

Internet usage and virtual firm activity in Ireland has been explored in the context of this research study. According to the literature (Amas 2006b; CSO, 2005), Internet usage in Ireland is rising rapidly, from 5% of households having Internet access in 1998 to 45.1% in 2005 (CSO, 2005). 75.8% of respondents for this study indicated they had access to the Internet at home suggesting that Irish Internet usage has continued to rise exponentially in recent years. Age was found to impact Internet usage (Table 6.21) in this regard.

The results for this study show, that email is the most popular reason for going online, a finding supported by Kolzow and Pinero (2001) and Amas (2006b), in the literature review. As discussed in section 3.1.2, research has shown that the majority of Internet users began to use the Internet for communications purposes; just 2% originally went online to shop (Kolzow and Pinero, 2001). This implies that as users become more confident with the Internet their online activities increase.

While initial online shopping figures were low (a finding consistent with the numerous studies outlined in section 2.4.3, chapter 2), Amas (2006a) reports that 587,000 Irish people bought online in 2005 equating to 14% of the population (figure 2.3). The results of this study show that 71% of those who used the Internet had shopped online, and 91% of those had used a credit card to do so, again indicating a significant rise in on-line purchasing in recent years.

Considering the findings in this research study, as supported by the literature, it is clear that as Internet access and use has increased in Ireland, so to has online commercial activity. With the advent of the Internet as a shopping medium, consumer awareness of, and attitude toward virtual firm activity, particularly in relation to on-line personal information requests and virtual firm privacy policy is a worthy research study.

7.2 ATTITUDE TOWARDS ONLINE PERSONAL INFORMATION REQUESTS

The findings for this study show that as Internet experience and use for commercial transactions increases, consumer concern with non-related requests for information increase.

The first research objective sought to "understand the Irish consumer attitude toward online personal information requests". Section 3.3.1 of the literature suggests that Internet users are unaware of the sophisticated methods virtual companies employ to process and store information inputted by the user when requested (Kruck et al., 2002; Graeff and Harmon, 2002; Gurau and Serban, 2003). The results obtained from this study support this view for Irish Internet users, as those surveyed are not familiar with the terms/phrases associated with information storage, such as cookies and logfiles. Results also show that users believe all information is private when using an online company, supporting the findings of Paine (2006), and that they are satisfied an online company requires the user's permission to use the information after the transaction. According to the Data Protection Act (2003) user consent is required to if information is made available to a third party, however there is evidence of unethical behaviour in this regard (Gurau and Serban, 2003; Pollach, 2006).

While respondents agreed that an online company needed personal information to process transactions, this was in contrast to the findings of Cranor (1998) who found that many website operators found it easier to automatically collect data rather than reconfigure a server not to collect data. Respondents indicated they were not concerned by requests for personal information again in contrast to the findings of Cranor (1998), Kruck et al. (2002), and Hoffman (1999), where users expressed concerns about disclosing personal information when requested by a website. Results of this study found that there was concern when information requests were not linked to the transaction, and the type of information requested had an effect on their comfort levels, as supported by the literature (Cranor, 1998;

Foxman and Kilcoyne, 2003). Users were comfortable disclosing their name, email address, gender and age, and uncomfortable providing details of their salary and occupation supporting the findings of Cranor (1999). Despite the agreement that personal information was needed to process transactions, there was a notable discomfort with providing payment details. Despite this finding there is still a large percentage of the surveyed Internet users who have shopped online (70.97%) and therefore have disclosed their personal payment details. This reinforces Ranganathan and Ganapathy (2001) findings, who found that security concerns came before privacy concerns when predicting online shopping behaviour. Shih (2004) also found that security concerns did not impact on the consumers' willingness to shop online, however they were a concern in the delivery and payment phases. This implies that respondents were more concerned with security of their financial information than privacy issues with their financial information in the transaction, consistent with the findings of this research study.

Respondents' level of Internet experience was found to have an effect on their comfort level when personal information requests were not linked to their online transaction. As discussed in section 6.8.3 respondents who had more than one year's experience using the Internet indicated that it always concerned them to be asked for personal information when this information was not linked to the transaction. Respondents with less Internet experience (less than one month to less than one year) were not as concerned by the request for information not linked to the transaction. This finding links experience to on-line behaviour, consistent with the findings of Pollach (2006).

The frequency of respondents Internet use also affected attitudes towards information requests. As discussed in section 6.8.3 respondents who used the Internet daily or weekly indicated it bothered them that an online company would request information not linked to the transaction. However, respondents who indicated they used the Internet monthly/few times per year/rarely were not as concerned by the request for information not linked to the transaction.

Findings for levels of Internet experience, and frequency of Internet use corresponds to findings by Lee and Moray (1992) where in users who do not have a lot of Internet experience will trust a system if it provides speed and ease of use, thus the users limited technical knowledge does not inhibit their use, and they trust the system as a result. These findings also correspond with the conflicting findings of Corbitt et al. (2003), where levels of trust were positively impacted by experience, and users are willing to disclose information requested, and also where levels of trust were negatively impacted by experience due to security and privacy fears.

The findings for this study have found that the attitude towards information requests is dependant on the information being linked to the transaction, and the levels of experience of the user. The next section discusses attitudes towards information disclosure.

7.3 IRISH CONSUMERS ATTITUDE TOWARD INFORMATION DISCLOSURE

The second research objective sought to assess consumers' attitudes toward information disclosure, in terms of willingness to disclose information and their comfort with information disclosure.

7.3.1 Irish Consumers Willingness to Disclose Information

As discussed in the literature, the success of virtual firms is reliant on the willingness of consumers to disclose their personal information (Corriator et al., 2003; Chen & Rea, 2004). In this research, findings indicate that the majority of respondents who purchased online shopped on a regular basis: 45.5% were shopping online 2-3 times per year, while 34.09% were shopping online once per month. Notably, respondents who made purchases from all three virtual firms featured in the study (Ryanair, Ticketmaster, Amazon), indicated there were very satisfied with each site, and were strongly in favour of using each site again, with a mean response of over four in each case. These findings indicate Irish consumers are willing to disclose personal details to a virtual firm (supporting the findings of Bhattacherjee, 2002), and that user familiarity with the virtual firm is a significant indicator of a user's willingness to disclose personal information to that firm (as per: Corriatore et al.'s 2003 research outcomes).

Literature suggests that perceived service quality is vital to the success of virtual firms (Chen and Tan, 2004), and respondents in this research study reinforced this view by indicating that service quality was important when interacting with virtual firms. This study offers further insight into Chen and Tan's (2004) virtual firm service quality dimensions identified in section 3.2.1 (tangibles, reliability, responsiveness, assurance and empathy):

- **Tangibles:** Service quality of tangibles (the physical facilities provided by the virtual firm) did have a high level of importance for respondents when

shopping online, supporting the findings of Song and Zahedi (2005) and De Wulf et al. (2006).

- **Reliability and Responsiveness:** Reliability (the timeliness of the virtual store and how dependable the delivery is) was important to respondents when interacting with virtual firms. Respondents attached a high level of importance in the transaction being processed quickly. Virtual firm responsiveness (the speed at which the virtual store helps customers and email responses to queries and problems) was also important to respondents. Furthermore, the presence of an email address/phone number in case of problems with the transaction increased user comfort, corresponding with the findings of Lee (2002).

- **Empathy:** The service quality of empathy (individualised attention) did not impact respondents, who indicated it was not important to them when using unspecified websites, or when using the three specified virtual firms of this study, Ryanair, Ticketmaster and Amazon.

- **Assurance:** (The ability to create trust and confidence), was also of importance to respondents. Assurances of purpose of information collection being clearly stated was an important factor for respondents in terms of their satisfaction with the virtual firms they used, a finding supported by Gurau and Serban (2003) and Pollach (2006). However in this research study the website having a privacy seal of approval was not felt to be as highly important to the respondents, corresponding with the findings of Turner and Dasgutpa (2003). This is further confirmed by the fact that respondents indicated they have not heard of the privacy seal TRUSTe, and are equally unaware of the fictional privacy seal PriVC.

These elements play a role in the use of websites and consumer satisfaction, and contribute to Irish consumers' willingness to disclose information, specifically

reliability, responsiveness, tangibles and general assurances have a direct impact on willingness to disclose information, while empathy and a privacy seal of approval are less important in this context.

7.3.2 Individual Comfort with Disclosure

According to the literature, Internet users' level of trust is impacted by their technical knowledge, presentation elements and company reputation (Chen and Rea, 2004). If the user trusts the website and/or virtual firm, they are more likely to be comfortable disclosing their personal information on the firm's website (Jarvenpaa and Tractinsky, 1999; Corbitt, 2003; Kim and Prabhakar, 2004). This objective sought to investigate the elements which increase an individual's comfort in disclosing their personal information to a website.

User Technical Knowledge

In this research 74.2% of the respondents had been using the Internet for two years and over, with 50% of respondents using the Internet daily, and 35.48% of them using it weekly. Thus the majority of the respondents are long time Internet users, who use the Internet very frequently. As shown in section 6.3.4, the respondents indicated they felt confident using the Internet, agreeing that they were skilled Internet users who enjoyed browsing the Internet. There was an average response of over four (on a scale of one to five) for both familiarity with search techniques while using the Internet, and that their skills were on a par with those of their peers. These findings indicate that respondents have confidence in their technical skills and that this skill contributes to individual comfort with disclosure, reinforcing to the findings of Malhotra et al. (2004) in the literature review.

Presentation Elements

Respondents indicated that they placed a high level of importance on instructions on websites being easy to read and understand, and that their transaction was processed quickly. The importance of the website being easy to use was also

strongly agreed with, for any website the respondent used, and for the three virtual firms selected for this study: Ryanair, Ticketmaster and Amazon. Presentation elements of a website can also increase the users' confidence in their technical skills, thus user friendly presentation elements add to user comfort when interacting with a website, and disclosing their personal information, as discussed by Lee and Moray (1992), Huizinigh (2000) and Song and Zahedi (2005).

Company Reputation

Findings by Teo et al. (2004) state that there is a relationship between a company's reputation and the online user's comfort and willingness to disclose their personal information. Milne and Culnan (2004: 16) go on to state that the presence of a privacy policy on a website could enhance the reputation of a company as a privacy policy "provides consumers with information about the organisations' information practices". However the findings of this study suggest that the presence of a privacy policy has little effect on the comfort and willingness to disclose personal information, as 71% of respondents who used the Internet had shopped online, and just 30.6% had read a privacy policy.

Privacy Policy Value

It is argued in the literature (Milne and Culnan, 2004; Pollach, 2006) that the presence of a privacy policy can have a positive impact on a users comfort with disclosure of personal information. However, as discussed in section 4.2 many users do not read privacy policies (Lawton, 2001; Turner and Dasgutpa 2003). In this study respondents indicated that they were aware of the phrase "privacy policy, however just 30.6% of respondents had read a privacy policy. Those who had indicated they had read such policies indicated they did not always read a privacy policy before using a website which implies that even those who have read a privacy policy are not familiar with the privacy policy of each website they interact with, or disclose their personal information to.

Those who do read privacy policies find them verbose and difficult to read, or that they lack information, as supported by findings, for example Lawton (2001), and Pollach (2006). Results obtained in this study confirmed this with respondents indicating that while they found the privacy policy easy to find (with an average response of 4.24 when asked on a scale of one to five), they did not find it easy to read, or easy to understand, with an average response of 2.94. There was strong disagreement when asked if the privacy policy was short and to the point, with an average response of just 1.82. These findings indicate that the presence of a privacy policy on a website does not impact on the users' comfort with disclosing personal information, as users do not read privacy policies as a rule, and for those who do, their lack of user friendliness does not provide the user with useable information.

These elements play a role in an individuals comfort with information disclosure, specifically user technical knowledge and presentation elements have a direct impact on individual comfort with information disclosure, while company reputation and a privacy seal of approval are less important in this context.

7.4 CONSUMER ATTITUDE TO HOW AND WHERE INFORMATION IS STORED

The third objective sought to assess consumer attitude to how and where information is stored, in terms of consumer awareness and consumer comfort.

The literature states that consumers have little awareness of how and where personal information gathered during transactions is stored. Indifference, not knowing how to protect their information, and not needing to protect their information are cited as reasons for this lack of awareness (Gurau and Serban, 2003). Respondents to this study showed indifference toward privacy policies as a means of awareness about information privacy, with just 30.6% having read a privacy policy, despite the high percentage (71%) who indicated they shopped online. There was also evidence that respondents did not know how to protect their information, with respondents unaware of the phrases TRUSTe, cookies and log files (consistent with the findings of Turner and Dasgutpa, 2003). Respondents also indicated they agreed that all information was private when using an online company, indicating that they perceived that they did not need to protect their information. As discussed in section 3.5.3, many users equate privacy concerns with security issues such as viruses and hackers, and are unaware of information privacy issues (Paine et al., 2007).

Respondents in this study were comfortable that online companies required user permission to use information after the transaction, and that online companies must disclose use of the users' personal information. This comfort suggests that there is a consistent lack of awareness as to what happens with their information once they have disclosed it. Despite these beliefs the respondents agreed that online companies can use their information indefinitely after the transaction, implying that respondents are aware of companies keeping their information in storage for a long time after their transaction is finished. The exponential rise in Internet usage and the increasing rates of shopping online in Ireland suggest that

consumers are comfortable to disclose their information to carry out these activities, and are unaware of exactly how companies store their information for use at the time of transaction, or at a later date, as discussed by Phelps et al. (2000); Caudill and Murphy (2000) and Chen and Rea (2004) among others.

Respondents in this study were unfamiliar with the term/phrase cookies with an average response of 2.73 when asked on a scale of one to five, and even less familiar with the term/phrase log file, with an average response of just 1.75. This implies that not only is there a lack of awareness about the privacy of user disclosed personal information, there is a lack of awareness of data capturing and storage technologies of users' browsing information. This is a worrying trend as Internet use grows, as the combination of inputted information and information collected from user browsing activities can be amalgamated to profile users in many different ways, as found by Graeff and Harmon (2002) and Gurau and Serban (2003).

7.5 CONSUMER KNOWLEDGE AS TO THEIR RIGHTS IN RELATION TO INFORMATION STORAGE AND DISTRIBUTION

The fourth objective sought to establish consumer knowledge as to their rights in relation to information storage and distribution. The literature has stated that Internet users can be unaware of just how much companies can manipulate and use their information (Turner and Dasgutpa 2003; Caudill and Murphy, 2000). Despite Privacy Policies, the Data Protection Act and other laws and legislation regarding the collection storage and manipulation of user information, companies have admitted to information handling practices which compromise user privacy, and have acted in ways which show they sell and share data with third parties, as discussed by Gurau and Serban (2003) and Pollach (2006).

Results of this study indicate that respondents have heard the terms/phrases Privacy Policy, with a mean response of 3.67 when asked on a scale of one to five, and Data Protection Act, with a mean response of 3.28. However when more closely examined, respondents were confident their information was private (whether they have heard of the Data Protection Act or not) when using an online company with a mean response of 3.46. Respondents also believed that user permission was needed to use their information after the transaction, with a mean response of 4.22, and that user permission was also needed to sell their information to a third party with a mean response of 3.66. Respondents were also satisfied that an online company would protect their data, with an average response of 3.29, regardless of their knowledge of the Data Protection Act. These findings concur with those of Graeff and Harmon (2002) and Kruck et al., (2002), who found that the public can be unaware of how their information can be used and manipulated, and how data can be connected with offline data and used to build detailed profiles of Internet users.

As discussed in section 6.7.2, the majority of respondents (62.9%) had not read a privacy policy, and the 30.6% who had read one indicated they did not always

read a website's privacy policy before using it. As with the Data Protection Act, knowledge of a privacy policy did not affect user confidence in the storage and usage of personal information collected by online companies. Respondents had similar levels of confidence that their information was private when using an online company and this confidence was not affected by the respondents having read a privacy policy.

Despite agreeing that online companies use their information indefinitely after the transaction, respondents were also comfortable that user permission was needed to use their information after the transaction, and to sell their information to a third party. The literature has shown that companies will admit to practices that do not protect Internet users' privacy (Pollach, 2006) and that companies will treat users' information as an asset to be sold (Gurau and Serban, 2003). Therefore, there is little to suggest that on-line companies approach to information privacy will necessarily equate to user expectations in this regard.

7.6 CONCLUSION

This chapter has discussed the major findings to come out of this research in the context of the literature.

In chapter eight, conclusions are presented about the research in general, the limitations faced within this research are identified, and areas of future research in this research domain are identified.

CHAPTER EIGHT:

CONCLUSIONS AND

DIRECTIONS FOR FURTHER RESEARCH

8.0 INTRODUCTION

Chapter seven interpreted the results obtained from the field research and discussed them in the context of the reviewed literature.

This chapter presents broad conclusions about Irish Internet users' perception regarding the data privacy policies of virtual firms operating in Ireland. The remainder of this chapter provides a summary of research findings, key contributions, and the limitations faced by the researcher when carrying out the study. Directions for further research are also identified.

8.1 SUMMARY OF THE RESEARCH FINDINGS

The findings of this research indicated that Internet usage is high, with over 80% of respondents using the Internet daily or weekly. Age was an important factor affecting Internet use, the older the respondent, the likelihood they used the Internet decreased. The majority of Internet users (71%) have shopped online, and a large number of those use virtual firms on a regular basis. Specifically 67.7% of the respondents had purchased from the virtual firms selected for this study, Ryanair, Ticketmaster and Amazon. Those who had used each site indicated they were satisfied, and would be willing to use the site in the future with mean responses of over four when asked on a scale of one to five.

Respondents were not concerned by requests for personal information by an online company when shopping online, with a mean response of 2.93, when asked on a scale of one to five. However respondents were always concerned by personal information requests when the information was not linked to the transaction. The length of time respondents had been using the Internet, and the frequency of their Internet use had an impact on their comfort levels with the request for personal information not linked to their transaction. Those who had been using the Internet for one year to less than two years (11.3%) were bothered by the request, as were those who had been using the Internet for two years and over (74.2%). However those who had been using the Internet for less than one month to less than one year (14.5%) were not as bothered by the request. Frequent Internet users, those who used the Internet daily or weekly were more bothered by personal information requests not linked to the transaction, than those who used the Internet monthly/few times per year/rarely. Respondents privacy concerns do not appear to have an impact on the use of virtual firms however, with 67.7% of Internet users in this study having purchased from at least one.

Service quality dimensions impacted respondent willingness to disclose information specifically reliability, responsiveness tangibles and general assurances have a

direct impact on willingness to disclose information, while empathy and a privacy seal of approval are less important in this context.

Comfort levels were also affected by the exact type of personal information requested. 86% of respondents indicated they were comfortable to disclose their name, 71.7% were comfortable disclosing their address. Disclosure of email address (78.3%), gender (78.3%) and age (75%) also rated highly. Comfort levels for disclosing salary, occupation and phone number were low: 11.7%, 28.3% and 51.7% respectively. The comfort levels for disclosing payment details were quite low, as just 25% of respondents were comfortable with disclosing these details, which is surprising considering the levels of online shopping (71% have shopped online) and respondents' use of virtual firms (67.7%).

Individual comfort with information disclosure was impacted by a sites presentation elements and the virtual firm's reputation. Respondents indicated that a websites "ease of use" increased confidence when interacting with a virtual firm. Speed of transaction processing was also of importance to those surveyed.

Respondents were familiar with the terms "privacy policy" and "Data Protection Act". However just 30.6% of them had read a privacy policy. These respondents found the privacy policies they had read had been easy to find on the website, with a mean response of 4.24 when asked on a scale of one to five. However a mean response of 2.94 indicated the privacy policies were not easy to read or understand. Of those who had read a privacy policy, most indicated they did not always read one before using a website.

In terms of the storage and use of their personal information, respondents were confident that their information was private when using an online company, with a mean response of 3.46. This corresponded with their comfort levels for disclosing some of their personal details such as name, address and email address. However there was strong agreement with the statement that user permission was needed both for companies to use the information after the transaction (4.22) and for companies

to sell personal information to third parties (3.66). Respondents were also in agreement that online companies must disclose use of their personal data, with a mean response of 3.61. Despite the low comfort levels with disclosing their payment details, respondents indicated that they were satisfied an online company would protect their data, with a mean response of 3.29.

Familiarity with the Data Protection Act, relevant technical terms such as cookies and TRUSTe, and having read or not read a website's privacy policy was shown to have little impact on respondents' awareness of the storage and use of their personal information.

8.2 KEY RESEARCH CONTRIBUTIONS

The purpose of this research was to investigate Irish Internet users' perception regarding the data privacy policies of virtual firms operating in Ireland. This research makes the following practical contributions to knowledge:

- There is a lack of knowledge among the respondents as the laws and legislations that cover their personal information when they disclose it during online transactions. This is an important factor when designing input sections on websites: giving users information as to what their details will be used for.

- Respondents indicate they do not read privacy policies, and for those who do, they are difficult to read or understand. This implies that more user-friendly privacy policies could be a starting point towards helping to ease users' privacy fears.

- Respondents expressed a preference for more informative data collection practices among virtual firms. This implies that more visible policies regarding firm's collection, storage and use of personal information can contribute to user comfort when purchasing on the Internet.

8.3 RESEARCH LIMITATIONS

There have been a number of factors that have limited this research:

- The researcher had a timeframe of 22 months to complete this research project. This presented the researcher with a limited time frame in which to conduct the research and analyse the results. If additional time had been available the researcher could have interviewed many more people in many different regions, and a more in depth study could have been achieved.

- This research was confined to the population of the South-East of Ireland only, due to time and financial constraints. It is therefore difficult to establish whether these results are applicable to different regions of the country.

- The limited time frame had an impact on the scope of the study, surveying companies themselves was not feasible in the context of the research objectives, therefore virtual firms input about their privacy polices and practices is not included in this research.

- As the researcher randomly stopped individuals on the street, there was no opportunity to observe their Internet activity over a period of time. This would have given a richer insight into their comfort levels, and a comparison of their reported behaviour versus the respondents' actual behaviour.

- As a sole researcher, the author was restricted to the physical and intellectual constraints this role entails.

8.4 CONCLUSIONS

This study has highlighted the conflicting comfort levels and opinions the Irish Internet user has about their privacy while participating in online transactions. The study also highlights the fact that to date, there has been little research into the Irish perception of online privacy of personal information. This study highlights the need for more user friendly and informative information collection practices and privacy policies by virtual companies operating online.

8.5 RECOMMENDATIONS FOR FURTHER RESEARCH

This study has highlighted areas that could be explored in further research.

Interviewing respondents may uncover deeper meaning in relation to Irish Internet user perceptions regarding the data privacy policies of virtual firms operating in Ireland.

The study could be expanded to include the whole of Ireland, as there is the possibility of regional differences. Further study could compare different regions, or perhaps to investigate Ireland as a whole.

It would be interesting to do a comparative study between Ireland and other countries, with similar economic and social backgrounds. The Data Protection Act is a European law, so comparative studies between Ireland and European countries covered by the law could uncover some interesting findings. A comparative study between Ireland and another country not covered by the Data Protection Act could also prove interesting.

A further exploration of privacy concerns could be carried out by observing user's online behaviour over a period of time, to compare this to their reported comfort levels of inputting information.

Research into companies themselves, while perhaps more difficult in terms of getting their input, could prove useful in terms of structure and accessibility of privacy policies and seal programs, considering this research study's findings.

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GLOSSARY OF TERMS

ARPA: U.S. Department of Defence Advance Research Projects Agency.

ARPANET: Advance Research Projects Agency Network.

ASCII: American Standard Code for Information Interchange.

CERN: Conseil Européen pour la Recherche Nucléaire (European Council for Nuclear Research, now known as European Organization for Nuclear Research).

Cookies: a text file placed on a web browser by a web server. Sent back to the server each time the browser requests the webpage from the server. Main purpose is to identify users and possibly customise web pages.

CRM: Customer Relationship Management.

Database: a collection of related records or data that is stored on a computer.

e-Commerce: the process of buying and selling goods and services electronically involving transactions using the Internet, networks, and other digital technologies.

EDI: Electronic Data Interchange: the transfer of structured data by prior agreed standards from computer to computer by electronic means.

FTP: File Transfer Protocol: a protocol for exchanging files over the Internet. Most commonly used to upload pages onto a Web Server.

HTML: Hypertext Markup Language: a language/script used to create World Wide Web pages.

HTTP: Hypertext Transfer Protocol: communication protocol used to transfer information on the World Wide Web.

Internet: a network of interconnected computer networks.

Internet Browser: an application that allows users to see and use pages on the World Wide Web.

Log file: a list of all requests made to a web server.

NSF: American National Science Foundation.

ODBC: Open Database Connectivity.

P.C.: Personal Computer.

SQL: Structured Query Language: a computer language for the retrieval and management of data stored in a database.

SSL: Secure Socket Layer: a protocol developed for transmitting private documents via the Internet, using encryption.

TRUSTe: an independent, non-profit making organisation, which certifies and monitors website privacy policies and email policies.

Virtual Firm: An online retailer, without a fixed showroom or face-to-face contact, whose primary mode of selling to, and interacting with consumers is virtual.

Web Server: a computer that stores web pages and sends web pages to a requesting browser.

World Wide Web (www): interlinked pages accessed via the Internet.

XML: eXtensible Markup Language: language for documents containing structured information (text, pictures), to enable sharing of these documents across information systems, primarily the Internet.

APPENDIX I

VIRTUAL FIRMS BACKGROUND

Ryanair:

Ryanair is a low fares airline operating in Europe. Ryanair was set up in 1985 by the Ryan family. In January 2000 Ryanair converted their reservation system to enable them to offer the facility of making and paying for confirmed reservations in real time over the Internet, through the Ryanair website Ryanair.com. Within three months the website was taking over 50,000 bookings per week. Ryanair.com became the most searched travel website in Europe, and bookings through Ryanair.com account for over 98% of all Ryanair bookings.

Ticketmaster:

Ticketmaster was founded in 1976, and its headquarters are in West Hollywood, California. It is an operating business of IAC (InterActiveCorp). Ticketmaster provide ticketing services for hundreds of arenas, stadiums, performing arts venues, museums and theatres worldwide. In July 1999 ticketmaster.ie was launched as the online division for Ticketmaster Ireland Ltd. This gave consumers 24 hour access to event and venue tickets in real time.

Amazon:

Amazon was launched in 1995, and is based in Seattle Washington. It first established separate websites in the United Kingdom and Germany, followed by sites for Canada, Austria, France, China, and Japan. Amazon is primarily an online bookstore, which has expanded to sell electronics, DVDs and CDs, clothing and toys. It was among the first online companies to sell goods over the Internet, and one of the few companies that survived the “dot-com” crash in the late 1990’s.

APPENDIX II

CONSENT FORM FOR PILOT STUDY

You are being invited to participate in a research study into Internet users' perceptions regarding the data privacy policies of Virtual firms. This research study is being conducted by Anita Kealy of Waterford Institute of Technology (WIT). The objective of this research study is to attempt to understand people's opinions and views about privacy, in particular data privacy while using the Internet. It is being carried out by Questionnaire and Interview.

During the interview you may be recorded on audio tape, so that your information may be preserved for research purposes. If at any stage during the Interview you wish to stop the audio recording you can do so.

There are no known risks if you decide to participate in this research study, nor are there any costs for participating in the study. The information you provide will help the researcher understand the opinions of the Irish public about Internet privacy when dealing with Virtual Firms. The information collected may not benefit you directly, but what the researcher can learn from this study should provide general benefits to Internet users, Virtual Firms, and research in the area.

This interview/survey is anonymous. No one will be able to identify you, and no one will know whether you participated in this study. Upon completion of the interview, the interviewer can later compile the recording into a written transcript, which will be analysed to complete the study. Your information will be reported in a way that does not identify you and any recordings will be destroyed after the study is complete.

Your participation in this study is voluntary. You can choose to remove yourself from the study at any stage.

If you have any questions or concerns about participating in the interview or about being in this study, you may contact me at (051) 302000 or at akealy@wit.ie

Anita Kealy _____

Date: _____

Signature of Participant _____

Date: _____

APPENDIX III

QUESTIONNAIRE

Internet User perception of virtual company privacy policy

ISOL Research Group
Waterford Institute of Technology

This survey will take up to 10 minutes to complete.

All Information provided will be kept confidential and used for academic research only. No person(s) will be identified.

Please answer as many questions as possible.

Thank you for your participation.

SECTION ONE: General Internet Usage

1. Have you used the Internet?

Yes ☐

No ☐

If YES, go to Question 2, if No, go to Question 31

If your answer to question 1 is yes:

2. How long have you been using the internet?

Less than one month ☐

One month to less than 6 months ☐

Six months to less than 1 year ☐

One year to less than 2 years ☐

2 Years and over ☐

3. How often do you use the Internet?

Daily ☐

Weekly ☐

Monthly ☐

A few times a year ☐

Rarely ☐

4. If you use the Internet Daily/Weekly Please indicate how many hours you spend on the Internet in that time ☐

5. Where do you have access to the Internet (tick as many as appropriate)?

At Home ☐
At Work ☐
At School ☐
At College ☐
Internet Cafe ☐
Other ☐

6. What are your main reasons for going online? (Please tick as many as are appropriate)

Email……. ☐
News…….. ☐
Sport…….. ☐
Entertainment…….. ☐
Travel…… ☐
Banking……. ☐
Billing……. ☐
Shopping…….. ☐
Downloading free software.. ☐
Searching for a job…….. ☐
Other …… ☐

7. Is your Internet connection

Dial Up (phone line) ☐
Broadband ☐
Don't Know ☐

8. On a scale of 1-5, how much do you agree or disagree with the following statements? (1 = Strongly Disagree and 5 = Strongly Agree) Please Circle your answers

	Strongly Disagree				Strongly Agree
I am a skilled Internet user	1	2	3	4	5
I do not enjoy browsing the Internet	1	2	3	4	5
I am familiar with search techniques on the Internet	1	2	3	4	5
I know how to use an Internet Search Engine	1	2	3	4	5
I am not as skilled as other Internet users	1	2	3	4	5

9. Have you ever purchased goods/services from the Internet?

Yes ☐
No ☐

If YES, go to Question 10, if No, go to question 15

10. How often do you purchase goods/services on the Internet?

Once a day ☐
Once a week ☐
Once a month ☐
2 -3 times in a year ☐
Less than once per year ☐

11. What form of payment do you use when purchasing goods/services on the Internet?

Credit Card ☐
3V Voucher ☐
Paypal ☐
Other (please specify) ☐

_____

_____

_____

_____

If you have used more than one payment method:

12. Which of the payment methods was best?

Credit Card ☐

3V Voucher ☐

Paypal ☐

Other ☐

Why?_____

_____

_____

_____

13. Which website(s) have you purchased from?

_____

_____

_____

_____

14. Are these websites:

Virtual only ☐

Linked to a business ☐

Linked to a shop ☐

Other ☐

Don’t know ☐

15. Please state what level of importance do you attach to the presentation elements of a website? (1 = Not Important and 5 = Very Important)

	Not Important				Very Important
Instructions on the website are easy to read	1	2	3	4	5
Instructions on the website are easy to understand	1	2	3	4	5
The website is easy to use	1	2	3	4	5
Transaction is processed quickly	1	2	3	4	5
Personal Details remembered on return visit to website	1	2	3	4	5
Website has email/phone number in case of problems	1	2	3	4	5

Comment_____

_____

_____

_____

SECTION TWO: Consumer Interaction with Virtual Firms

A main part of the research project is to look at virtual firms. For that reason 3 virtual firms have been chosen as examples for the next set of questions.

16. How familiar are you with these websites? (1 = Unfamiliar and 5 = Very Familiar):

	Unfamiliar				Very Familiar
Ryanair	1	2	3	4	5
Ticketmaster	1	2	3	4	5
Amazon	1	2	3	4	5

17. Have you used these websites?

	Ryanair	Ticketmaster	Amazon
Once			
Once per year			
Once per month			
Once per week			
Never			

Other Website Used:

_____

_____

_____

18. Have you purchased good or services from any of these websites?

Yes ☐ **No** ☐

If you have not purchased anything from a website please skip to question 19:

	Ryanair	Ticketmaster	Amazon	Others (listed above)
Once				
Once per year				
Once per month				
Once per week				

19. How satisfied were you with the site you purchased from? (1 = Very Unsatisfied and 5 = Very Satisfied)

	Very Unsatisfied				Very Satisfied
Ryanair	1	2	3	4	5
Ticketmaster	1	2	3	4	5
Amazon	1	2	3	4	5
Other	1	2	3	4	5

20. How did site features add to your satisfaction/dissatisfaction while using these sites? (1 = Very Important and 5 = Not Important)

	Not Important				Very Important
Information about procedures and policies easy to find	1	2	3	4	5
The website has recognisable company icons/logos	1	2	3	4	5
The website is easy to use	1	2	3	4	5
Purpose of Information collection clearly stated	1	2	3	4	5
The website has a privacy seal of approval	1	2	3	4	5
The website stores my preferences/details for a return visit	1	2	3	4	5
Other	1	2	3	4	5

(If Other) Describe:

_____

_____

_____

_____

21. Do you plan to use this site again? (1 = Definitely and 5 = Never)

	Never				Definitely
Ryanair	1	2	3	4	5
Ticketmaster	1	2	3	4	5
Amazon	1	2	3	4	5
Other	1	2	3	4	5

Comment (Why?)

_____

_____

_____

_____

_____

Section 3: Attitude toward online personal information requests

The purpose of the following set of questions is to understand your attitude toward on-line personal information requests

22. I have given my personal information for purchases when <u>not</u> online (e.g. loyalty cards, competitions)

Yes ☐

No ☐

Don't Know ☐

23: An online company needs my personal information to process my transaction (1 = Unnecessary and 5 = Necessary)

Unnecessary				Necessary
1	2	3	4	5

24: It bothers me when an online company request personal information (1 = Never and 5 = Definitely)

Never				Always
1	2	3	4	5

Comment:_____

_____

_____

25. It bothers me when an online company request personal information not linked to my purchase/transaction (1 = Never and 5 = Definitely)

Never				Always
1	2	3	4	5

Comment:_____

_____

_____

Section Four: Comfort with information disclosure

To establish your willingness to disclose different types of information to an online company, and to measure your comfort with disclosing this information

26. I am comfortable/uncomfortable providing the following information to an online company (1 = Very Uncomfortable and 5 = Very Comfortable)

	Very Uncomfortable				Very Comfortable
My Name	1	2	3	4	5
My Address	1	2	3	4	5
My Telephone/Mobile Number	1	2	3	4	5
My Email Address	1	2	3	4	5
My payment details	1	2	3	4	5
My age	1	2	3	4	5
My gender	1	2	3	4	5
My salary	1	2	3	4	5
My occupation	1	2	3	4	5

If there are options not included in Question 24 above that you would like to discuss, please feel free to do so here:

Comment:_____

_____

_____

_____

_____

_____

_____

Section 5: Company Collection, storage and privacy policies

To assess your awareness as to how and where information gathered by online companies is stored.

27. I agree or disagree with the following statements about what happens with my information when using an online company:

	Strongly Disagree				Strongly Agree
All information is private when using an online Company	1	2	3	4	5
Online companies use my information indefinitely after the transaction	1	2	3	4	5
Online companies requires user permission to use the information after the transaction	1	2	3	4	5
Online companies must disclose use of my information	1	2	3	4	5
I am satisfied that an online company will protect my data	1	2	3	4	5
An online company can use my personal information with my permission	1	2	3	4	5
An online company can sell my personal information to a third party with my permission	1	2	3	4	5

28. Have you ever read any website's privacy policy: (Please tick most appropriate response)

Yes ☐

No ☐

Don't Know ☐

29. Below are some phrases/terms used when discussing Internet Privacy. Please circle the option that best describes what you know about these phrases/terms:

	Not Familiar				Very Familiar
Privacy policy	**1**	**2**	**3**	**4**	**5**
Cookies	**1**	**2**	**3**	**4**	**5**
TRUSTe	**1**	**2**	**3**	**4**	**5**
Log Files	**1**	**2**	**3**	**4**	**5**
PriVC	**1**	**2**	**3**	**4**	**5**
Data Protection Act	**1**	**2**	**3**	**4**	**5**

30. If your answer to Question 28 above was 'Yes' please state if you agree or disagree with the following statements:

If your answer to Question 28 above was 'No' or 'Don't Know' please go to Section 6

	Strongly Disagree				Strongly Agree
The privacy policy was easy to find on the site	**1**	**2**	**3**	**4**	**5**
The privacy policy was easy to read	**1**	**2**	**3**	**4**	**5**
The privacy policy was easy to understand	**1**	**2**	**3**	**4**	**5**
The privacy policy was short and to-the-point	**1**	**2**	**3**	**4**	**5**
The privacy policy answered any questions I had	**1**	**2**	**3**	**4**	**5**
I always read the privacy policy before using a website	**1**	**2**	**3**	**4**	**5**

Please Skip To Section 6

Section 5: Non Internet Users

31. Please state the reason(s) you do not use the Internet: (You can choose more than one)

I do not like to use computers ☐

I do not have time to go online ☐

I have no interest in the Internet ☐

Other ☐

Comment:_____

_____

_____

_____

_____

Please Go To Section 6

Section 6 General Respondent Information

Gender:

Male ☐
Female ☐

Age:

Under 18 ☐
18-25 ☐
26-35 ☐
36-45 ☐
46-55 ☐
Over 55 ☐

Education: (Please tick the highest level you have completed)

Primary School ☐
Secondary School ☐
Technical ☐
Third Level University/IT ☐
Professional ☐

Single Income (per year): (Please tick)

Less than 10,999 ☐
11,000-20,999 ☐
21,000-25,999 ☐
26,000-30,999 ☐
31,000-45,999 ☐
46,000-69,999 ☐
Above 70,000 ☐

Occupation: (Please tick)

Full Time ☐

Part Time ☐

Self Employed ☐

Home Maker ☐

Unemployed ☐

Student ☐

Other ☐

Location: (Please tick) Do you live in:

City ☐

Town ☐

Village ☐

Rurally ☐

Other ☐

If you wish to make further comments concerning survey, please feel free to include them below.

If you would like a copy of the aggregated results of this survey, please tick here ☐

If you would be interested in taking part in a short follow-up interview by phone, please tick here ☐

Thank you for taking the time to complete this questionnaire. Your time and response are greatly appreciated.

Any Further Comments:

_____

_____

_____

_____

APPENDIX IV

Factors Affecting Internet Use

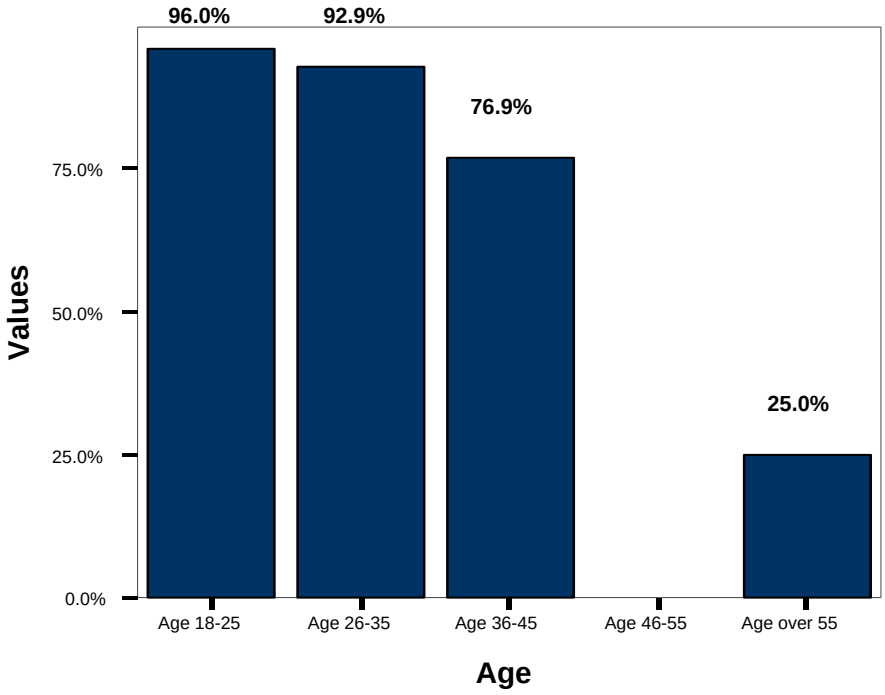
Section 1 of the questionnaire looked at general Internet usage. Of those surveyed 76.54% have used the Internet, 23.5% have not used the Internet. Factors that have an impact on Internet use are discussed in more detail below.

Reasons for non-use of Internet

Reasons	Frequency	Percent	Valid Percent	Cumulative Percent
Do not like computers	10	12.3	52.6	52.6
No interest in internet	9	11.1	47.4	100.0
Total	19	23.5	100.0	

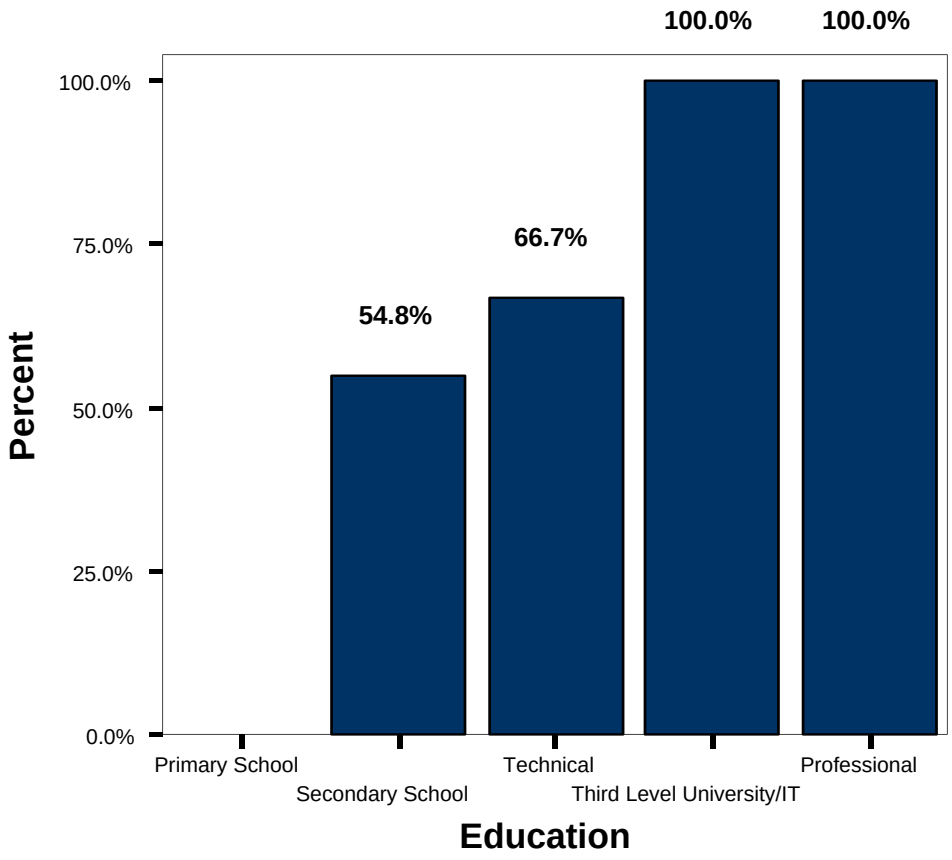
23.5% of respondents did not use the Internet. 12.3% gave a reason as they “do not like computers”; while 11.1% said they had “no interest in the Internet”. No respondent selected “I do not have time to go online”, or “other”.

Age affecting Internet use



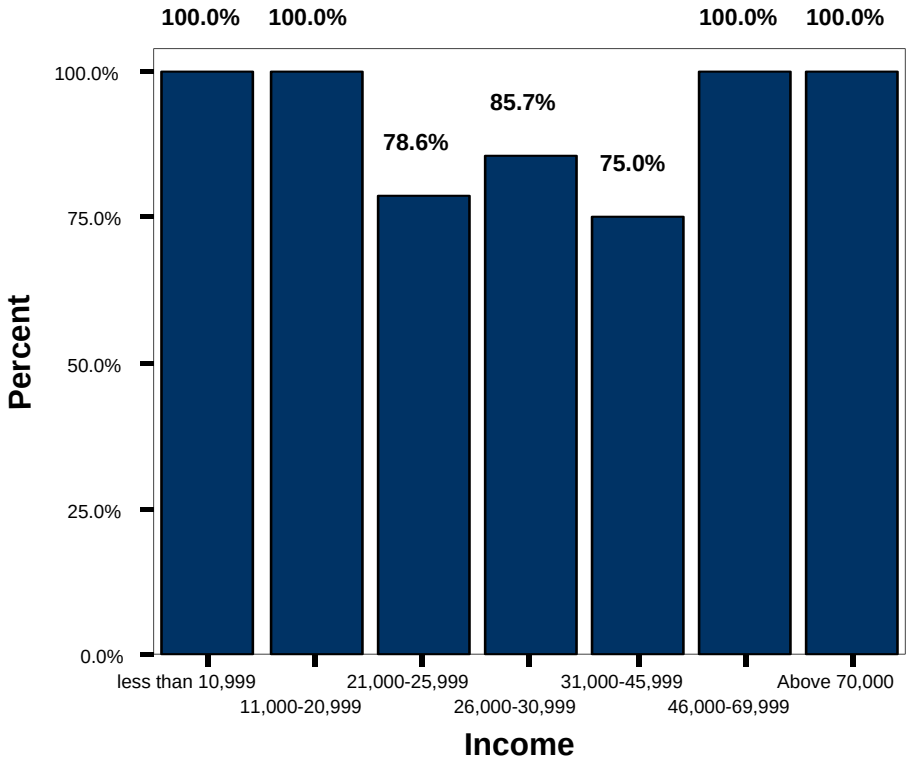
The ages of the respondents are related to their Internet usage. No respondent between the ages of 46 and 55 used the Internet. 75% of those over 55 did not use the Internet. Just 4% of those between 18 and 25, and 7.1 % of those between 26 and 35 did not use the Internet. This gives a strong indication that age is a major factor influencing peoples' Internet usage, implying that people of 45 and over are less inclined to use it.

Education affecting Internet use



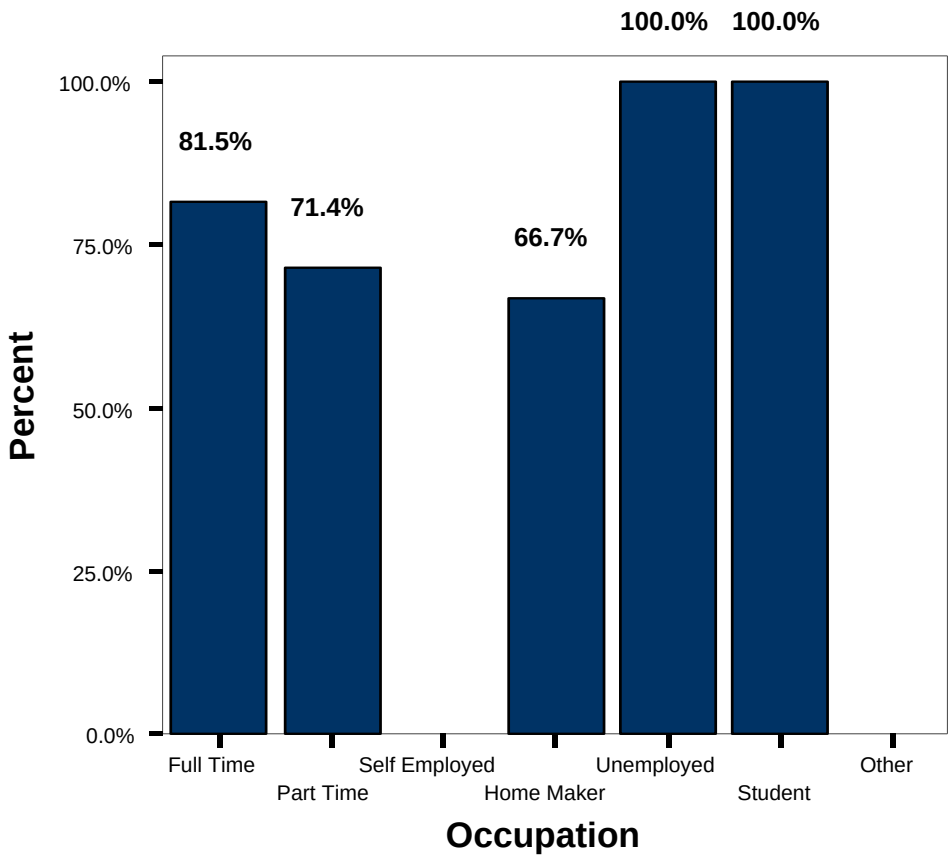
Education levels among the respondents also had an affect on their Internet usage. 100% of those whose highest level of education was primary school had not used the Internet. In contrast 100% of those with third level/university level or professional as their highest level had used the Internet. Those whose highest level of education was secondary school were almost evenly divided between use and non-use, with 54.8% saying yes and 45.2% saying no.

Income affecting Internet use



Income levels appear to have little effect on Internet use. 100% of the two lowest income brackets (less than €10,999 and €11,000 – €20,222) use the Internet, and 100% of the 2 highest income brackets (€46,000 - €69,999 and above €70,000) use the Internet. The highest percentage of non-user was 25% of those earning between €31,000 and €45,999 per annum. However 25% of respondents did not indicate their income.

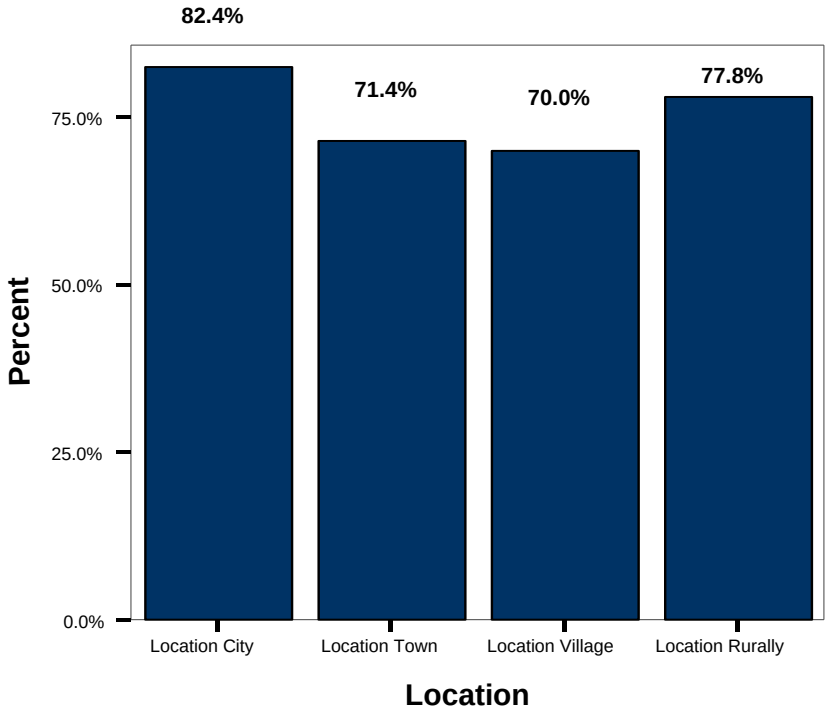
Occupation affecting Internet use



The respondents' occupation has a significant effect on whether they have used the Internet. 100% of those who are self-employed and those who marked 'other' (all of whom were retired) were non-users. However just 1.2% (i.e. one respondent) was self-employed and 6.2% were other/retired.

100% of students and 100% of the unemployed (2.5% of respondents indicated they were unemployed) had used the Internet. 81.5% of those who worked full time had used the Internet.

Location affecting Internet use



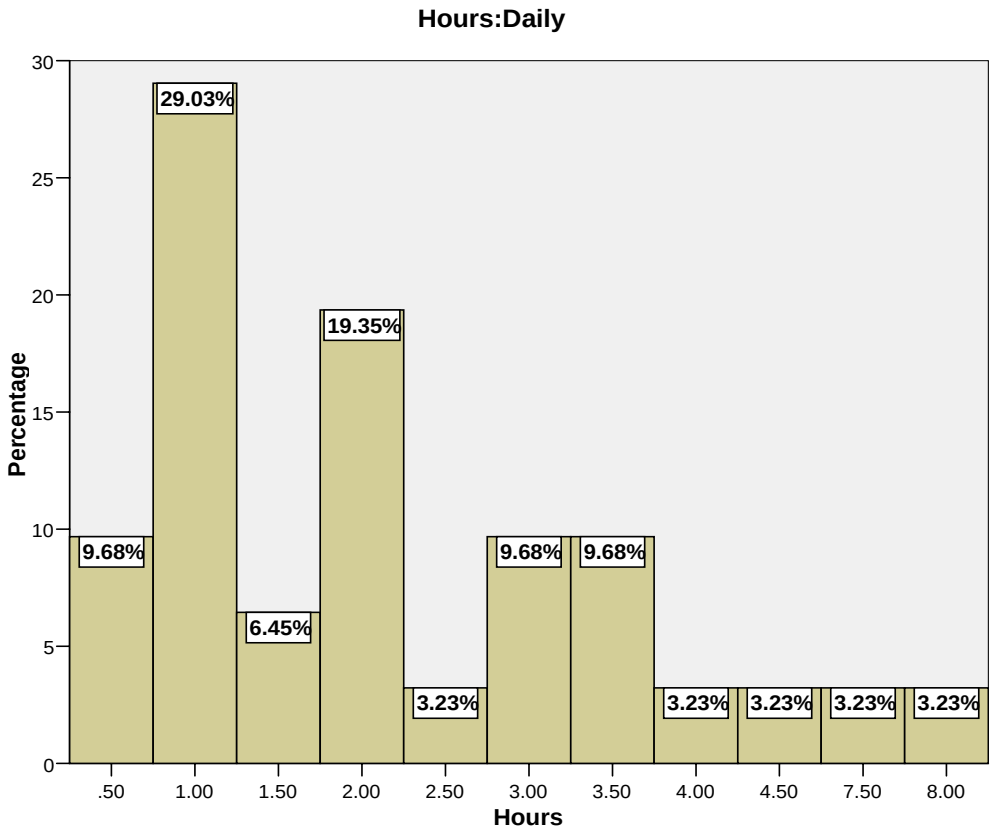
The place of residence/location of the respondent appears to have had little impact on their Internet usage. The highest percentage of non-users live in villages (30%), however this is closely followed by non-users' who live in towns, at 28.6%. The lowest percentages of non-users were those residing in cities with 17.6%.

APPENDIX V

INTERNET ACCESS

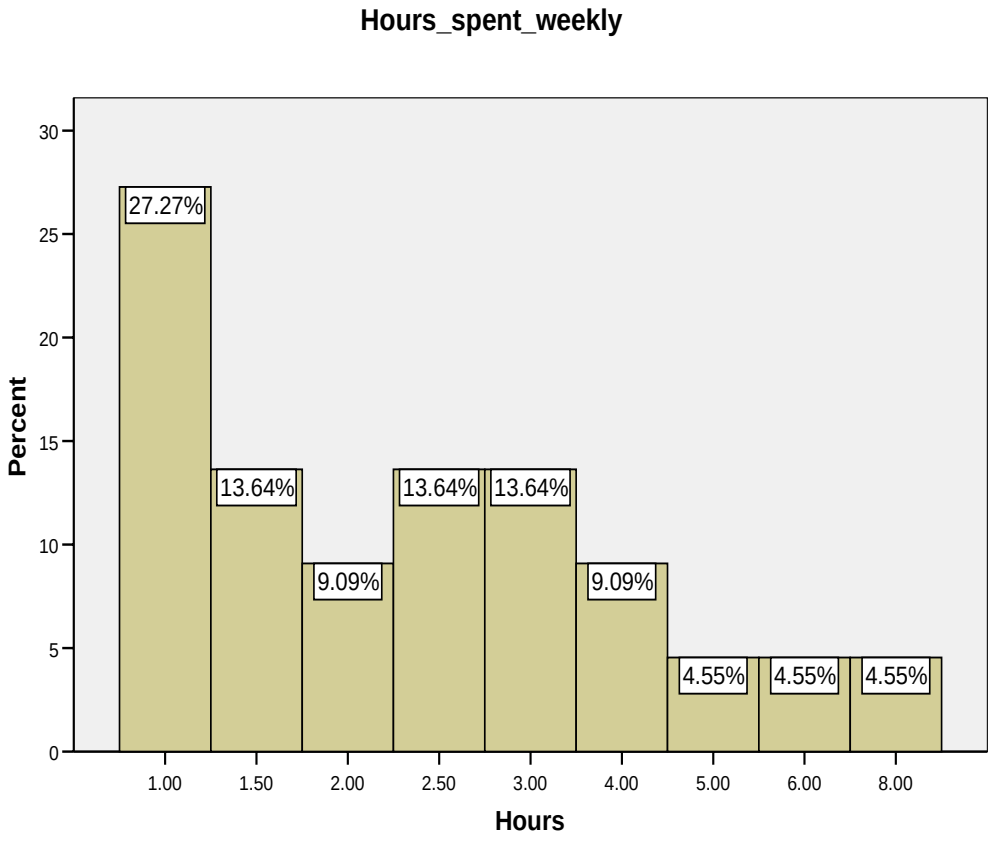
Section one of the questionnaire looked at general Internet use. Respondents were asked to estimate time spent on the Internet in daily and weekly terms.

Hours spent on the Internet per day



29.03% of daily users use the Internet for one hour per day, 19.35% use the Internet for two hours per day. 9.68% use the Internet for half an hour, three hours, and three and a half hours respectively. 6.5% use the Internet for an hour and a half daily, while 3.23% use it for two and a half, four, four and a half, seven and seven and a half hours daily. No Internet user surveyed indicated they used the Internet for five to seven hours daily. The average time spent on the Internet by daily users was 2.3 hours, with a standard deviation of 1.8.

Hours spent on the Internet per week



The majority (27.27%) spend one hour on the Internet per week. 13.64% of respondents each spend one and a half hours, two and a half hours, and three hours on the Internet per week. 9.09% spend two hours and four hours on the Internet, while 4.55% spend five, six and eight hours respectively. 50% of those who used the Internet weekly had access at work, while 72% had access to the Internet at home. On average time spent on the Internet by weekly users is 2.63 hours, with a standard deviation of 1.8.

Internet Connection Type

Connection	Frequency	Percent	Valid Percent	Cumulative Percent
Dial-up (phone)	4	6.5	6.5	6.5
Broadband	55	88.7	88.7	95.2
Don't Know	3	4.8	4.8	100.0
Total	62	100.0	100.0	

The vast majority of those surveyed (88.7%) had broadband access. 6.5% had dial-up access, while 4.8% did not know if their connection was broadband or dial-up. Four respondents (4.8%) did not know what type of connection they had, one had home access, one had work access, one had college access and one listed “other” access.

APPENDIX VI

On-line purchasing

Section two of the questionnaire investigated consumer interaction with virtual firms. Respondents were asked whether they had purchased goods/services on-line and if so, what payment types they used.

Credit Card/Paypal

		Paypal		Total
		No	Yes	
Credit card	No	2	2	4
	Yes	36	4	40
Total		38	6	44

Credit Card/Other

		Paid other		Total
		No	Yes	
Credit card	No	2	2	4
	Yes	39	1	40
Total		41	3	44

Paypal/Other

		Paid other		Total
		No	Yes	
Paypal	No	36	2	38
	Yes	5	1	6
Total		41	3	44

7 respondents, 15.9% of those who purchased goods/services from the Internet used more than one payment form, three of those preferred credit card, two of them preferred Paypal, and two did not respond.

Table 5.15 Best Payment Form

	Preferred Payment Form			
	Credit Card	Paypal	Non-response	Total
Purchased Goods	3	2	2	7
Total	3	2	2	7

Age groups for purchased goods/services

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	15	34.1	34.1	34.1
	26-35	20	45.5	45.5	79.5
	36-45	8	18.2	18.2	97.7
	46-55	0	0	0	0
	Over 55	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

The majority of respondents who have purchased goods/services from the Internet (45.5%) are between the ages of 26 and 35. The next highest purchasing group are those between the ages of 18 and 25, 34.1% of respondents who made purchases are between those ages. 18.2% of those who purchased goods/services were between the ages of 36 and 45. Just 2.3% of those who indicated they purchased goods were over 55, while no respondent between the ages of 46 and 55 had purchased goods or services on the Internet.